

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Certificate of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana  
Delhi-110039, India

has been assessed and accredited in accordance with the Standard  
**ISO/IEC 17025:2017**

“General Requirements for the Competence of Testing and Calibration Laboratories”  
In the field of  
**Testing**

This certificate remains valid for the Scope of Accreditation as specified  
in the annexure subject to continued compliance to the above standard &  
any other requirements specified by QAI.



**QAI/CIA/TL/2023/0009**

(Date of First Accreditation: 29 April 2023 - 28 April 2025)

Valid from: 29 April 2025

Valid until: 28 April 2027

**Dr. Bhupendra Kumar Rana**  
Chief Executive Officer

**Prof. Vikram Kumar**  
Chair, CIA



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| Electrical Testing |                                                                          |                           |                                           |
|--------------------|--------------------------------------------------------------------------|---------------------------|-------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                             | Specific Tests Performed  | Test Method                               |
|                    | <b>Cells and Batteries</b>                                               |                           |                                           |
| 1.                 | Secondary Lithium-Ion Cells for the Propulsion of Electric Road Vehicles | Dimension measurement     | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.5   |
| 2.                 |                                                                          | Mass measurement          | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.6   |
| 3.                 |                                                                          | General charge conditions | Cl.7.1 IS 16893-1:2018/ IEC 62660-1: 2018 |
| 4.                 |                                                                          | Capacity                  | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.7.2 |
| 5.                 |                                                                          | SOC adjustment            | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.7.3 |
| 6.                 |                                                                          | Power                     | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.7.4 |
| 7.                 |                                                                          | Energy                    | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.7.5 |
| 8.                 |                                                                          | Storage test              | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.7.6 |
| 9.                 |                                                                          | Cycle life test           | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.7.7 |
| 10.                |                                                                          | Energy efficiency test    | IS 16893-1:2018/ IEC 62660-1: 2018 Cl.7.8 |
| 11.                |                                                                          | General charge conditions | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.5.1 |
| 12.                |                                                                          | Capacity                  | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.5.2 |



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|--------------------|--------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                             | Specific Tests Performed   | Test Method                                               |
|                    | Cells and Batteries                                                      |                            |                                                           |
| 13.                |                                                                          | SOC adjustment             | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.5.3                 |
| 14.                | Secondary Lithium-Ion Cells for the Propulsion of Electric Road Vehicles | Vibration                  | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.6, Cl.6.1, Cl.6.1.1 |
| 15.                |                                                                          | Mechanical shock           | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.6.1.2               |
| 16.                |                                                                          | Crush                      | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.6.1.3               |
| 17.                |                                                                          | High temperature endurance | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.6.2, Cl.6.2.1       |
| 18.                |                                                                          | Temperature cycling        | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.6.2.2               |
| 19.                |                                                                          | External short circuit     | IS 16893-2: 2018 / IEC 62660-2: 2018 Cl.6.3, Cl.6.3.1     |
| 20.                |                                                                          | Overcharge                 | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.6.3.2               |
| 21.                |                                                                          | Forced discharge           | IS 16893-2:2018/ IEC 62660-2: 2018 Cl.6.3.3               |
| 22.                |                                                                          | General charge conditions  | IS 16893-3: 2018 / IEC 62660-3: 2022 Cl.5.1               |
| 23.                |                                                                          | Capacity                   | IS 16893-3: 2018/ IEC 62660-3: 2022 Cl.5.2                |
| 24.                |                                                                          | SOC adjustment             | IS 16893-3: 2018/ IEC 62660-3: 2022 Cl.5.3                |



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|                    | Cells and Batteries                                                           |                                             |                                                            |
| 25.                | Secondary Lithium-Ion Cells for the Propulsion of Electric Road Vehicles      | Vibration                                   | IS 16893-3: 2018/ IEC 62660-3: 2022 Cl.6, Cl.6.1, Cl.6.2.1 |
| 26.                |                                                                               | Mechanical shock                            | IS 16893-3: 2018 / IEC 62660-3: 2022 Cl.6.2.2              |
| 27.                |                                                                               | Crush                                       | IS 16893-3: 2018/ IEC 62660-3: Cl.6.2.3 2010               |
| 28.                |                                                                               | High temperature endurance                  | IS 16893-3: 2018/ IEC 62660-3: 2022 Cl.6.3, Cl.6.3.1       |
| 29.                |                                                                               | Temperature cycling                         | IS 16893-3: 2018 / IEC 62660-3: 2022 Cl.6.3.2              |
| 30.                |                                                                               | External short circuit                      | IS 16893-3: 2018/ IEC 62660-3: 2022 Cl.6.4, Cl.6.4.1       |
| 31.                |                                                                               | Overcharge                                  | IS 16893-3: 2018/ IEC 62660-3: 2022 Cl.6.4.2               |
| 32.                |                                                                               | Forced discharge                            | IS 16893-3: 2018 / IEC 62660-3: 2022 Cl.6.4.3, 6.4.4       |
| 33.                |                                                                               | Internal short circuit                      | IS 16893-3: 2018 / IEC 62660-3: 2022 Cl.6.4.4              |
| 34.                | Stationary Cells and Batteries, Lead-Acid Type (with tubular positive plates) | Classification of tests                     | IS 1651: 2013 Cl. 12.1                                     |
| 35.                |                                                                               | Verification of constructional requirements | IS 1651: 2013 Cl. 12.2                                     |
| 36.                |                                                                               | Verification of marking                     | IS 1651: 2013 Cl. 12.3                                     |
| 37.                |                                                                               | Verification of dimensions                  | IS 1651: 2013 Cl. 12.4                                     |



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|--------------------|--------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test                                                         | Specific Tests Performed                           | Test Method             |
|                    | Cells and Batteries                                                                  |                                                    |                         |
| 38.                |                                                                                      | Capacity                                           | IS 1651: 2013 Cl. 12.5  |
| 39.                |                                                                                      | Alternative Rates of Test Discharge                | IS 1651: 2013 Cl. 12.6  |
| 40.                |                                                                                      | Loss of capacity on storage                        | IS 1651: 2013 Cl. 12.7  |
| 41.                |                                                                                      | Endurance Test                                     | IS 1651: 2013 Cl. 12.8  |
| 42.                | Stationary Cells and Batteries, Lead-Acid Type (with tubular positive plates)        | Ampere-hour and watt-hour efficiency               | IS 1651: 2013 Cl. 12.9  |
| 43.                |                                                                                      | Voltage during discharge                           | IS 1651: 2013 Cl. 12.10 |
| 44.                |                                                                                      | Water Loss Test                                    | IS 1651: 2013 Cl. 12.11 |
| 45.                |                                                                                      | Test of suitability of floating battery operation  | IS 1651: 2013 Cl. 12.12 |
| 46.                |                                                                                      | Short circuit current and internal Resistance test | IS 1651: 2013 Cl. 12.13 |
| 47.                |                                                                                      |                                                    |                         |
| 48.                | Stationary Lead-acid batteries- (with tubular positive plates) in Monobloc Container | Classification of test                             | IS 13369: 1992 Cl. 11.1 |
| 49.                |                                                                                      | Verification of construction requirement           | IS 13369: 1992 Cl. 11.2 |
| 50.                |                                                                                      | Verification of marking                            | IS 13369: 1992 Cl. 11.3 |
| 51.                |                                                                                      | Verification of dimensions                         | IS 13369: 1992 Cl. 11.4 |
| 52.                |                                                                                      | Test for Capacity (20 days)                        | IS 13369: 1992 Cl. 11.5 |
|                    |                                                                                      | Test for loss of Capacity on storage               | IS 13369: 1992 Cl. 11.6 |





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|--------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                     | Specific Tests Performed                                             | Test Method                                 |
|                    | Cells and Batteries                                                              |                                                                      |                                             |
| 53.                |                                                                                  | Endurance test                                                       | IS 13369: 1992 Cl. 11.7                     |
| 54.                |                                                                                  | Ampere-hour & watt- hour efficiency test                             | IS 13369: 1992 Cl. 11.8                     |
| 55.                |                                                                                  | Water Loss test                                                      | IS 13369: 1992 Cl. 11.9                     |
| 56.                | Stationary Regulated Lead Acid Batteries                                         | Visual Examination Checking dimensions as per manufacturer's drawing | IS 15549: 2005 Cl. 4.1 to 4.9, 8.1          |
| 57.                |                                                                                  | C10 Capacity and voltage during discharge                            | IS 15549: 2005 Cl. 12.1                     |
| 58.                |                                                                                  | C1 capacity and voltage during discharge                             | IS 15549: 2005 Cl. 12.2                     |
| 59.                |                                                                                  | Capacity Test at Other Discharge Rates                               | IS 15549: 2005 Cl. 12.3                     |
| 60.                |                                                                                  | Ampere hour and watt hour efficiency                                 | IS 15549: 2005 Cl. 12.4 & 12.5              |
| 61.                |                                                                                  | Retention of Charge                                                  | IS 15549: 2005 Cl. 12.6                     |
| 62.                |                                                                                  | Endurance life cycle                                                 | IS 15549: 2005 Cl. 12.10                    |
| 63.                | Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes | Cell designation and marking                                         | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.5   |
| 64.                |                                                                                  | Verification of marking                                              | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.5.2 |



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|--------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                                   | Specific Tests Performed                           | Test Method                                   |
|                    | Cells and Batteries                                                                            |                                                    |                                               |
| 65.                |                                                                                                | Endurance in cycles (accelerated)                  | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.6.3   |
| 66.                |                                                                                                | Electrical tests                                   | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.7     |
| 67.                |                                                                                                | Discharge performance at 20°C (rated) capacity     | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.7.3.1 |
| 68.                |                                                                                                | Discharge performance at -20°C                     | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.7.3.2 |
| 69.                |                                                                                                | High-rate discharge capacity at 20°C               | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.7.3.3 |
| 70.                |                                                                                                | Charge (capacity) retention & recovery             | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.7.4   |
| 71.                |                                                                                                | Charge (capacity) recovery after long term storage | IS 16047-3: 2018 / IEC 61960-3: 2017 Cl.7.5   |
| 72.                |                                                                                                | Endurance in cycles                                | IS 16047-3: 2018 / IEC 61960-3: Cl.7.6        |
| 73.                |                                                                                                | Battery internal resistance                        | IS 16047-3: 2018 / IEC 61960-3: Cl.7.7        |
| 74.                | Lead Acid Storage Batteries for Motor Vehicles with Light Weight and High Cranking Performance | Physical examination                               | IS 14257: 2019 Cl. 9.3.1                      |
| 75.                |                                                                                                | Dimension & layout                                 | IS 14257: 2019 Cl. 9.3.2                      |
| 76.                |                                                                                                | Verification of marking                            | IS 14257: 2019 Cl. 9.3.3                      |
| 77.                |                                                                                                | Capacity (5-h Rate)                                | IS 14257: 2019 Cl. 9.3.4                      |



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|--------------------|----------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|
| Sl. No.            | Product (S) Material of Test                                                                 | Specific Tests Performed                  | Test Method               |
|                    | Cells and Batteries                                                                          |                                           |                           |
| 78.                |                                                                                              | High-rate discharge test                  | IS 14257: 2019 Cl. 9.3.5  |
| 79.                |                                                                                              | Cold cranking performance test            | IS 14257: 2019 Cl. 9.3.6  |
| 80.                |                                                                                              | Reverse Capacity Test                     | IS 14257: 2019 Cl. 9.3.7  |
| 81.                |                                                                                              | Charge Acceptance Test                    | IS 14257: 2019 Cl. 9.3.8  |
| 82.                |                                                                                              | Water Consumption Test                    | IS 14257: 2019 Cl. 9.3.9  |
| 83.                |                                                                                              | Charging Retention Test                   | IS 14257: 2019 Cl. 9.3.10 |
| 84.                |                                                                                              | Light Load Endurance Test                 | IS 14257: 2019 Cl. 9.3.11 |
| 85.                |                                                                                              | Life Cycle Test                           | IS 14257: 2019 Cl. 9.3.12 |
| 86.                |                                                                                              | Overcharge endurance test                 | IS 14257: 2019 Cl. 9.3.13 |
| 87.                |                                                                                              | Electrolyte retention test                | IS 14257: 2019 Cl. 9.3.14 |
| 88.                |                                                                                              | Vibration resistance test                 | IS 14257: 2019 Cl. 9.3.15 |
| 89.                |                                                                                              | Strength of terminal test                 | IS 14257: 2019 Cl. 9.3.16 |
| 90.                |                                                                                              | Robustness to fastening test              | IS 14257: 2019 Cl. 9.3.17 |
| 91.                |                                                                                              | Test for dry-charged battery              | IS 14257: 2019 Cl. 9.3.18 |
| 92.                | Secondary Cells and Batteries for Renewable Energy Storage Photovoltaic off-grid Application | C10 Capacity and voltage during discharge | IEC 61427-1: 2013 Cl. 8.1 |
| 93.                |                                                                                              | C120 Capacity                             | IEC 61427-1: 2013 Cl. 8.1 |
| 94.                |                                                                                              | Generic cycling endurance test            | IEC 61427-1: 2013 Cl. 8.2 |





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| Sl. No.            | Product (S) Material of Test                                                                                                                          | Specific Tests Performed                                            | Test Method                                                                                           |
|                    | Cells and Batteries                                                                                                                                   |                                                                     |                                                                                                       |
| 95.                |                                                                                                                                                       | Charge retention during storage                                     | IEC 61427-1: 2013 Cl. 8.3                                                                             |
| 96.                |                                                                                                                                                       | Cycling endurance in photovoltaic applications (extreme conditions) | IEC 61427-1: 2013 Cl. 8.4                                                                             |
| 97.                | Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes (for lithium cells and batteries for use in industrial applications) | Parameter measurement tolerances                                    | IS 16805: 2018 / IEC 62619: 2022 Cl. 4                                                                |
| 98.                |                                                                                                                                                       | General safety considerations                                       | IS 16805: 2018 / IEC 62619: 2022 Cl. 5.1, Cl.5.2, Cl. 5.3, Cl.5.4, Cl. 5.5, Cl. 5.6, Cl. 5.7, Cl. 5.8 |
| 99.                |                                                                                                                                                       | Type test conditions                                                | IS 16805: 2018 / IEC 62619: 2022 Cl. 6.1, Cl.6.2                                                      |
| 100.               |                                                                                                                                                       | Charging procedures for test purposes                               | IS 16805: 2018 / IEC 62619: 2022 Cl. 7.1                                                              |
| 101.               |                                                                                                                                                       | External short circuit test (cell or cell block)                    | IS 16805: 2018 / IEC 62619: 2022 Cl. 7.2.1                                                            |
| 102.               |                                                                                                                                                       | Impact test (cell or cell block)                                    | IS 16805: 2018 / IEC 62619: 2022 Cl. 7.2.2                                                            |
| 103.               |                                                                                                                                                       | Drop Test (cell or cell block, and battery system)                  | IS 16805: 2018 / IEC 62619: 2022 Cl. 7.2.3                                                            |
| 104.               |                                                                                                                                                       | Thermal Abuse test (cell or cell block)                             | IS 16805: 2018 / IEC 62619: 2022 Cl. 7.2.4                                                            |
| 105.               |                                                                                                                                                       | Over charge test (cell or cellblock)                                | IS 16805: 2018 / IEC 62619: 2022 Cl. 7.2.5                                                            |



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| Sl. No.            | Product (S) Material of Test                                                                                                                              | Specific Tests Performed                                    | Test Method                                                   |
|                    | Cells and Batteries                                                                                                                                       |                                                             |                                                               |
| 106.               |                                                                                                                                                           | Forced discharge test (cell or cell block)                  | IS 16805: 2018 / IEC 62619: 2022 Cl. 7.2.6                    |
| 107.               |                                                                                                                                                           | Considerations for internal short circuit-design evaluation | IS 16805: 2018 / IEC 62619: 2022 Cl. 7.3. 7.3.1, 7.3.2, 7.3.3 |
| 108.               |                                                                                                                                                           | Battery safety system                                       | IS 16805: 2018 / IEC 62619: 2022 Cl. 8                        |
| 109.               |                                                                                                                                                           | Information for safety                                      | IS 16805: 2018 / IEC 62619: 2022 Cl. 9                        |
| 110.               |                                                                                                                                                           | Marking and designation                                     | IS 16805: 2018 / IEC 62619: 2022 Cl. 10                       |
| 111.               | Secondary Cells and batteries Containing Alkaline or Other Non-Acid Electrolytes Secondary Lithium Cells and Batteries for Use in Industrial Applications | Parameter measurement and tolerances                        | IS 16822: 2019/ IEC62620 Cl. 4                                |
| 112.               |                                                                                                                                                           | Marking and designation                                     | IS 16822: 2019/ IEC62620: 2014 Cl. 5                          |
| 113.               |                                                                                                                                                           | General                                                     | IS 16822: 2019/ IEC62620: 2014 Cl. 6.1                        |
| 114.               |                                                                                                                                                           | Charging procedure for test purposes                        | IS 16822: 2019/ IEC62620: 2014 Cl. 6.2                        |
| 115.               |                                                                                                                                                           | Discharge performance at +25° C                             | IS 16822: 2019/ IEC 62620: 2014 Cl. 6.3.1                     |
| 116.               |                                                                                                                                                           | Discharge performance at low temperature                    | IS 16822: 2019/ IEC62620: 2014 Cl. 6.3.2                      |
| 117.               |                                                                                                                                                           | High rate permissible current                               | IS 16822: 2019/ IEC62620: 2014 Cl. 6.3.3                      |



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|                    | Cells and Batteries                                                           |                                               |                                          |
| 118.               |                                                                               | Charge (capacity) retention and recovery      | IS 16822: 2019/ IEC62620: 2014 Cl. 6.4   |
| 119.               |                                                                               | Cell and battery internal resistance          | IS 16822: 2019/ IEC62620: 2014 Cl. 6.5   |
| 120.               |                                                                               | Endurance                                     | IS 16822: 2019/ IEC62620: 2014 Cl. 6.6   |
| 121.               |                                                                               | General                                       | IS 16822: 2019/ IEC62620: 2014 Cl. 7.1   |
| 122.               |                                                                               | Sample size                                   | IS 16822: 2019/ IEC62620: 2014 Cl. 7.2   |
| 123.               |                                                                               | Dimensions                                    | IS 16822: 2019/ IEC62620: 2014 Cl. 7.3.1 |
| 124.               |                                                                               | Electrical tests                              | IS 16822: 2019/ IEC62620: 2014 Cl. 7.3.2 |
| 125.               | Stationary Cells and Batteries, Lead-Acid Type (with tubular positive plates) | Capacity                                      | IEC 60896-11: 2002 Cl. 7                 |
| 126.               |                                                                               | Suitability for floating battery operation    | IEC 60896-11: 2002 Cl. 8                 |
| 127.               |                                                                               | Endurance Test                                | IEC 60896-11: 2002 Cl. 9                 |
| 128.               |                                                                               | Charge retention                              | IEC 60896-11: 2002 Cl. 10                |
| 129.               |                                                                               | Short-circuit current and internal resistance | IEC 60896-11: 2002 Cl. 11                |



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|                    | Cells and Batteries                                                                              |                                                                           |                                                |
| 130.               |                                                                                                  | Accuracy of measuring instruments                                         | IEC 60896-11: 2002 Cl. 12                      |
| 131.               |                                                                                                  | Preparation of cells and batteries for testing                            | IEC 60896-11: 2002 Cl. 13                      |
| 132.               |                                                                                                  | Capacity test                                                             | IEC 60896-11: 2002 Cl. 14                      |
| 133.               |                                                                                                  | Test of suitability for floating battery operation                        | IEC 60896-11: 2002 Cl. 15                      |
| 134.               |                                                                                                  | Endurance in discharge-charge cycles                                      | IEC 60896-11: 2002 Cl. 16                      |
| 135.               |                                                                                                  | Endurance in overcharge                                                   | IEC 60896-11: 2002 Cl. 17                      |
| 136.               |                                                                                                  | Charge retention test                                                     | IEC 60896-11: 2002 Cl. 18                      |
| 137.               |                                                                                                  | Short-circuit current and internal resistance determination               | IEC 60896-11: 2002 Cl. 19                      |
| 138.               |                                                                                                  | Test sequence                                                             | IEC 60896-11: 2002 Cl. 20                      |
| 139.               |                                                                                                  | Cell and battery markings                                                 | IEC 60896-11: 2002 Cl. 21                      |
| 140.               | Electrically Propelled Road Vehicles- Dimensions and Designation of Secondary Lithium- Ion Cells | Shape of construction and constitute parts of secondary lithium-ion cells | IS 16827:2018 ISO/IEC PAS 16898 Withdrawn Cl.4 |
| 141.               |                                                                                                  | Designation of cell                                                       | IS 16827:2018 ISO/IEC PAS 16898 Withdrawn Cl.5 |
| 142.               |                                                                                                  | Measurement conditions                                                    | IS 16827:2018 ISO/IEC PAS 16898 Withdrawn Cl.6 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                   |                                         |                                                |
|--------------------|---------------------------------------------------|-----------------------------------------|------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                      | Specific Tests Performed                | Test Method                                    |
|                    | Cells and Batteries                               |                                         |                                                |
| 143.               |                                                   | Dimensions for the selected cell design | IS 16827:2018 ISO/IEC PAS 16898 Withdrawn Cl.7 |
| 144.               | Lithium Metal and Lithium Ion Cells and Batteries | Altitude simulation                     | UN 38.3 Cl. 38.3.4:2016                        |
| 145.               |                                                   | Thermal Test                            | UN 38.3 Cl. 38.3.4.2:2016                      |
| 146.               |                                                   | Vibration Test                          | UN 38.3 Cl. 38.3.4.3:2016                      |
| 147.               |                                                   | Shock Test                              | UN 38.3 Cl. 38.3.4.4:2016                      |
| 148.               |                                                   | External Short Circuit Test             | UN 38.3 Cl. 38.3.4.5:2016                      |
| 149.               |                                                   | Impact Test                             | UN 38.3 Cl. 38.3.4.6.2:2016                    |
| 150.               |                                                   | Crush Test                              | UN 38.3 Cl. 38.3.4.6.3:2016                    |
| 151.               |                                                   | Forced Discharge Test                   | UN 38.3 Cl. 38.3.4.8:2016                      |
| 152.               |                                                   | Overcharge Test                         | UN 38.3 Cl. 38.3.4.7:2016                      |
| 153.               | Lithium Batteries                                 | Abnormal charging                       | UL 1642:1999                                   |
| 154.               |                                                   | Crush                                   | UL 1642:1999                                   |
| 155.               |                                                   | External short circuit                  | UL 1642:1999                                   |
| 156.               |                                                   | Forced discharge                        | UL 1642: :1999                                 |
| 157.               |                                                   | Heating                                 | UL 1642:1999                                   |
| 158.               |                                                   | Impact                                  | UL 1642:1999                                   |
| 159.               |                                                   | Low Pressure (Altitude Simulation)      | UL 1642:1999                                   |





# Quality And Accreditation Institute

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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electrical Testing |                                                                  |                                                                       |                                                                                                                       |
|--------------------|------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                     | Specific Tests Performed                                              | Test Method                                                                                                           |
|                    | Cells and Batteries                                              |                                                                       |                                                                                                                       |
| 160.               |                                                                  | Shock                                                                 | UL 1642:1999                                                                                                          |
| 161.               |                                                                  | Temperature Cycling                                                   | UL 1642:1999                                                                                                          |
| 162.               |                                                                  | Vibration                                                             | UL 1642:1999                                                                                                          |
| 163.               | Secondary Cells and Batteries for Solar Photovoltaic Application | Condition use                                                         | IS 16270: 2023 Cl.4.1, 4.2, 4.2.1, 4.3, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.3.8, 4.3.9, 4.3.10, 4.3.11 |
| 164.               |                                                                  | Safety                                                                | IS 16270: 2023 Cl. 5.5                                                                                                |
| 165.               |                                                                  | Functional characteristic                                             | IS 16270: 2023 Cl. 6                                                                                                  |
| 166.               |                                                                  | General test condition                                                | IS 16270: 2023 Cl. 7.1, 7.2                                                                                           |
| 167.               |                                                                  | Capacity                                                              | IS 16270: 2023 Cl.8.1, 8.1.1                                                                                          |
| 168.               |                                                                  | Endurance in cycle                                                    | IS 16270: 2023 Cl.8.2                                                                                                 |
| 169.               |                                                                  | Charge retention                                                      | IS 16270: 2023 Cl.8.3                                                                                                 |
| 170.               |                                                                  | Cycle endurance test in photovoltaic application (Extreme conditions) | IS 16270: 2023 Cl.8.4, 8.4.1, 8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.6                                                       |
| 171.               |                                                                  | Sulphation Test                                                       | IS 16270: 2023 Cl. 8.5, 8.5.1, 8.5.1.1, 8.5.2, 8.5.2.1                                                                |
| 172.               |                                                                  | Water Loss Test                                                       | IS 16270: 2023 Cl.8.6                                                                                                 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electrical Testing |                                                                                           |                                             |                                                     |
|--------------------|-------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                              | Specific Tests Performed                    | Test Method                                         |
|                    | Cells and Batteries                                                                       |                                             |                                                     |
| 173.               |                                                                                           | Splash proof test (Lead Acid Battery)       | IS 16270: 2023 Cl.8.7, 8.7.1, 8.7.2, 8.7.3, 8.7.4   |
| 174.               |                                                                                           | Mechanical endurance test                   | IS 16270: 2023 Cl.5.1                               |
| 175.               |                                                                                           | Charge efficiency                           | IS 16270: 2023 Cl. 5.2                              |
| 176.               |                                                                                           | Deep discharge protection                   | IS 16270: 2023 Cl. 5.3                              |
| 177.               |                                                                                           | Verification of marking                     | IS 16270: 2023 Cl.5.4, 5.4.1                        |
| 178.               | Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes (Nickel) | Parameter measurement tolerance             | IS 16046 (Part-1): 2018 / IEC 62133-1: 2017 Cl. 4   |
| 179.               |                                                                                           | General Safety Consideration                | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 5  |
| 180.               |                                                                                           | Insulation and wiring                       | IS 16046 (Part 1): 2018 / IEC 62133-1: 2017 Cl. 5.2 |
| 181.               |                                                                                           | Venting                                     | IS 16046 (Part 1): 2018 / IEC 62133-1: 2017 Cl. 5.3 |
| 182.               |                                                                                           | Temperature, voltage and current management | IS 16046 (Part 1): 2018 / IEC 62133-1: 2017 Cl. 5.4 |
| 183.               |                                                                                           | Terminal contacts                           | IS 16046 (Part 1): 2018 / IEC 62133-1: 2017 Cl. 5.5 |
| 184.               |                                                                                           | Assembly of cells into batteries            | IS 16046 (Part 1): 2018 / IEC 62133-1: 2017 Cl. 5.6 |
| 185.               |                                                                                           | Quality plan                                | IS 16046 (Part 1): 2018 / IEC 62133-1: 2017 Cl. 5.7 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electrical Testing |                              |                                                     |                                                         |
|--------------------|------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                            | Test Method                                             |
|                    | Cells and Batteries          |                                                     |                                                         |
| 186.               |                              | Type test and sample size                           | IS 16046 (Part 1): 2018 / IEC 62133-1: 2017 Cl. 6       |
| 187.               |                              | Charging procedure for test purposes                | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.1    |
| 188.               |                              | Continuous low-Rate charging (Cells)                | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.2.1  |
| 189.               |                              | Vibration                                           | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.2.2  |
| 190.               |                              | Case stress at high ambient temperature (Batteries) | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.2.3  |
| 191.               |                              | Temperature cycling                                 | IS 16046-1:2018 / IEC 62133-1: 2017 Cl. 7.2.4           |
| 192.               |                              | Incorrect installation (Cells)                      | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.3.1  |
| 193.               |                              | External short circuit                              | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.3.2  |
| 194.               |                              | Free fall                                           | Cl. 7.3.3, IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 |
| 195.               |                              | Mechanical shock (Crash Hazard)                     | IS 16046 (Part -1): 2018/ IEC 62133-1: 2017 Cl. 7.3.4   |
| 196.               |                              | Thermal abuse                                       | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.3.5  |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                            |                                           |                                                            |
|--------------------|--------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                               | Specific Tests Performed                  | Test Method                                                |
|                    | Cells and Batteries                                                                        |                                           |                                                            |
| 197.               |                                                                                            | Crushing of cells                         | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.3.6     |
| 198.               |                                                                                            | Low pressure                              | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.3.7     |
| 199.               |                                                                                            | Overcharge                                | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 7.3.8     |
| 200.               |                                                                                            | Forced discharge (Cells)                  | IS 16046 (Part-1): 2018 / IEC 62133-1: 2017 Cl. 7.3.9      |
| 201.               |                                                                                            | Information for safety                    | IS 16046 (Part -1): 2018/ IEC 62133-1: 2017 Cl. 8, Cl. 8.1 |
| 202.               |                                                                                            | Small cell and battery safety information | IS 16046 (Part -1): 2018 / IEC 62133-1: 2017 Cl. 8.2       |
| 203.               |                                                                                            | Marking                                   | IS 16046 (Part 1):2018 / IEC 62133-1: 2017 Cl. 9           |
| 204.               |                                                                                            | Packaging                                 | IS 16046 (Part 1): 2018 / IEC 62133-1: 2017 Cl. 10         |
| 205.               | Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes (Lithium) | Parameter measurement tolerance           | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.4          |
| 206.               |                                                                                            | General safety consideration              | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.5          |
| 207.               |                                                                                            | Insulation & wiring                       | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.5.2        |



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                   |                                                                   |
|--------------------|------------------------------|---------------------------------------------------|-------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                          | Test Method                                                       |
|                    | Cells and Batteries          |                                                   |                                                                   |
| 208.               |                              | Venting                                           | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.5.3               |
| 209.               |                              | Temperature, voltage and current management       | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.5.4               |
| 210.               |                              | Terminal contacts                                 | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.5.5               |
| 211.               |                              | Assembly of cells into batteries                  | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.5.6               |
| 212.               |                              | Quality Plan                                      | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.5.7               |
| 213.               |                              | Battery safety component                          | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.5.8               |
| 214.               |                              | Type test and sample size                         | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.6                 |
| 215.               |                              | Charging procedure for test purpose               | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.7.1, 7.1.1, 7.1.2 |
| 216.               |                              | Continuous charging at constant voltage (cells)   | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl.7.2, 7.2.1        |
| 217.               |                              | Case stress at high ambient temperature (Battery) | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl. 7.2.2            |
| 218.               |                              | External short circuit (Cell)                     | IS 16046 (Part- 2): 2018 / IEC 62133-2: 2017 Cl. 7.3.1            |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

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Valid until: 28 April 2027

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| Electrical Testing |                              |                                  |                                                              |
|--------------------|------------------------------|----------------------------------|--------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed         | Test Method                                                  |
|                    | Cells and Batteries          |                                  |                                                              |
| 219.               |                              | External short circuit (Battery) | IS 16046 (Part -2): 2018/IEC 62133-2: 2017 Cl. 7.3.2         |
| 220.               |                              | Free fall                        | IS 16046 (Part -2): 2018 / IEC 62133-2: 2017 Cl. 7.3.3       |
| 221.               |                              | Thermal abuse (Cells)            | IS 16046 (Part -2): 2018 / IEC 62133-2: 2017 Cl. 7.3.4       |
| 222.               |                              | Crush (Cell)                     | IS 16046 (Part -2): 2018/IEC 62133-2: 2017 Cl. 7.3.5         |
| 223.               |                              | Overcharging of battery          | IS 16046 (Part -2): 2018 / IEC 62133-2: 2017 Cl. 7.3.6       |
| 224.               |                              | Forced discharge (Cells)         | IS 16046 (Part-2): 2018 / IEC 62133-2: 2017 Cl. 7.3.7        |
| 225.               |                              | Vibration (Battery)              | IS 16046 (Part -2): 2018 / IEC 62133-2: 2017 Cl. 7.3.8.1     |
| 226.               |                              | Mechanical shock (Battery)       | IS 16046 (Part -2): 2018 / IEC 62133-2: 2017 Cl. 7.3.8.2     |
| 227.               |                              | Information for safety           | IS 16046 (Part -2): 2018 / IEC 62133-2: 2017 Cl. 8, 8.1, 8.2 |
| 228.               |                              | Marking                          | Cl.9, IS 16046 (Part 2): 2018 / IEC 62133-2: 2017            |
| 229.               |                              | Packaging and transport          | IS 16046 (Part 2): 2018 / IEC 62133-2: 2017 Cl.10            |

This is annexure to 'Certificate of Accreditation' and does not require any signature.

www.qai.org.in



18 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSII DC, Bawana,  
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Valid from: 29 April 2025

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| Electrical Testing |                                                |                                                                                         |                                                      |
|--------------------|------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                   | Specific Tests Performed                                                                | Test Method                                          |
|                    | Cells and Batteries                            |                                                                                         |                                                      |
| 230.               |                                                | Measurement of the internal AC resistance for coin cells                                | IS 16046 (Part 2): 2018 / IEC 62133-2: 2017 Annex. D |
| 231.               | Lead Acid Storage Batteries for Motor Vehicles | Materials, construction and workmanship                                                 | IS 7372:2017 Cl. 4 (Withdrawn)                       |
| 232.               |                                                | Capacities, Overall Dimensions and Layout                                               | IS 7372:2017 Cl. 6 (Withdrawn)                       |
| 233.               |                                                | Physical examination                                                                    | IS 7372:2017 Cl. 9.3 (Withdrawn)                     |
| 234.               |                                                | Dimensions and layout                                                                   | IS 7372:2017 Cl.9.4 (Withdrawn)                      |
| 235.               |                                                | Marking                                                                                 | IS 7372:2017 Cl.9.5 (Withdrawn)                      |
| 236.               |                                                | Air pressure test                                                                       | IS 7372:2017 Cl.9.6 (Withdrawn)                      |
| 237.               |                                                | Capacity Test                                                                           | IS 7372:2017 Cl.9.7 (Withdrawn)                      |
| 238.               |                                                | Vibration test                                                                          | IS 7372:2017 Cl.9.8 (Withdrawn)                      |
| 239.               |                                                | High-rate discharge test at normal temperature                                          | IS 7372:2017 Cl.9.9 (Withdrawn)                      |
| 240.               |                                                | High-rate discharge test at low temperature                                             | IS 7372:2017 Cl.9.10 (Withdrawn)                     |
| 241.               |                                                | High-rate discharge test at normal temperature for batteries for heavy duty application | IS 7372:2017 Cl.9.11 (Withdrawn)                     |
| 242.               |                                                | Retention of charge test                                                                | IS 7372:2017 Cl.9.12 (Withdrawn)                     |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electrical Testing |                                                                            |                                                     |                                  |
|--------------------|----------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------|
| Sl. No.            | Product (S) Material of Test                                               | Specific Tests Performed                            | Test Method                      |
|                    | Cells and Batteries                                                        |                                                     |                                  |
| 243.               |                                                                            | Resistance to overcharge test                       | IS 7372:2017 Cl.9.13 (Withdrawn) |
| 244.               |                                                                            | Life test                                           | IS 7372:2017 Cl.9.14 (Withdrawn) |
| 245.               |                                                                            | High- rate discharge capacity (Dry charged battery) | IS 7372:2017 Cl.9.17 (Withdrawn) |
| 246.               | Stationary Cells and Batteries, Lead-Acid Type with Plante Positive Plates | Rating and designation                              | IS 1652: 2013 Cl. 4              |
| 247.               |                                                                            | Constructional requirements                         | IS 1652: 2013 Cl. 5              |
| 248.               |                                                                            | Capacities and dimensions                           | IS 1652: 2013 Cl. 6              |
| 249.               |                                                                            | Marking                                             | IS 1652: 2013 Cl. 7              |
| 250.               |                                                                            | Tests for capacity                                  | IS 1652: 2013 Cl. 11.6           |
| 251.               |                                                                            | Alternate rated test discharge                      | IS 1652: 2013 Cl. 11.7           |
| 252.               |                                                                            | Loss of capacity on storage                         | IS 1652: 2013 Cl. 11.8           |
| 253.               |                                                                            | Endurance test                                      | IS 1652: 2013 Cl. 11.9           |
| 254.               |                                                                            | Ampere-hour and watt-hour efficiency                | IS 1652: 2013 Cl. 11.10          |
| 255.               |                                                                            | Test for voltage during discharge                   | IS 1652: 2013 Cl. 11.11          |
| 256.               | Small-sized valve regulated lead-acid batteries                            | Capacity                                            | JIS C 8702-1: 2009 Cl. 5.1       |
| 257.               |                                                                            | High-rate discharge characteristics                 | JIS C 8702-1: 2009 Cl. 5.2       |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                        |                            |
|--------------------|------------------------------|--------------------------------------------------------|----------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                               | Test Method                |
|                    | Cells and Batteries          |                                                        |                            |
| 258.               |                              | Cycle service endurance                                | JIS C 8702-1: 2009 Cl. 5.3 |
| 259.               |                              | Storage Characteristics                                | JIS C 8702-1: 2009 Cl. 5.4 |
| 260.               |                              | Maximum Permissible current characteristics            | JIS C 8702-1: 2009 Cl. 5.5 |
| 261.               |                              | Charge acceptance characteristics after deep discharge | JIS C 8702-1: 2009 Cl. 5.6 |
| 262.               |                              | Endurance in trickle application                       | JIS C 8702-1: 2009 Cl. 5.7 |
| 263.               |                              | Endurance in trickle application at 40°C               | JIS C 8702-1: 2009 Cl. 5.8 |
| 264.               |                              | Capacity                                               | JIS C 8702-1: 2009 Cl. 7.1 |
| 265.               |                              | High-rate discharge characteristics                    | JIS C 8702-1: 2009 Cl. 7.2 |
| 266.               |                              | Cycle service endurance                                | JIS C 8702-1: 2009 Cl. 7.3 |
| 267.               |                              | Storage characteristics                                | JIS C 8702-1: 2009 Cl. 7.4 |
| 268.               |                              | Maximum permissible current                            | JIS C 8702-1: 2009 Cl. 7.5 |
| 269.               |                              | Charge acceptance characteristics after deep discharge | JIS C 8702-1: 2009 Cl. 7.6 |
| 270.               |                              | Endurance in trickle application                       | JIS C 8702-1: 2009 Cl. 7.7 |
| 271.               |                              | Endurance in trickle application at 40°C               | JIS C 8702-1: 2009 Cl. 7.8 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                              |                                      |                                                     |
|--------------------|----------------------------------------------|--------------------------------------|-----------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                 | Specific Tests Performed             | Test Method                                         |
|                    | <b>Cells and Batteries</b>                   |                                      |                                                     |
| 272.               | Lead - Acid Traction Batteries               | Capacity test                        | IS 5154 (Part 1): 2013<br>IEC 60254-1: 2005 Cl. 5.2 |
| 273.               |                                              | Charge retention test                | IS 5154 (Part 1): 2013<br>IEC 60254-1: 2005 Cl. 5.3 |
| 274.               |                                              | High-rate discharge performance test | IS 5154 (Part 1): 2013<br>IEC 60254-1: 2005 Cl. 5.4 |
| 275.               |                                              | Cyclic endurance test                | IS 5154 (Part 1): 2013<br>IEC 60254-1: 2005 Cl. 5.5 |
| 276.               |                                              | Energy density                       | IS 5154 (Part 1): 2013<br>IEC 60254-1: 2005 Cl. 6.1 |
| 277.               | Lithium Ion Battery for Telecom Applications | Container:                           | Cl. No. 2.3 TEC 67030:2024                          |
| 278.               |                                              | Type of container material           | Cl. No. 2.4 TEC 67030:2024                          |
| 279.               |                                              | Cell/module Covers                   | Cl. No. 2.5 TEC 67030:2024                          |
| 280.               |                                              | Pressure release Valve               | Cl. No. 2.6 TEC 67030:2024                          |
| 281.               |                                              | Cell Capacity                        | Cl. No. 3.1 TEC 67030:2024                          |
| 282.               |                                              | Module capacity                      | Cl. No. 3.2 TEC 67030:2024                          |
| 283.               |                                              | Charging                             | Cl. No. 3.3 TEC 67030:2024                          |
| 284.               |                                              | Voltages during Discharge            | Cl. No. 3.4 TEC 67030:2024                          |
| 285.               |                                              | Battery Discharge Tables             | Cl. No. 3.5 TEC 67030:2024                          |
| 286.               |                                              | Transient Response (Coup De Fouet)   | Cl. No. 3.6 TEC 67030:2024                          |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                     |                             |
|--------------------|------------------------------|-------------------------------------|-----------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed            | Test Method                 |
|                    | Cells and Batteries          |                                     |                             |
| 287.               |                              | Loss of Capacity during Storage     | Cl. No. 3.7 TEC 67030:2024  |
| 288.               |                              | Ampere Hour (Ah) Efficiency         | Cl. No. 3.8 TEC 67030:2024  |
| 289.               |                              | Watt-Hour Efficiency                | Cl. No. 3.9 TEC 67030:2024  |
| 290.               |                              | Short Circuit                       | Cl. No. 3.10 TEC 67030:2024 |
| 291.               |                              | Cell Matching                       | Cl. No. 3.11 TEC 67030:2024 |
| 292.               |                              | Internal resistance (IR Matching)   | Cl. No. 3.12 TEC 67030:2024 |
| 293.               |                              | Standard discharge & charge current | Cl. No. 3.13 TEC 67030:2024 |
| 294.               |                              | Module charging voltage             | Cl. No. 3.14 TEC 67030:2024 |
| 295.               |                              | Cut-off voltage (V):                | Cl. No. 3.15 TEC 67030:2024 |
| 296.               |                              | Environmental requirement           | Cl. No. 3.16 TEC 67030:2024 |
| 297.               |                              | Relative humidity                   | Cl. No. 3.17 TEC 67030:2024 |
| 298.               |                              | Atmospheric pressure                | Cl. No. 3.18 TEC 67030:2024 |
| 299.               |                              | Cycle Life                          | Cl. No. 3.19 TEC 67030:2024 |
| 300.               |                              | Charge limitation                   | Cl. No. 4.2 TEC 67030:2024  |
| 301.               |                              | Discharge performance               | Cl. No. 4.3 TEC 67030:2024  |
| 302.               |                              | Safety Requirements                 | Cl. No. 5.1 TEC 67030:2024  |
| 303.               |                              | Data Display accuracy               | Cl. No. 6.1 TEC 67030:2024  |



# Quality And Accreditation Institute

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### Scope of Accreditation

**IEC Test Labs LLP**

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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                          |                                                                                 |                                |
|--------------------|----------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------|
| Sl. No.            | Product (S) Material of Test                             | Specific Tests Performed                                                        | Test Method                    |
|                    | Cells and Batteries                                      |                                                                                 |                                |
| 304.               |                                                          | Monitoring Function                                                             | Cl. No. 6.2 TEC 67030:2024     |
| 305.               |                                                          | Protection and Alarm                                                            | Cl. No. 6.5 TEC 67030:2024     |
| 306.               |                                                          | Over Charge Protection                                                          | Cl. No. 6.5.1 TEC 67030:2024   |
| 307.               |                                                          | Over discharge protection                                                       | Cl. No. 6.5.2 TEC 67030:2024   |
| 308.               |                                                          | Short Circuit Protection:                                                       | Cl. No. 6.5.3 TEC 67030:2024   |
| 309.               |                                                          | Over Load Protection                                                            | Cl. No. 6.5.4 TEC 67030:2024   |
| 310.               |                                                          | Temperature Protection                                                          | Cl. No. 6.5.5 TEC 67030:2024   |
| 311.               | Stationary Lead-Acid Batteries-<br>Valve Regulated Types | Reporting format                                                                | IEC 60896-22: 2004 Cl. no. 5   |
| 312.               |                                                          | Requirements for gas emission information                                       | IEC 60896-22: 2004 Cl. no. 6.1 |
| 313.               |                                                          | Requirement for high current tolerance                                          | IEC 60896-22: 2004 Cl. no. 6.2 |
| 314.               |                                                          | Requirement for short- circuit current and dc internal resistance information   | IEC 60896-22: 2004 Cl. no. 6.3 |
| 315.               |                                                          | Requirement for protection against internal ignition from external spark source | IEC 60896-22: 2004 Cl. no. 6.4 |
| 316.               |                                                          | Requirement for protection against ground short propensity                      | IEC 60896-22: 2004 Cl. no. 6.5 |



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                                        |                                 |
|--------------------|------------------------------|------------------------------------------------------------------------|---------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                               | Test Method                     |
|                    | Cells and Batteries          |                                                                        |                                 |
| 317.               |                              | Requirement for content and durability of required markings            | IEC 60896-22: 2004 Cl. no. 6.6  |
| 318.               |                              | Requirement for the operation of the valve                             | IEC 60896-22: 2004 Cl. no. 6.8  |
| 319.               |                              | Requirement for definition of the flammability rating of the materials | IEC 60896-22: 2004 Cl. no. 6.9  |
| 320.               |                              | Requirement for discharge capacity performance                         | IEC 60896-22: 2004 Cl. no. 6.11 |
| 321.               |                              | Requirement for charge retention during storage                        | IEC 60896-22: 2004 Cl. no. 6.12 |
| 322.               |                              | Requirement for float service with daily discharges                    | IEC 60896-22: 2004 Cl. no. 6.13 |
| 323.               |                              | Requirement for recharge behavior                                      | IEC 60896-22: 2004 Cl. no. 6.14 |
| 324.               |                              | Requirement for service life at an operating temperature of 40°C       | IEC 60896-22: 2004 Cl. no. 6.15 |
| 325.               |                              | Requirement for the impact of a stress temperature of 55°C to 60°C     | IEC 60896-22: 2004 Cl. no. 6.16 |
| 326.               |                              | Requirement for the impact of abusive over- discharges                 | IEC 60896-22: 2004 Cl. no. 6.17 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                        |                                                                                     |                                 |
|--------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------|
| Sl. No.            | Product (S) Material of Test                           | Specific Tests Performed                                                            | Test Method                     |
|                    | Cells and Batteries                                    |                                                                                     |                                 |
| 327.               |                                                        | Requirement for information on thermal runaway sensitivity                          | IEC 60896-22: 2004 Cl. no. 6.18 |
| 328.               |                                                        | Requirement for the impact of low temperature service on capacity                   | IEC 60896-22: 2004 Cl. no. 6.19 |
| 329.               |                                                        | Requirement for dimensional stability at elevated internal pressure and temperature | IEC 60896-22: 2004 Cl. no. 6.20 |
| 330.               |                                                        | Requirement for stability against mechanical abuse of units during installation     | IEC 60896-22: 2004 Cl. no. 6.21 |
| 331.               | Stationary Lead-Acid Batteries – Valve Regulated Types | Gas emission                                                                        | IEC 60896-21: 2004 Cl. no. 6.1  |
| 332.               |                                                        | High current tolerance                                                              | IEC 60896-21: 2004 Cl. no. 6.2  |
| 333.               |                                                        | Short- circuit current and d.c. internal resistance information                     | IEC 60896-21: 2004 Cl. no. 6.3  |
| 334.               |                                                        | Protection against internal ignition from external spark source                     | IEC 60896-21: 2004 Cl. no. 6.4  |
| 335.               |                                                        | Protection against ground short propensity                                          | IEC 60896-21: 2004 Cl. no. 6.5  |
| 336.               |                                                        | content and durability of required markings                                         | IEC 60896-21: 2004 Cl. no. 6.6  |
| 337.               |                                                        | valve operation                                                                     | IEC 60896-21: 2004 Cl. no. 6.8  |



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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                    |                                                                     |                                 |
|--------------------|------------------------------------|---------------------------------------------------------------------|---------------------------------|
| Sl. No.            | Product (S) Material of Test       | Specific Tests Performed                                            | Test Method                     |
|                    | Cells and Batteries                |                                                                     |                                 |
| 338.               |                                    | Flammability rating of the materials                                | IEC 60896-21: 2004 Cl. no. 6.9  |
| 339.               |                                    | Discharge capacity                                                  | IEC 60896-21: 2004 Cl. no. 6.11 |
| 340.               |                                    | Charge retention during storage                                     | IEC 60896-21: 2004 Cl. no. 6.12 |
| 341.               |                                    | float service with daily discharges                                 | IEC 60896-21: 2004 Cl. no. 6.13 |
| 342.               |                                    | recharge behavior                                                   | IEC 60896-21: 2004 Cl. no. 6.14 |
| 343.               |                                    | service life at an operating temperature of 40°C                    | IEC 60896-21: 2004 Cl. no. 6.15 |
| 344.               |                                    | Impact of a stress temperature of 55°C to 60°C                      | IEC 60896-21: 2004 Cl. no. 6.16 |
| 345.               |                                    | Abusive over- discharges                                            | IEC 60896-21: 2004 Cl. no. 6.17 |
| 346.               |                                    | Thermal runaway sensitivity                                         | IEC 60896-21: 2004 Cl. no. 6.18 |
| 347.               |                                    | Low temperature service sensitivity                                 | IEC 60896-21: 2004 Cl. no. 6.19 |
| 348.               |                                    | Dimensional stability at elevated internal pressure and temperature | IEC 60896-21: 2004 Cl. no. 6.20 |
| 349.               |                                    | Stability against mechanical abuse of units during installation     | IEC 60896-21: 2004 Cl. no. 6.21 |
| 350.               | Household and Commercial Batteries | Short-Circuit                                                       | UL 2054 Cl.no. 9: 2005          |
| 351.               |                                    | Abnormal Charging Test                                              | UL 2054 Cl. no. 10: 2005        |
| 352.               |                                    | Abusive Overcharge Test                                             | UL 2054 Cl. no. 11: 2005        |





# Quality And Accreditation Institute

## Centre for International Accreditation

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                            |                                      |                          |
|--------------------|------------------------------------------------------------|--------------------------------------|--------------------------|
| Sl. No.            | Product (S) Material of Test                               | Specific Tests Performed             | Test Method              |
|                    | Cells and Batteries                                        |                                      |                          |
| 353.               |                                                            | Forced-Discharge Test                | UL 2054 Cl. no. 12: 2005 |
| 354.               |                                                            | Limited Power Source Test            | UL 2054 Cl. no. 13: 2005 |
| 355.               |                                                            | Crush                                | UL 2054 Cl. no. 14: 2005 |
| 356.               |                                                            | Impact                               | UL 2054 Cl. no. 15: 2005 |
| 357.               |                                                            | Shock                                | UL 2054 Cl. no. 16: 2005 |
| 358.               |                                                            | Vibration                            | UL 2054 Cl. no. 17: 2005 |
| 359.               |                                                            | 250 N Steady Force Test              | UL 2054 Cl. no. 19: 2005 |
| 360.               |                                                            | Mold Stress Relief Test              | UL 2054 Cl. no. 20: 2005 |
| 361.               |                                                            | Drop Impact                          | UL 2054 Cl. no. 21: 2005 |
| 362.               |                                                            | Projectile                           | UL 2054 Cl. no. 22: 2005 |
| 363.               |                                                            | Heating                              | UL 2054 Cl. no. 23: 2005 |
| 364.               |                                                            | Temperature Cycling Test             | UL 2054 Cl. no. 24: 2005 |
| 365.               |                                                            | Marking                              | UL 2054 Cl. no. 25: 2005 |
| 366.               | Specific Requirements for Electric Power Train of Vehicles | REESS Ingress protection Requirement | Cl. 6.1.1 AIS 156:2020   |
| 367.               |                                                            | Vibration                            | Cl. 6.2 AIS 156:2020     |
| 368.               |                                                            | Thermal shock and cycling            | Cl. 6.3 AIS 156:2020     |
| 369.               |                                                            | Drop test for removable REESS        | Cl. 6.4.1 AIS 156:2020   |



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## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                      |                                                                                                 |                           |
|--------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------|
| Sl. No.            | Product (S) Material of Test                         | Specific Tests Performed                                                                        | Test Method               |
|                    | Cells and Batteries                                  |                                                                                                 |                           |
| 370.               |                                                      | External short circuit protection                                                               | Cl. 6.6 AIS 156:2020      |
| 371.               |                                                      | Overcharge protection                                                                           | Cl. 6.7 AIS 156:2020      |
| 372.               |                                                      | Over-discharge protection                                                                       | Cl. 6.8 AIS 156:2020      |
| 373.               |                                                      | Over-temperature protection                                                                     | Cl. 6.9 AIS 156:2020      |
| 374.               |                                                      | Thermal Propagation Test                                                                        | Cl. 6.11 AIS 156:2020     |
| 375.               |                                                      | Technical Requirements for Traction Battery (REESS) of L Category Electric Power Train Vehicles | Annex 8K AIS 156:2020     |
| 376.               | Specific Requirements for Electric Power of Vehicles | Application for approval of REESS (Informative)                                                 | Cl. 4 AIS 038: 2015       |
| 377.               |                                                      | External short circuit                                                                          | Cl. 6.6 AIS 038: 2015     |
| 378.               |                                                      | Low temperature protection                                                                      | Cl. 6.11 AIS 038: 2015    |
| 379.               |                                                      | Mechanical Shock- Acceptance Criteria                                                           | Cl. 6.4.1.3 AIS 038: 2015 |
| 380.               |                                                      | Mechanical Shock- Component based test                                                          | Cl. 6.4.1.2 AIS 038: 2015 |
| 381.               |                                                      | Over current protection                                                                         | Cl. 6.10 AIS 038: 2015    |
| 382.               |                                                      | Overcurrent protection                                                                          | Cl. 6.10 AIS 038: 2015    |
| 383.               |                                                      | Over discharge protection                                                                       | Cl. 6.8 AIS 038: 2015     |
| 384.               |                                                      | Over temperature protection                                                                     | Cl. 6.9 AIS 038: 2015     |



# Quality And Accreditation Institute

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                       |                                                                                                            |                         |
|--------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test                                                          | Specific Tests Performed                                                                                   | Test Method             |
|                    | Cells and Batteries                                                                   |                                                                                                            |                         |
| 385.               |                                                                                       | Thermal propagation                                                                                        | Cl. 6.15 AIS 038: 2015  |
| 386.               |                                                                                       | Requirements Of A Rechargeable Electrical Energy Storage System (REESS) With Regard to Its Safety- General | Cl. 6.1 AIS 038: 2015   |
| 387.               |                                                                                       | Thermal shock and cycling                                                                                  | Cl. 6.3 AIS 038: 2015   |
| 388.               |                                                                                       | Vibration                                                                                                  | Cl. 6.3 AIS 038: 2015   |
| 389.               | Batteries for Use in Light Electric Rail (LER) Application and Stationary Application | Measurement equipment accuracy                                                                             | UL 1973 Cl. no.12: 2022 |
| 390.               |                                                                                       | Overcharge test                                                                                            | UL 1973 Cl. no.13: 2022 |
| 391.               |                                                                                       | Short circuit test                                                                                         | UL 1973 Cl. no.14: 2022 |
| 392.               |                                                                                       | Over discharge protection test                                                                             | UL 1973 Cl. no.15: 2022 |
| 393.               |                                                                                       | Temperature and operating limits check test                                                                | UL 1973 Cl. no.16: 2022 |
| 394.               |                                                                                       | Imbalanced Charging Test                                                                                   | UL 1973 Cl. no.17: 2022 |
| 395.               |                                                                                       | Dielectric Voltage withstand test                                                                          | UL 1973 Cl. no.18: 2022 |
| 396.               |                                                                                       | Continuity Test                                                                                            | UL 1973 Cl. no.19: 2022 |
| 397.               |                                                                                       | Failure of cooling/thermal stability system                                                                | UL 1973 Cl. no.20: 2022 |
| 398.               |                                                                                       | Working voltage measurement                                                                                | UL 1973 Cl. no.21: 2022 |

This is annexure to 'Certificate of Accreditation' and does not require any signature.

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30 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                                                                     |                           |
|--------------------|------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                                                            | Test Method               |
|                    | Cells and Batteries          |                                                                                                     |                           |
| 399.               |                              | Test on electrical component locked-rotor test for low voltage dc fans/motors in secondary circuits | UL 1973 Cl. no.22.1: 2022 |
| 400.               |                              | Input                                                                                               | UL 1973 Cl. no.22.2: 2022 |
| 401.               |                              | Leakage current                                                                                     | UL 1973 Cl. no.22.3: 2022 |
| 402.               |                              | Strain relief test                                                                                  | UL 1973 Cl. no.22.4: 2022 |
| 403.               |                              | Push-back relief test                                                                               | UL 1973 Cl. no.22.5: 2022 |
| 404.               |                              | Vibration (LER Motive Application)                                                                  | UL 1973 Cl. no.23: 2022   |
| 405.               |                              | Shock test (LER Motive Application)                                                                 | UL 1973 Cl. no.24: 2022   |
| 406.               |                              | Crush test (LER Motive Application)                                                                 | UL 1973 Cl. no.25: 2022   |
| 407.               |                              | Static force test                                                                                   | UL 1973 Cl. no.26: 2022   |
| 408.               |                              | Impact Test                                                                                         | UL 1973 Cl. no.27: 2022   |
| 409.               |                              | Drop Impact Test                                                                                    | UL 1973 Cl. no.28: 2022   |
| 410.               |                              | Wall mount fixture/handle test                                                                      | UL 1973 Cl. no.29: 2022   |
| 411.               |                              | Mould stress test                                                                                   | UL 1973 Cl. no.30: 2022   |
| 412.               |                              | Pressure release test                                                                               | UL 1973 Cl. no.31: 2022   |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                  |                                               |                         |
|--------------------|--------------------------------------------------|-----------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test                     | Specific Tests Performed                      | Test Method             |
|                    | Cells and Batteries                              |                                               |                         |
| 413.               |                                                  | Start to discharge test                       | UL 1973 Cl. no.32: 2022 |
| 414.               |                                                  | Thermal cycling test (LER Motive Application) | UL 1973 Cl. no.33: 2022 |
| 415.               |                                                  | Resistance to moisture test                   | UL 1973 Cl. no.34: 2022 |
| 416.               |                                                  | Salt Fog Test                                 | UL 1973 Cl. no.35: 2022 |
| 417.               |                                                  | External fire exposure                        | UL 1973 Cl. no.36: 2022 |
| 418.               |                                                  | Internal fire exposure                        | UL 1973 Cl. no.37: 2022 |
| 419.               |                                                  | Marking                                       | UL 1973 Cl. no.38: 2022 |
| 420.               | Lead Acid Batteries for Electrical Road Vehicles | Cycle endurance test                          | IS 13514 Cl. 8.13: 2015 |
| 421.               |                                                  | Capacity test                                 | IS 13514 Cl. 8.10: 2015 |
| 422.               |                                                  | Charge retention test                         | IS 13514 Cl. 8.11: 2015 |
| 423.               |                                                  | Test for high rate discharge                  | IS 13514 Cl.8.12: 2015  |
| 424.               |                                                  | Air pressure test                             | IS 13514 Cl. 8.9: 2015  |
| 425.               |                                                  | Verification of dimensions                    | IS 13514 Cl.8.7: 2015   |
| 426.               |                                                  | Visual examination                            | IS 13514 Cl.8.6: 2015   |
| 427.               | Lead Acid Storage Batteries                      | Capacity test                                 | IS 8320 Cl. 12.7: 2000  |





# Quality And Accreditation Institute

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(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                          |                         |
|--------------------|------------------------------|----------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                 | Test Method             |
|                    | Cells and Batteries          |                                                          |                         |
| 428.               |                              | Test for loss of capacity on Storage                     | IS 8320 Cl. 12.8: 2000  |
| 429.               |                              | Test for ampere-hour and watt-hour efficiency            | IS 8320 Cl. 12.9: 2000  |
| 430.               |                              | Air pressure test                                        | IS 8320 Cl. 12.6: 2000  |
| 431.               |                              | Test for high-rate discharge (HRD) at normal temperature | IS 8320 Cl. 12.10: 2000 |
| 432.               |                              | Test for high-rate discharge (HRD) at low temperature    | IS 8320 Cl. 12.11: 2000 |
| 433.               |                              | Test for resistance to overcharge                        | IS 8320 Cl. 12.12: 2000 |
| 434.               |                              | Test for voltages during discharge                       | IS 8320 Cl. 12.13: 2000 |
| 435.               |                              | Life test and endurance test                             | IS 8320 Cl. 12.14: 2000 |
| 436.               |                              | Vibration test                                           | IS 8320 Cl. 12.15: 2000 |
| 437.               |                              | Bump test                                                | IS 8320 Cl. 12.16: 2000 |
| 438.               |                              | Storage                                                  | IS 8320 Cl. 12.17: 2000 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                                                                                                           |                                                                            |                         |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test                                                                                                                                              | Specific Tests Performed                                                   | Test Method             |
|                    | <b>Domestic Electrical Appliances</b>                                                                                                                                     |                                                                            |                         |
| 1.                 | Safety of Household and Similar Electrical Appliances<br>Part 2 Particular Requirements<br>Section 21 Stationary Storage Type Electric Water Heaters<br>(Second revision) | General requirements                                                       | IS 302-2-21 Cl. 4:2018  |
| 2.                 |                                                                                                                                                                           | General requirements                                                       | IEC 60335-2-21:2022     |
| 3.                 |                                                                                                                                                                           | General conditions for the tests                                           | IS 302-2-21:2018 Cl. 5  |
| 4.                 |                                                                                                                                                                           | General conditions for the tests                                           | IEC 60335-2-21:2022     |
| 5.                 |                                                                                                                                                                           | Classification                                                             | IS 302-2-21:2018 Cl. 6  |
| 6.                 |                                                                                                                                                                           | Classification                                                             | IEC 60335-2-21:2022     |
| 7.                 |                                                                                                                                                                           | Marking / Marking & Instructions                                           | IS 302-2-21:2018 Cl. 7  |
| 8.                 |                                                                                                                                                                           | Marking / Marking & Instructions                                           | IEC 60335-2-21:2022     |
| 9.                 |                                                                                                                                                                           | Protection against electric shock /protection against access to live parts | IS 302-2-21:2018 Cl. 8  |
| 10.                |                                                                                                                                                                           | Protection against electric shock /protection against access to live parts | IEC 60335-2-21 :2022    |
| 11.                |                                                                                                                                                                           | Input and current /power input and current                                 | IS 302-2-21:2018 Cl.10  |
| 12.                |                                                                                                                                                                           | Input and current /power input and current                                 | IEC 60335-2-21: 2022    |
| 13.                |                                                                                                                                                                           | Temperature Rise /Heating                                                  | IS 302-2-21:2018 Cl. 11 |



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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electrical Testing |                                |                                                                                                                                     |                         |
|--------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                                                                            | Test Method             |
|                    | Domestic Electrical Appliances |                                                                                                                                     |                         |
| 14.                |                                | Temperature Rise /Heating                                                                                                           | IEC 60335-2-21: 2022    |
| 15.                |                                | Electrical insulation and leakage current at operating temperature / leakage current and electric strength at operating temperature | IS 302-2-21:2018 Cl. 13 |
| 16.                |                                | Electrical insulation and leakage current at operating temperature / leakage current and electric strength at operating temperature | IEC 60335-2-21: 2022    |
| 17.                |                                | Transient over voltage test                                                                                                         | IS 302-2-21:2018 Cl.14  |
| 18.                |                                | Transient over voltage test                                                                                                         | IEC 60335-2-21: 2022    |
| 19.                |                                | Moisture resistance                                                                                                                 | IS 302-2-21:2018 Cl. 15 |
| 20.                |                                | Moisture resistance                                                                                                                 | IEC 60335-2-21: 2022    |
| 21.                |                                | (After humidity treatment)/leakage current and electric strength                                                                    | IS 302-2-21:2018 Cl. 16 |
| 22.                |                                | (After humidity treatment)/leakage current and electric strength                                                                    | IEC 60335-2-21: 2022    |
| 23.                |                                | Overload protection of transformers and associated circuits/overload protection                                                     | IS 302-2-21:2018 Cl. 17 |

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35 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSII DC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                                    |                         |
|--------------------|--------------------------------|----------------------------------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                                           | Test Method             |
|                    | Domestic Electrical Appliances |                                                                                                    |                         |
| 24.                |                                | Overload protection of transformers and associated circuits/overload protection                    | IEC 60335-2-21: 2022    |
| 25.                |                                | Abnormal operation                                                                                 | IS 302-2-21:2018 Cl. 19 |
| 26.                |                                | Abnormal operation                                                                                 | IEC 60335-2-21 :2022    |
| 27.                |                                | Stability and mechanical hazards                                                                   | IS 302-2-21:2018 Cl. 20 |
| 28.                |                                | Stability and mechanical hazards                                                                   | IEC 60335-2-21: 2022    |
| 29.                |                                | Mechanical Strength                                                                                | IS 302-2-21:2018 Cl. 21 |
| 30.                |                                | Mechanical Strength                                                                                | IEC 60335-2-21: 2022    |
| 31.                |                                | Construction                                                                                       | IS 302-2-21:2018 Cl. 22 |
| 32.                |                                | Construction                                                                                       | IEC 60335-2-21: 2022    |
| 33.                |                                | Internal wiring                                                                                    | IS 302-2-21:2018 Cl. 23 |
| 34.                |                                | Internal wiring                                                                                    | IEC 60335-2-21: 2022    |
| 35.                |                                | Components                                                                                         | IS 302-2-21:2018 Cl. 24 |
| 36.                |                                | Components                                                                                         | IEC 60335-2-21: 2022    |
| 37.                |                                | Supply connection & external flexible cables & cords / supply connection & external flexible cords | IS 302-2-21:2018 Cl. 25 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                                    |                         |
|--------------------|--------------------------------|----------------------------------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                                           | Test Method             |
|                    | Domestic Electrical Appliances |                                                                                                    |                         |
| 38.                |                                | Supply connection & external flexible cables & cords / supply connection & external flexible cords | IEC 60335-2-21: 2022    |
| 39.                |                                | Terminals for external conductors                                                                  | IS 302-2-21:2018 Cl. 26 |
| 40.                |                                | Terminals for external conductors                                                                  | IEC 60335-2-21: 2022    |
| 41.                |                                | Provision for earthing                                                                             | IS 302-2-21:2018 Cl. 27 |
| 42.                |                                | Provision for earthing                                                                             | IEC 60335-2-21: 2022    |
| 43.                |                                | Screws and connections                                                                             | IS 302-2-21:2018 Cl. 28 |
| 44.                |                                | Screws and connections                                                                             | IEC 60335-2-21: 2022    |
| 45.                |                                | Clearance and creepage distances                                                                   | IS 302-2-21:2018 Cl. 29 |
| 46.                |                                | Clearance and creepage distances                                                                   | IEC 60335-2-21: 2022    |
| 47.                |                                | Resistance to heat and Fire                                                                        | IS 302-2-21:2018 Cl. 30 |
| 48.                |                                | Resistance to heat and Fire                                                                        | IEC 60335-2-21: 2022    |
| 49.                |                                | Resistance to Rusting                                                                              | IS 302-2-21:2018 Cl. 31 |
| 50.                |                                | Resistance to Rusting                                                                              | IEC 60335-2-21: 2022    |
| 51.                |                                | Radiation toxicity and similar hazards                                                             | IS 302-2-21:2018 Cl. 32 |
| 52.                |                                | Radiation toxicity and similar hazards                                                             | IEC 60335-2-21: 2022    |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                      |                                             |                      |
|--------------------|--------------------------------------------------------------------------------------|---------------------------------------------|----------------------|
| Sl. No.            | Product (S) Material of Test                                                         | Specific Tests Performed                    | Test Method          |
|                    | Domestic Electrical Appliances                                                       |                                             |                      |
| 53.                | Stationary Storage Type<br>Electric Water Heaters-<br>specification (Fifth revision) | General Requirement                         | Cl.4 IS 2082: 2018   |
| 54.                |                                                                                      | General conditions for the tests            | Cl. 5 IS 2082: 2018  |
| 55.                |                                                                                      | Classification                              | Cl. 6 IS 2082: 2018  |
| 56.                |                                                                                      | Marking and Instructions                    | Cl. 7 IS 2082: 2018  |
| 57.                |                                                                                      | Safety Requirements                         | Cl. 8 IS 2082: 2018  |
| 58.                |                                                                                      | General conditions for<br>Measurements      | Cl. 9 IS 2082: 2018  |
| 59.                |                                                                                      | Mounting of the water heater                | Cl. 10 IS 2082: 2018 |
| 60.                |                                                                                      | Measurements of stored water<br>Temperature | Cl. 11 IS 2082: 2018 |
| 61.                |                                                                                      | Thermostat setting                          | Cl. 12 IS 2082: 2018 |
| 62.                |                                                                                      | Measurement of Energy<br>consumption        | Cl. 13 IS 2082: 2018 |
| 63.                |                                                                                      | Verification of the Rated<br>Capacity       | IS 2082: 2018 Cl. 14 |
| 64.                |                                                                                      | Standing loss per 24 hours                  | IS 2082: 2018 Cl. 15 |
| 65.                |                                                                                      | Hot water output                            | IS 2082: 2018 Cl. 16 |
| 66.                |                                                                                      | Reheating time                              | IS 2082: 2018 Cl. 17 |
| 67.                |                                                                                      | Mixing factor                               | IS 2082: 2018 Cl. 18 |
| 68.                |                                                                                      | Deviation from dial calibration             | IS 2082: 2018 Cl. 19 |
| 69.                |                                                                                      | Cyclic temperature variation                | IS 2082: 2018 Cl. 20 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                                          |                                                                           |                         |
|--------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test                                                                             | Specific Tests Performed                                                  | Test Method             |
|                    | Domestic Electrical Appliances                                                                           |                                                                           |                         |
| 70.                |                                                                                                          | Finish                                                                    | IS 2082: 2018 Cl. 21    |
| 71.                | Safety of Household and Similar Electrical Appliances Part 2 Particular Requirements Section 35 Electric | General requirements                                                      | IS 302-2-35:2017 Cl. 4  |
| 72.                |                                                                                                          | General requirements                                                      | IEC 60335-2-35 :2012    |
| 73.                |                                                                                                          | General conditions for the tests                                          | IS 302-2-35:2017 Cl. 5  |
| 74.                |                                                                                                          | General requirements                                                      | IEC 60335-2-35 :2012    |
| 75.                | Instantaneous Water Heaters (Second Revision)                                                            | Classification                                                            | IS 302-2-35:2017 Cl. 6  |
| 76.                |                                                                                                          | Classification                                                            | IEC 60335-2-35 :2012    |
| 77.                |                                                                                                          | Marking / Marking & Instructions                                          | IS 302-2-35:2017 Cl. 7  |
| 78.                |                                                                                                          | Marking / Marking & Instructions                                          | IEC 60335-2-35:2012     |
| 79.                |                                                                                                          | Protection against electric shock/protection against access to live parts | IS 302-2-35:2017 Cl. 8  |
| 80.                |                                                                                                          | Protection against electric shock/protection against access to live parts | IEC 60335-2-35:2012     |
| 81.                |                                                                                                          | Input and current/power input and current                                 | IS 302-2-35:2017 Cl. 10 |
| 82.                |                                                                                                          | Input and current/power input and current                                 | IEC 60335-2-35:2012     |
| 83.                |                                                                                                          | Temperature rise/heating                                                  | IS 302-2-35:2017 Cl. 11 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                                                                   |                         |
|--------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                                                                          | Test Method             |
|                    | Domestic Electrical Appliances |                                                                                                                                   |                         |
| 84.                |                                | Temperature rise/heating                                                                                                          | IEC 60335-2-35:2012     |
| 85.                |                                | Electrical insulation and leakage current at operating temperature/leakage current and electric strength at operating temperature | IS 302-2-35:2017 Cl. 13 |
| 86.                |                                | Electrical insulation and leakage current at operating temperature/leakage current and electric strength at operating temperature | IEC 60335-2-35:2012     |
| 87.                |                                | Transient over voltage test                                                                                                       | IS 302-2-35:2017 Cl. 14 |
| 88.                |                                | Transient over voltage test                                                                                                       | IEC 60335-2-35:2012     |
| 89.                |                                | Moisture Resistance                                                                                                               | IS 302-2-35:2017 Cl.15  |
| 90.                |                                | Moisture Resistance                                                                                                               | IEC 60335-2-35:2012     |
| 91.                |                                | (After humidity treatment)/leakage current and electric strength                                                                  | IS 302-2-35:2017 Cl.16  |
| 92.                |                                | (After humidity treatment)/leakage current and electric strength                                                                  | IEC 60335-2-35:2012     |
| 93.                |                                | Overload protection of transformers and associated circuits/overload protection                                                   | IS 302-2-35:2017 Cl.17  |

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40 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                                   |                        |
|--------------------|--------------------------------|---------------------------------------------------------------------------------------------------|------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                                          | Test Method            |
|                    | Domestic Electrical Appliances |                                                                                                   |                        |
| 94.                |                                | Overload protection of transformers and associated circuits/overload protection                   | IEC 60335-2-35:2012    |
| 95.                |                                | Abnormal operation                                                                                | IS 302-2-35:2017 Cl.19 |
| 96.                |                                | Abnormal operation                                                                                | IEC 60335-2-35:2012    |
| 97.                |                                | Stability and mechanical hazards                                                                  | IS 302-2-35:2017 Cl.20 |
| 98.                |                                | Stability and mechanical hazards                                                                  | IEC 60335-2-35:2012    |
| 99.                |                                | Mechanical Strength                                                                               | IS 302-2-35:2017 Cl.21 |
| 100.               |                                | Mechanical Strength                                                                               | IEC 60335-2-35:2012    |
| 101.               |                                | Construction                                                                                      | IS 302-2-35:201 Cl.22  |
| 102.               |                                | Construction                                                                                      | IEC 60335-2-35:2012    |
| 103.               |                                | Internal wiring                                                                                   | IS 302-2-35:2017 Cl.23 |
| 104.               |                                | Internal wiring                                                                                   | IEC 60335-2-35:2012    |
| 105.               |                                | Components                                                                                        | IS 302-2-35:2017 Cl.24 |
| 106.               |                                | Components                                                                                        | IEC 60335-2-35:2012    |
| 107.               |                                | Supply connection & external flexible cables & cords/ supply connection & external flexible cords | IS 302-2-35:2017 Cl.25 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                                   |                        |
|--------------------|--------------------------------|---------------------------------------------------------------------------------------------------|------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                                          | Test Method            |
|                    | Domestic Electrical Appliances |                                                                                                   |                        |
| 108.               |                                | Supply connection & external flexible cables & cords/ supply connection & external flexible cords | IEC 60335-2-35:2012    |
| 109.               |                                | Terminals for external conductors                                                                 | IS 302-2-35:2017 Cl.26 |
| 110.               |                                | Terminals for external conductors                                                                 | IEC 60335-2-35:2012    |
| 111.               |                                | Provision for earthing                                                                            | IS 302-2-35:2017 Cl.27 |
| 112.               |                                | Provision for earthing                                                                            | IEC 60335-2-35:2012    |
| 113.               |                                | Screws And Connections                                                                            | IS 302-2-35:2017 Cl.28 |
| 114.               |                                | Screws And Connections                                                                            | IEC 60335-2-35:2012    |
| 115.               |                                | Clearance and creepage distances                                                                  | IS 302-2-35:2017 Cl.29 |
| 116.               |                                | Clearance and creepage distances                                                                  | IEC 60335-2-35:2012    |
| 117.               |                                | Resistance to heat and fire                                                                       | IS 302-2-35:2017 Cl.30 |
| 118.               |                                | Resistance to heat and fire                                                                       | IEC 60335-2-35:2012    |
| 119.               |                                | Resistance to rusting                                                                             | IS 302-2-35:2017 Cl.31 |
| 120.               |                                | Resistance to rusting                                                                             | IEC 60335-2-35:2012    |
| 121.               |                                | Radiation toxicity and similar hazards                                                            | IS 302-2-35:2017 Cl.32 |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSII DC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                                                                    |                                                                            |                          |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------|
| Sl. No.            | Product (S) Material of Test                                                                                                       | Specific Tests Performed                                                   | Test Method              |
|                    | Domestic Electrical Appliances                                                                                                     |                                                                            |                          |
| 122.               |                                                                                                                                    | Radiation toxicity and similar hazards                                     | IEC 60335-2-35:2012      |
| 123.               | Electric Instantaneous Water Heaters                                                                                               | Finish test                                                                | IS 8978 Cl. 10: 1992     |
| 124.               |                                                                                                                                    | Operation of flow switch                                                   | IS 8978 Cl. 11: 1992     |
| 125.               |                                                                                                                                    | Endurance test                                                             | IS 8978 Cl. 12: 1992     |
| 126.               | Safety of household and similar electrical appliances: part 2 particular requirements, section 201 electric immersion water heater | General requirement                                                        | IS 302-2-201 Cl. 4:2008  |
| 127.               |                                                                                                                                    | General requirement                                                        | IEC 60335-2-74: 2021     |
| 128.               |                                                                                                                                    | General Condition for the tests                                            | IS 302-2-201 Cl. 5:2008  |
| 129.               |                                                                                                                                    | General Condition for the tests                                            | IEC 60335-2-74: 2021     |
| 130.               |                                                                                                                                    | Classification                                                             | IS 302-2-201 Cl. 6:2008  |
| 131.               |                                                                                                                                    | Classification                                                             | IEC 60335-2-74: 2021     |
| 132.               |                                                                                                                                    | Marking & Instructions                                                     | IS 302-2-201 Cl. 7:2008  |
| 133.               |                                                                                                                                    | Marking & Instructions                                                     | IEC 60335-2-74: 2021     |
| 134.               |                                                                                                                                    | Protection against electric shock/ Protection against access to live Parts | IS 302-2-201 Cl. 8:2008  |
| 135.               |                                                                                                                                    | Protection against electric shock/ Protection against access to live Parts | IEC 60335-2-74: 2021     |
| 136.               |                                                                                                                                    | Power input and current                                                    | IS 302-2-201 Cl. 10:2008 |
| 137.               |                                                                                                                                    | Power input and current                                                    | IEC 60335-2              |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                 |                          |
|--------------------|--------------------------------|---------------------------------------------------------------------------------|--------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                        | Test Method              |
|                    | Domestic Electrical Appliances |                                                                                 |                          |
|                    |                                |                                                                                 | 74:2021A1:2006+A2:2009   |
| 138.               |                                | Heating                                                                         | IS 302-2-201 Cl. 11:2008 |
| 139.               |                                | Heating                                                                         | IEC 60335-2-74: 2021     |
| 140.               |                                | Leakage current and electric strength at operating temperature                  | IS 302-2-201 Cl. 13:2008 |
| 141.               |                                | Leakage current and electric strength at operating temperature                  | IEC 60335-2-74: 2021     |
| 142.               |                                | Transient over voltage test                                                     | IS 302-2-201 Cl. 14:2008 |
| 143.               |                                | Transient over voltage test                                                     | IEC 60335-2-74: 2021     |
| 144.               |                                | Moisture Resistance                                                             | IS 302-2-201 Cl.15:2008  |
| 145.               |                                | Moisture Resistance                                                             | IEC 60335-2-74: 2021     |
| 146.               |                                | (After humidity treatment)/leakage current and electric strength                | IS 302-2-201 Cl. 16:2008 |
| 147.               |                                | (After humidity treatment)/leakage current and electric strength                | IEC 60335-2-74: 2021     |
| 148.               |                                | Overload protection of transformers and associated circuits/overload protection | IS 302-2-201 Cl. 17:2008 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                 |                          |
|--------------------|--------------------------------|---------------------------------------------------------------------------------|--------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                        | Test Method              |
|                    | Domestic Electrical Appliances |                                                                                 |                          |
| 149.               |                                | Overload protection of transformers and associated circuits/overload protection | IEC 60335-2-74: 2021     |
| 150.               |                                | Endurance                                                                       | IS 302-2-201 Cl. 18:2008 |
| 151.               |                                | Endurance                                                                       | IEC 60335-2-74: 2021     |
| 152.               |                                | Abnormal Operation                                                              | IS 302-2-201 Cl. 19:2008 |
| 153.               |                                | Abnormal Operation                                                              | IEC 60335-2-74: 2021     |
| 154.               |                                | Stability and mechanical hazards                                                | IS 302-2-201 Cl. 20:2008 |
| 155.               |                                | Stability and mechanical hazards                                                | IEC 60335-2-74: 2021     |
| 156.               |                                | Mechanical Strength                                                             | IS 302-2-201 Cl. 21:2008 |
| 157.               |                                | Mechanical Strength                                                             | IEC 60335-2-74: 2021     |
| 158.               |                                | Construction                                                                    | IS 302-2-201 Cl. 22:2008 |
| 159.               |                                | Construction                                                                    | IEC 60335-2-74: 2021     |
| 160.               |                                | Internal wiring                                                                 | IS 302-2-201 Cl. 23:2008 |
| 161.               |                                | Internal wiring                                                                 | IEC 60335-2-74: 2021     |
| 162.               |                                | Components                                                                      | IS 302-2-201 Cl. 24:2008 |
| 163.               |                                | Components                                                                      | IEC 60335-2-74: 2021     |
| 164.               |                                | Supply Connections and External Flexible Cords                                  | IS 302-2-201 Cl. 25:2008 |

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45 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                     |                          |
|--------------------|--------------------------------|-----------------------------------------------------|--------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                            | Test Method              |
|                    | Domestic Electrical Appliances |                                                     |                          |
| 165.               |                                | Supply Connections and External Flexible Cords      | IEC 60335-2-74: 2021     |
| 166.               |                                | Terminals for external conductors                   | IS 302-2-201 Cl. 26:2008 |
| 167.               |                                | Terminals for external conductors                   | IEC 60335-2-74: 2021     |
| 168.               |                                | Provisions for earthing                             | IS 302-2-201 Cl. 27:2008 |
| 169.               |                                | Provisions for earthing                             | IEC 60335-2-74: 2021     |
| 170.               |                                | Screws and connections                              | IS 302-2-201 Cl. 28:2008 |
| 171.               |                                | Screws and connections                              | IEC 60335-2-74: 2021     |
| 172.               |                                | Clearances, creepage distances and solid insulation | IS 302-2-201 Cl. 29:2008 |
| 173.               |                                | Clearances, creepage distances and solid insulation | IEC 60335-2-74: 2021     |
| 174.               |                                | Resistance to heat, fire and tracking               | IS 302-2-201 Cl. 30:2008 |
| 175.               |                                | Resistance to heat, fire and tracking               | IEC 60335-2-74: 2021     |
| 176.               |                                | Resistance to rusting                               | IS 302-2-201 Cl. 31:2008 |
| 177.               |                                | Resistance to rusting                               | IEC 60335-2-74: 2021     |
| 178.               |                                | Radiation, toxicity and similar hazards             | IS 302-2-201 Cl. 32:2008 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                 |                                                                                                                                     |                      |
|--------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Sl. No.            | Product (S) Material of Test                    | Specific Tests Performed                                                                                                            | Test Method          |
|                    | Domestic Electrical Appliances                  |                                                                                                                                     |                      |
| 179.               |                                                 | Radiation, toxicity and similar hazards                                                                                             | IEC 60335-2-74: 2021 |
| 180.               | Electric Immersion Water Heaters- Specification | General requirement                                                                                                                 | IS 368 Cl.4: 2014    |
| 181.               |                                                 | General requirement                                                                                                                 | IS 368 Cl.5: 2014    |
| 182.               |                                                 | Classification                                                                                                                      | IS 368 Cl.6: 2014    |
| 183.               |                                                 | Marking / Marking & Instructions                                                                                                    | IS 368 Cl. 7: 2014   |
| 184.               |                                                 | Protection against electric shock/ protection against access to live Parts                                                          | IS 368 Cl. 8: 2014   |
| 185.               |                                                 | Power Input and Current                                                                                                             | IS 368 Cl. 10: 2014  |
| 186.               |                                                 | Heating                                                                                                                             | IS 368 Cl. 11:2014   |
| 187.               |                                                 | Operation under overload conditions of appliances with heating elements                                                             | IS 368 Cl. 12:2014   |
| 188.               |                                                 | Electrical insulation and leakage current at operating temperature / leakage current and electric strength at operating temperature | IS 368 Cl. 13:2014   |
| 189.               |                                                 | Transient Over Voltage Test                                                                                                         | IS 368 Cl. 14:2014   |
| 190.               |                                                 | Moisture Resistance                                                                                                                 | IS 368 Cl.15:2014    |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                 |                    |
|--------------------|--------------------------------|---------------------------------------------------------------------------------|--------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                        | Test Method        |
|                    | Domestic Electrical Appliances |                                                                                 |                    |
| 191.               |                                | (After humidity treatment)/leakage current and electric strength                | IS 368 Cl. 16:2014 |
| 192.               |                                | Overload protection of transformers and associated circuits/overload protection | IS 368 Cl. 17:2014 |
| 193.               |                                | Endurance                                                                       | IS 368 Cl. 18:2014 |
| 194.               |                                | Abnormal Operation                                                              | IS 368 Cl. 19:2014 |
| 195.               |                                | Stability and mechanical hazards                                                | IS 368 Cl. 20:2014 |
| 196.               |                                | Mechanical Strength                                                             | IS 368 Cl. 21:2014 |
| 197.               |                                | Construction                                                                    | IS 368 Cl. 22:2014 |
| 198.               |                                | Internal wiring                                                                 | IS 368 Cl. 23:2014 |
| 199.               |                                | Components                                                                      | IS 368 Cl. 24:2014 |
| 200.               |                                | Supply connections and external flexible cords                                  | IS 368 Cl. 25:2014 |
| 201.               |                                | Terminals for external conductors                                               | IS 368 Cl. 26:2014 |
| 202.               |                                | Provision for earthing                                                          | IS 368 Cl. 27:2014 |
| 203.               |                                | Screws and connections                                                          | IS 368 Cl. 28:2014 |



# Quality And Accreditation Institute

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                    |                                                     |                      |
|--------------------|------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------|
| Sl. No.            | Product (S) Material of Test                                                       | Specific Tests Performed                            | Test Method          |
|                    | Domestic Electrical Appliances                                                     |                                                     |                      |
| 204.               |                                                                                    | Clearances, creepage distances and solid insulation | IS 368 Cl. 29:2014   |
| 205.               |                                                                                    | Resistance to heat, fire and tracking               | IS 368 Cl. 30:2014   |
| 206.               |                                                                                    | Resistance to rusting                               | IS 368 Cl. 31:2014   |
| 207.               |                                                                                    | Radiation, toxicity and similar hazards             | IS 368 Cl. 32:2014   |
| 208.               | Safety of household and similar electrical appliances: Part 1 General Requirements | General requirement                                 | IS 302-1 Cl. 4: 2008 |
| 209.               |                                                                                    | General requirement                                 | IEC:60335-1: 2020    |
| 210.               |                                                                                    | General conditions for the tests                    | IS 302-1 Cl. 5: 2008 |
| 211.               |                                                                                    | General conditions for the tests                    | IEC:60335-1: 2020    |
| 212.               |                                                                                    | Classification                                      | IS 302-1 Cl. 6:2008  |
| 213.               |                                                                                    | Classification                                      | IEC:60335-1: 2020    |
| 214.               |                                                                                    | Marking & Instructions                              | IS 302-1 Cl. 7:2008  |
| 215.               |                                                                                    | Marking & Instructions                              | IEC:60335-1: 2020    |
| 216.               |                                                                                    | Protection against access to live parts             | IS 302-1 Cl. 8:2008  |
| 217.               |                                                                                    | Protection against access to live parts             | IEC:60335-1: 2020    |
| 218.               |                                                                                    | Starting of motor-operated appliances               | IS 302-1 Cl. 9:2008  |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                |                      |
|--------------------|--------------------------------|----------------------------------------------------------------|----------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                       | Test Method          |
|                    | Domestic Electrical Appliances |                                                                |                      |
| 219.               |                                | Starting of motor-operated appliances                          | IEC:60335-1: 2020    |
| 220.               |                                | Power input and current                                        | IS 302-1 Cl. 10:2008 |
| 221.               |                                | Power input and current                                        | IEC:60335-1: 2020    |
| 222.               |                                | Heating                                                        | IS 302-1 Cl. 11:2008 |
| 223.               |                                | Heating                                                        | IEC:60335-1: 2020    |
| 224.               |                                | Leakage current and electric strength at operating temperature | IS 302-1 Cl. 13:2008 |
| 225.               |                                | Leakage current and electric strength at operating temperature | IEC:60335-1: 2020    |
| 226.               |                                | Transient over voltage test                                    | IS 302-1 Cl. 14:2008 |
| 227.               |                                | Transient over voltage test                                    | IEC:60335-1: 2020    |
| 228.               |                                | Moisture resistance                                            | IS 302-1 Cl. 15:2008 |
| 229.               |                                | Moisture resistance                                            | IEC:60335-1: 2020    |
| 230.               |                                | Leakage current and electric strength                          | IS 302-1 Cl. 16:2008 |
| 231.               |                                | Leakage current and electric Strength                          | IEC:60335-1: 2020    |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                             |                      |
|--------------------|--------------------------------|-------------------------------------------------------------|----------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                    | Test Method          |
|                    | Domestic Electrical Appliances |                                                             |                      |
| 232.               |                                | Overload protection of transformers and associated circuits | IS 302-1 Cl. 17:2008 |
| 233.               |                                | Overload protection of transformers and associated circuits | IEC:60335-1: 2020    |
| 234.               |                                | Endurance                                                   | IS 302-1 Cl. 18:2008 |
| 235.               |                                | Endurance                                                   | IEC:60335-1: 2020    |
| 236.               |                                | Abnormal operation                                          | IS 302-1 Cl. 19:2008 |
| 237.               |                                | Abnormal operation                                          | IEC:60335-1: 2020    |
| 238.               |                                | Stability and mechanical hazards                            | IS 302-1 Cl. 20:2008 |
| 239.               |                                | Stability and mechanical hazards                            | IEC:60335-1: 2020    |
| 240.               |                                | Mechanical strength                                         | IS 302-1 Cl. 21:2008 |
| 241.               |                                | Mechanical strength                                         | IEC:60335-1: 2020    |
| 242.               |                                | Construction                                                | IS 302-1 Cl. 22:2008 |
| 243.               |                                | Construction                                                | IEC:60335-1: 2020    |
| 244.               |                                | Internal wiring                                             | IS 302-1 Cl. 23:2008 |
| 245.               |                                | Internal wiring                                             | IEC:60335-1: 2020    |
| 246.               |                                | Components                                                  | IS 302-1 Cl. 24:2008 |



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## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                     |                      |
|--------------------|--------------------------------|-----------------------------------------------------|----------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                            | Test Method          |
|                    | Domestic Electrical Appliances |                                                     |                      |
| 247.               |                                | Components                                          | IEC:60335-1: 2020    |
| 248.               |                                | Supply connections and external flexible cords      | IS 302-1 Cl. 25:2008 |
| 249.               |                                | Supply connections and external flexible cords      | IEC:60335-1: 2020    |
| 250.               |                                | Terminals for external conductors                   | IS 302-1 Cl.26:2008  |
| 251.               |                                | Terminals for external conductors                   | IEC:60335-1: 2020    |
| 252.               |                                | Provision for earthing                              | IS 302-1 Cl. 27:2008 |
| 253.               |                                | Provision for earthing                              | IEC:60335-1: 2020    |
| 254.               |                                | Screws and connections                              | IS 302-1 Cl. 28:2008 |
| 255.               |                                | Screws and connections                              | IEC:60335-1: 2020    |
| 256.               |                                | Clearances, creepage distances and solid insulation | IS 302-1 Cl. 29:2008 |
| 257.               |                                | Clearances, creepage distances and solid insulation | IEC:60335-1: 2020    |
| 258.               |                                | Resistance to heat and fire                         | IS 302-1 Cl. 30:2008 |
| 259.               |                                | Resistance To heat and fire                         | IEC:60335-1: 2020    |
| 260.               |                                | Resistance to rusting                               | IS 302-1 Cl. 31:2008 |
| 261.               |                                | Resistance to rusting                               | IEC:60335-1: 2020    |

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52 of 135



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                                          |                                                                            |                        |
|--------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| Sl. No.            | Product (S) Material of Test                                                                             | Specific Tests Performed                                                   | Test Method            |
|                    | Domestic Electrical Appliances                                                                           |                                                                            |                        |
| 262.               |                                                                                                          | Radiation, toxicity and similar hazards                                    | IS 302-1 Cl. 32:2008   |
| 263.               |                                                                                                          | Radiation, toxicity and similar hazards                                    | IEC:60335-1: 2020      |
| 264.               | Safety of Household and Similar Electrical                                                               | General Requirement                                                        | IS 302-2-6 Cl. 4:2009  |
| 265.               |                                                                                                          | General Requirement                                                        | IEC 60335-2-6:2014     |
| 266.               |                                                                                                          | General conditions for the tests                                           | IS 302-2-6 Cl. 5: 2009 |
| 267.               |                                                                                                          | General conditions for the tests                                           | IEC 60335-2-6:2014     |
| 268.               | Appliances: Part 2 Particular Requirements, Section 6 Cooking Ranges, Hobs, Ovens and Similar Appliances | Classification                                                             | IS 302-2-6 Cl. 6:2009  |
| 269.               |                                                                                                          | Classification                                                             | IEC 60335-2-6:2014     |
| 270.               |                                                                                                          | Marking / Marking & Instructions                                           | IS 302-2-6 Cl. 7:2009  |
| 271.               |                                                                                                          | Marking / Marking & Instructions                                           | IEC 60335-2-6:2014     |
| 272.               |                                                                                                          | Protection against electric shock/ protection against access to live parts | IS 302-2-6 Cl. 8:2009  |
| 273.               |                                                                                                          | Protection against electric shock/ protection against access to live parts | IEC 60335-2-6:2014     |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                                                                     |                        |
|--------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                                                                            | Test Method            |
|                    | Domestic Electrical Appliances |                                                                                                                                     |                        |
| 274.               |                                | Starting of motor-operated appliances                                                                                               | IS 302-2-6 Cl. 9:2009  |
| 275.               |                                | Starting of motor-operated appliances                                                                                               | IEC 60335-2-6:2014     |
| 276.               |                                | Power input and current                                                                                                             | IS 302-2-6 Cl. 10:2009 |
| 277.               |                                | Power input and current                                                                                                             | IEC 60335-2-6:2014     |
| 278.               |                                | Heating                                                                                                                             | IS 302-2-6 Cl. 11:2009 |
| 279.               |                                | Heating                                                                                                                             | IEC 60335-2-6:2014     |
| 280.               |                                | Electrical insulation and leakage current at operating temperature / leakage current and electric strength at operating temperature | IS 302-2-6 Cl. 13:2009 |
| 281.               |                                | Electrical insulation and leakage current at operating temperature / leakage current and electric strength at operating temperature | IEC 60335-2-6:2014     |
| 282.               |                                | Transient over voltage test                                                                                                         | IS 302-2-6 Cl. 14:2009 |
| 283.               |                                | Transient over voltage test                                                                                                         | IEC 60335-2-6:2014     |
| 284.               |                                | Moisture resistance                                                                                                                 | IS 302-2-6 Cl. 15:2009 |
| 285.               |                                | Moisture resistance                                                                                                                 | IEC 60335-2-6:2014     |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                 |                        |
|--------------------|--------------------------------|---------------------------------------------------------------------------------|------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                        | Test Method            |
|                    | Domestic Electrical Appliances |                                                                                 |                        |
| 286.               |                                | (After humidity treatment)/leakage current and electric strength                | IS 302-2-6 Cl. 16:2009 |
| 287.               |                                | (After humidity treatment)/leakage current and electric strength                | IEC 60335-2-6:2014     |
| 288.               |                                | Overload protection of transformers and associated circuits/overload protection | IS 302-2-6 Cl. 17:2009 |
| 289.               |                                | Overload protection of transformers and associated circuits/overload protection | IEC 60335-2-6:2014     |
| 290.               |                                | Abnormal operation                                                              | IS 302-2-6 Cl. 19:2009 |
| 291.               |                                | Abnormal operation                                                              | IEC 60335-2-6:2014     |
| 292.               |                                | Stability and mechanical hazards                                                | IS 302-2-6 Cl. 20:2009 |
| 293.               |                                | Stability and mechanical hazards                                                | IEC 60335-2-6:2014     |
| 294.               |                                | Mechanical strength                                                             | IS 302-2-6 Cl. 21:2009 |
| 295.               |                                | Mechanical Strength                                                             | IEC 60335-2-6:2014     |
| 296.               |                                | Construction                                                                    | IS 302-2-6 Cl. 22:2009 |
| 297.               |                                | Construction                                                                    | IEC 60335-2-6:2014     |
| 298.               |                                | Internal wiring                                                                 | IS 302-2-6 Cl. 23:2009 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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**IEC Test Labs LLP**

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                     |                        |
|--------------------|--------------------------------|-----------------------------------------------------|------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                            | Test Method            |
|                    | Domestic Electrical Appliances |                                                     |                        |
| 299.               |                                | Internal wiring                                     | IEC 60335-2-6:2014     |
| 300.               |                                | Components                                          | IS 302-2-6 Cl. 24:2009 |
| 301.               |                                | Components                                          | IEC 60335-2-6:2014     |
| 302.               |                                | Supply connections and external flexible cords      | IS 302-2-6 Cl. 25:2009 |
| 303.               |                                | Supply connections and external flexible cords      | IEC 60335-2-6:2014     |
| 304.               |                                | Terminals for external conductors                   | IS 302-2-6 Cl.26:2009  |
| 305.               |                                | Terminals for external conductors                   | IEC 60335-2-6:2014     |
| 306.               |                                | Provision for earthing                              | IS 302-2-6 Cl. 27:2009 |
| 307.               |                                | Provision for earthing                              | IEC 60335-2-6:2014     |
| 308.               |                                | Screws and connections                              | IS 302-2-6 Cl. 28:2009 |
| 309.               |                                | Screws and connections                              | IEC 60335-2-6:2014     |
| 310.               |                                | Clearances, creepage distances and solid insulation | IS 302-2-6 Cl. 29:2009 |
| 311.               |                                | Clearances, creepage distances and solid insulation | IEC 60335-2-6:2014     |
| 312.               |                                | Resistance to heat, fire and tracking               | IS 302-2-6 Cl. 30:2009 |
| 313.               |                                | Resistance to heat, fire and tracking               | IEC 60335-2-6:2014     |

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56 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                                                                  |                                                                            |                        |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| Sl. No.            | Product (S) Material of Test                                                                                                     | Specific Tests Performed                                                   | Test Method            |
|                    | Domestic Electrical Appliances                                                                                                   |                                                                            |                        |
| 314.               |                                                                                                                                  | Resistance to rusting                                                      | IS 302-2-6 Cl. 31:2009 |
| 315.               |                                                                                                                                  | Resistance to rusting                                                      | IEC 60335-2-6:2014     |
| 316.               |                                                                                                                                  | Radiation, toxicity and similar hazards                                    | IS 302-2-6 Cl. 32:2009 |
| 317.               |                                                                                                                                  | Radiation, toxicity and similar hazards                                    | IEC 60335-2-6:2014     |
| 318.               | Safety of Household and Similar Electrical Appliances: Part 2 Particular Requirements: Section 15 Appliances for Heating Liquids | General requirements                                                       | IS 302-2-15 Cl. 4:2009 |
| 319.               |                                                                                                                                  | General requirements                                                       | IEC 60335-2-15:2012    |
| 320.               |                                                                                                                                  | General conditions for the tests                                           | IS 302-2-15 Cl. 5:2009 |
| 321.               |                                                                                                                                  | General conditions for the tests                                           | IEC 60335-2-15:2012    |
| 322.               |                                                                                                                                  | Classification                                                             | IS 302-2-15 Cl. 6:2009 |
| 323.               |                                                                                                                                  | Classification                                                             | IEC 60335-2-15:2012    |
| 324.               |                                                                                                                                  | Marking / Marking & Instructions                                           | IS 302-2-15 Cl. 7:2009 |
| 325.               |                                                                                                                                  | Marking / Marking & Instructions                                           | IEC 60335-2-15:2012    |
| 326.               |                                                                                                                                  | Protection against electric shock/ protection against access to live parts | IS 302-2-15 Cl. 8:2009 |
| 327.               |                                                                                                                                  | Protection against electric shock/ protection against access to live parts | IEC 60335-2-15:2012    |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                                           |                         |
|--------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                                                  | Test Method             |
|                    | Domestic Electrical Appliances |                                                                                                           |                         |
| 328.               |                                | Starting of motor-operated appliances                                                                     | IS 302-2-15 Cl. 9:2009  |
| 329.               |                                | Starting of motor-operated appliances                                                                     | IEC 60335-2-15:2012     |
| 330.               |                                | Power input and current                                                                                   | IS 302-2-15 Cl. 10:2009 |
| 331.               |                                | Power input and current                                                                                   | IEC 60335-2-15:2012     |
| 332.               |                                | Heating                                                                                                   | IS 302-2-15 Cl. 11:2009 |
| 333.               |                                | Heating                                                                                                   | IEC 60335-2-15:2012     |
| 334.               |                                | Leakage current at operating temperature / leakage current and electric strength at operating temperature | IS 302-2-15 Cl. 13:2009 |
| 335.               |                                | Leakage current at operating temperature / leakage current and electric strength at operating temperature | IEC 60335-2-15:2012     |
| 336.               |                                | Transient over voltage test                                                                               | IS 302-2-15 Cl. 14:2009 |
| 337.               |                                | Transient over voltage test                                                                               | IEC 60335-2-15:2012     |
| 338.               |                                | Moisture resistance                                                                                       | IS 302-2-15 Cl. 15:2009 |
| 339.               |                                | Moisture resistance                                                                                       | IEC 60335-2-15:2012     |
| 340.               |                                | Leakage current and electric strength                                                                     | IS 302-2-15 Cl. 16:2009 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                                                 |                         |
|--------------------|--------------------------------|---------------------------------------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                                                        | Test Method             |
|                    | Domestic Electrical Appliances |                                                                                 |                         |
| 341.               |                                | Leakage Current and Electric Strength                                           | IEC 60335-2-15:2012     |
| 342.               |                                | Overload protection of transformers and associated circuits/overload protection | IS 302-2-15 Cl. 17:2009 |
| 343.               |                                | Overload protection of transformers and associated circuits/overload protection | IEC 60335-2-15:2012     |
| 344.               |                                | Abnormal Operation                                                              | IS 302-2-15 Cl. 19:2009 |
| 345.               |                                | Abnormal Operation                                                              | IEC 60335-2-15:2012     |
| 346.               |                                | Stability and mechanical Hazards                                                | IS 302-2-15 Cl. 20:2009 |
| 347.               |                                | Stability and mechanical Hazards                                                | IEC 60335-2-15:2012     |
| 348.               |                                | Mechanical Strength                                                             | IS 302-2-15 Cl. 21:2009 |
| 349.               |                                | Mechanical Strength                                                             | IEC 60335-2-15:2012     |
| 350.               |                                | Construction                                                                    | IS 302-2-15 Cl. 22:2009 |
| 351.               |                                | Construction                                                                    | IEC 60335-2-15:2012     |
| 352.               |                                | Internal wiring                                                                 | IS 302-2-15 Cl. 23:2009 |
| 353.               |                                | Internal wiring                                                                 | IEC 60335-2-15:2012     |
| 354.               |                                | Components                                                                      | IS 302-2-15 Cl. 24:2009 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                                     |                         |
|--------------------|--------------------------------|-----------------------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                            | Test Method             |
|                    | Domestic Electrical Appliances |                                                     |                         |
| 355.               |                                | Components                                          | IEC 60335-2-15:2012     |
| 356.               |                                | Supply connections and external flexible cords      | IS 302-2-15 Cl. 25:2009 |
| 357.               |                                | Supply connections and external flexible cords      | IEC 60335-2-15:2012     |
| 358.               |                                | Terminals for external conductors                   | IS 302-2-15 Cl.26:2009  |
| 359.               |                                | Terminals for external conductors                   | IEC 60335-2-15:2012     |
| 360.               |                                | Provision for earthing                              | IS 302-2-15 Cl. 27:2009 |
| 361.               |                                | Provision for earthing                              | IEC 60335-2-15:2012     |
| 362.               |                                | Screws and connections                              | IS 302-2-15 Cl. 28:2009 |
| 363.               |                                | Screws and connections                              | IEC 60335-2-15:2012     |
| 364.               |                                | Clearances, creepage distances and solid insulation | IS 302-2-15 Cl. 29:2009 |
| 365.               |                                | Clearances, Creepage Distances and Solid Insulation | IEC 60335-2-15:2012     |
| 366.               |                                | Resistance to heat, fire and tracking               | IS 302-2-15 Cl. 30:2009 |
| 367.               |                                | Resistance to heat, fire and tracking               | IEC 60335-2-15:2012     |
| 368.               |                                | Resistance to rusting                               | IS 302-2-15 Cl. 31:2009 |

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60 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

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### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                |                                         |                         |
|--------------------|--------------------------------|-----------------------------------------|-------------------------|
| Sl. No.            | Product (S) Material of Test   | Specific Tests Performed                | Test Method             |
|                    | Domestic Electrical Appliances |                                         |                         |
| 369.               |                                | Resistance to rusting                   | IEC 60335-2-15:2012     |
| 370.               |                                | Radiation, toxicity and similar hazards | IS 302-2-15 Cl. 32:2009 |
| 371.               |                                | Radiation, toxicity and similar hazards | IEC 60335-2-15:2012     |



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Valid until: 28 April 2027

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| Electrical Testing |                                                                                     |                                                        |                                     |
|--------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                        | Specific Tests Performed                               | Test Method                         |
|                    | <b>Lamp, Luminaries &amp; Accessories</b>                                           |                                                        |                                     |
| 1.                 | Self - Ballasted LED Lamps for General Lighting Services Part 1 Safety Requirements | General requirement and general test requirements      | IS 16102 (Part 1) Cl. 4: 2012       |
| 2.                 |                                                                                     | Marking                                                | IS 16102 (Part 1) Cl. 5: 2012       |
| 3.                 |                                                                                     | Interchangeability                                     | IS 16102 (Part 1) Cl. 6: 2012       |
| 4.                 |                                                                                     | Protection Against Accidental Contacts with Live Parts | IS 16102 (Part 1) Cl. 7: 2012       |
| 5.                 |                                                                                     | Insulation Resistance and electric Strength            | IS 16102 (Part 1) Cl. 8: 2012       |
| 6.                 |                                                                                     | Mechanical Strength                                    | IS 16102 (Part 1) Cl. 9: 2012       |
| 7.                 |                                                                                     | CAP Temperature Rise                                   | IS 16102 (Part 1) Cl. 10: 2012      |
| 8.                 |                                                                                     | Resistance to Heat                                     | IS 16102 (Part 1) Cl. 11: 2012      |
| 9.                 |                                                                                     | Resistance to Flame and Ignition                       | IS 16102 (Part 1) Cl. 12: 2012      |
| 10.                |                                                                                     | Fault Condition                                        | IS 16102 (Part 1) Cl. 13: 2012      |
| 11.                |                                                                                     | Creepage Distances and Clearances                      | IS 16102 (Part 1) Cl. 14: 2012      |
| 12.                |                                                                                     | General requirements                                   | IS 15885 (Part 2, Sec13) Cl. 4:2012 |
| 13.                |                                                                                     | General requirements                                   | IEC 61347-2-13 Cl. 4: 2014          |
| 14.                | Safety of Lamp Control gear Part 2 Particular Requirements                          | Classification                                         | IS 15885 (Part 2, Sec13) Cl. 6:2012 |
| 15.                |                                                                                     | Classification                                         | IEC 61347-2-13 Cl. 6: 2014          |

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www.qai.org.in



62 of 135



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                  |                                                       |                                      |
|--------------------|------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------|
| Sl. No.            | Product (S) Material of Test                                     | Specific Tests Performed                              | Test Method                          |
|                    | <b>Lamp, Luminaries &amp; Accessories</b>                        |                                                       |                                      |
| 16.                | Section 13 D.C. Supplied Electronic Control gear for LED Modules | Marking                                               | IS 15885 (Part 2, Sec13) Cl. 7:2012  |
| 17.                |                                                                  | Marking                                               | IEC 61347-2-13 Cl. 7: 2014           |
| 18.                |                                                                  | Protection Against Accidental Contact with Live Parts | IS 15885 (Part 2, Sec13) Cl. 8:2012  |
| 19.                |                                                                  | Protection Against Accidental Contact with Live Parts | IEC 61347-2-13 Cl. 8: 2014           |
| 20.                |                                                                  | Terminals                                             | IS 15885 (Part 2, Sec13) Cl. 9:2012  |
| 21.                |                                                                  | Terminals                                             | IEC 61347-2-13 Cl. 9: 2014           |
| 22.                |                                                                  | Provisions for Protective Earthing                    | IS 15885 (Part 2, Sec13) Cl. 10:2012 |
| 23.                |                                                                  | Provisions for Protective Earthing                    | IEC 61347-2-13 Cl. 10: 2014          |
| 24.                |                                                                  | Moisture Resistance and Insulation                    | IS 15885 (Part 2, Sec13) Cl. 11:2012 |
| 25.                |                                                                  | Moisture Resistance and Insulation                    | IEC 61347-2-13 Cl. 11: 2014          |
| 26.                |                                                                  | Electric Strength                                     | IS 15885 (Part 2, Sec13) Cl. 12:2012 |
| 27.                |                                                                  | Electric Strength                                     | IEC 61347-2-13 Cl. 12: 2014          |
| 28.                |                                                                  | Fault Conditions                                      | IS 15885 (Part 2, Sec13) Cl. 14:2012 |
| 29.                |                                                                  | Fault Conditions                                      | IEC 61347-2-13 Cl. 14: 2014          |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                          |                                                |                                       |
|--------------------|----------------------------------------------------------|------------------------------------------------|---------------------------------------|
| Sl. No.            | Product (S) Material of Test                             | Specific Tests Performed                       | Test Method                           |
|                    | <b>Lamp, Luminaries &amp; Accessories</b>                |                                                |                                       |
| 30.                |                                                          | Transformer Heating                            | IS 15885 (Part 2, Sec 13) Cl. 15:2012 |
| 31.                |                                                          | Transformer Heating                            | IEC 61347-2-13 Cl. 15: 2014           |
| 32.                |                                                          | Construction                                   | IS 15885 (Part 2, Sec 13) Cl. 16:2012 |
| 33.                |                                                          | Construction                                   | IEC 61347-2-13 Cl. 16: 2014           |
| 34.                |                                                          | Creepage Distances and Clearances              | IS 15885 (Part 2, Sec 13) Cl. 17:2012 |
| 35.                |                                                          | Creepage Distances and Clearances              | IEC 61347-2-13 Cl. 17: 2014           |
| 36.                |                                                          | Screws, Current- Carrying Parts and Connection | IS 15885 (Part 2, Sec13) Cl. 18:2012  |
| 37.                |                                                          | Screws, Current- Carrying Parts and Connection | IEC 61347-2-13 Cl. 18: 2014           |
| 38.                |                                                          | Resistance to Heat, Fire and Tracking          | IS 15885 (Part 2, Sec13) Cl. 19:2012  |
| 39.                |                                                          | Resistance to Heat, Fire and Tracking          | IEC 61347-2-13 Cl. 19: 2014           |
| 40.                |                                                          | Resistance to Corrosion                        | IS 15885 (Part 2, Sec 13) Cl. 20:2012 |
| 41.                |                                                          | Resistance to Corrosion                        | IEC 61347-2-13 Cl. 20: 2014           |
| 42.                | Luminaires: Part 5 Particular requirements Sec 1 General | General test requirements                      | IS 10322 (Part 5/Sec 1) Cl. 4: 2012   |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                           |                                   |                                      |
|--------------------|-------------------------------------------|-----------------------------------|--------------------------------------|
| Sl. No.            | Product (S) Material of Test              | Specific Tests Performed          | Test Method                          |
|                    | <b>Lamp, Luminaries &amp; Accessories</b> |                                   |                                      |
| 43.                | purpose luminaires                        | General test requirements         | IEC 60598-2-1 Cl. 1.3: 2020          |
| 44.                |                                           | Classification of Luminaries      | IS 10322 (Part 5/Sec 1) Cl. 5: 2012  |
| 45.                |                                           | Classification of Luminaries      | IEC 60598-2-1 Cl. 1.4: 2020          |
| 46.                |                                           | Marking                           | IS 10322 (Part 5/Sec 1) Cl. 6: 2012  |
| 47.                |                                           | Marking                           | IEC 60598-2-1 Cl. 1.5: 2020          |
| 48.                |                                           | Construction                      | IS 10322 (Part 5/Sec 1) Cl. 7: 2012  |
| 49.                |                                           | Construction                      | IEC 60598-2-1 Cl. 1.6: 2020          |
| 50.                |                                           | Creepage distance and clearance   | IS 10322 (Part 5/Sec 1) Cl. 8: 2012  |
| 51.                |                                           | Creepage distance and clearance   | IEC 60598-2-1 Cl. 1.7: 2020          |
| 52.                |                                           | Provision for earthing            | IS 10322 (Part 5/Sec 1) Cl. 9: 2012  |
| 53.                |                                           | Provision for earthing            | IEC 60598-2-1 Cl. 1.8: 2020          |
| 54.                |                                           | Terminals                         | IS 10322 (Part 5/Sec 1) Cl. 10: 2012 |
| 55.                |                                           | Terminals                         | IEC 60598-2-1 Cl. 1.9: 2020          |
| 56.                |                                           | External and internal wiring      | IS 10322 (Part 5/Sec 1) Cl. 11: 2012 |
| 57.                |                                           | External and internal wiring      | IEC 60598-2-1 Cl. 1.10: 2020         |
| 58.                |                                           | Protection against electric shock | IS 10322 (Part 5/Sec 1) Cl. 12: 2012 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSII DC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                               |                                             |                                      |
|--------------------|---------------------------------------------------------------|---------------------------------------------|--------------------------------------|
| Sl. No.            | Product (S) Material of Test                                  | Specific Tests Performed                    | Test Method                          |
|                    | <b>Lamp, Luminaries &amp; Accessories</b>                     |                                             |                                      |
| 59.                |                                                               | Protection against electric shock           | IEC 60598-2-1 Cl. 1.11: 2020         |
| 60.                |                                                               | Endurance test and thermal test             | IS 10322 (Part 5/Sec 1) Cl. 13: 2012 |
| 61.                |                                                               | Endurance test and thermal test             | IEC 60598-2-1 Cl. 1.12: 2020         |
| 62.                |                                                               | Resistance to dust and moisture             | IS 10322 (Part 5/Sec 1) Cl. 14: 2012 |
| 63.                |                                                               | Resistance to dust and moisture             | IEC 60598-2-1 Cl. 1.13: 2020         |
| 64.                |                                                               | Insulation Resistance and Electric Strength | IS 10322 (Part 5/Sec 1) Cl. 15: 2012 |
| 65.                |                                                               | Insulation Resistance and Electric Strength | IEC 60598-2-1 Cl. 1.14: 2020         |
| 66.                |                                                               | Resistance to Heat, Fire and Tracking       | IS 10322 (Part 5/Sec 1) Cl. 16: 20   |
| 67.                |                                                               | Resistance to Heat, Fire and Tracking       | IEC 60598-2-1 Cl. 1.15: 2020         |
| 68.                | Luminaires Part 5 Particular Requirements Section 6 Handlamps | General test requirements                   | IS 10322 (Part 5/Sec 6) Cl. 5: 2013  |
| 69.                |                                                               | General test requirements                   | IEC 60598-2-8 Cl. 8.4: 2013          |
| 70.                |                                                               | Classification of luminaries                | IS 10322 (Part 5/Sec 6) Cl. 5: 2013  |
| 71.                |                                                               | Classification of luminaries                | IEC 60598-2-8 Cl. 8.5: 2013          |
| 72.                |                                                               | Marking                                     | IS 10322 (Part 5/Sec 6) Cl. 6: 2013  |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                           |                                   |                                      |
|--------------------|-------------------------------------------|-----------------------------------|--------------------------------------|
| Sl. No.            | Product (S) Material of Test              | Specific Tests Performed          | Test Method                          |
|                    | <b>Lamp, Luminaries &amp; Accessories</b> |                                   |                                      |
| 73.                |                                           | Marking                           | IEC 60598-2-8 Cl. 8.6: 2013          |
| 74.                |                                           | Construction                      | IS 10322 (Part 5/Sec 6) Cl. 7: 2013  |
| 75.                |                                           | Construction                      | IEC 60598-2-8 Cl. 8.7: 2013          |
| 76.                |                                           | Creepage distance and clearance   | IS 10322 (Part 5/Sec 6) Cl. 8: 2013  |
| 77.                |                                           | Creepage distance and clearance   | IEC 60598-2-8 Cl. 8.8: 2013          |
| 78.                |                                           | Provision for earthing            | IS 10322 (Part 5/Sec 6) Cl. 9: 2013  |
| 79.                |                                           | Provision for earthing            | IEC 60598-2-8 Cl. 8.9: 2013          |
| 80.                |                                           | Terminals                         | IS 10322 (Part 5/Sec 6) Cl. 10: 2013 |
| 81.                |                                           | Terminals                         | IEC 60598-2-8 Cl. 8.10: 2013         |
| 82.                |                                           | External and internal wiring      | IS 10322 (Part 5/Sec 6) Cl. 11: 2013 |
| 83.                |                                           | External and internal wiring      | IEC 60598-2-8 Cl. 8.11: 2013         |
| 84.                |                                           | Protection against electric shock | IS 10322 (Part 5/Sec 6) Cl. 12: 2013 |
| 85.                |                                           | Protection against electric shock | IEC 60598-2-8 Cl. 8.12: 2013         |
| 86.                |                                           | Endurance test and thermal test   | IS 10322 (Part 5/Sec 6) Cl. 13: 2013 |
| 87.                |                                           | Endurance test and thermal test   | IEC 60598-2-8 Cl. 8.13: 2013         |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                     |                                             |                                                                          |
|--------------------|---------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                        | Specific Tests Performed                    | Test Method                                                              |
|                    | <b>Lamp, Luminaries &amp; Accessories</b>                           |                                             |                                                                          |
| 88.                |                                                                     | Resistance to dust and moisture             | IS 10322 (Part 5/Sec 6) Cl. 14: 2013                                     |
| 89.                |                                                                     | Resistance to dust and moisture             | IEC 60598-2-8 Cl. 8.14: 2013                                             |
| 90.                |                                                                     | Insulation resistance and electric strength | IS 10322 (Part 5/Sec 6) Cl. 15: 2013                                     |
| 91.                |                                                                     | Insulation resistance and electric strength | IEC 60598-2-8 Cl. 8.15: 2013                                             |
| 92.                |                                                                     | Resistance to heat, fire and tracking       | IS 10322 (Part 5/Sec 6) Cl. 16: 2013                                     |
| 93.                |                                                                     | Resistance to heat, fire and tracking       | IEC 60598-2-8 Cl. 8.16: 2013                                             |
| 94.                | Luminaries Part 5 Particular Requirements Section 7 Lighting Chains | General test requirements                   | IS 10322 (Part 5/Sec 7) Cl. 20.4: 2017/<br>IEC 60598-2-20 Cl. 20.4: 2022 |
| 95.                |                                                                     | Classification of Luminaries                | IS 10322 (Part 5/Sec 7) Cl. 20.5: 2017/ IEC 60598-2-20 Cl. 20.5: 2022    |
| 96.                |                                                                     | Marking                                     | IS 10322 (Part 5/Sec 7) Cl. 20.6: 2017/ IEC 60598-2-20 Cl. 20.6: 2022    |
| 97.                |                                                                     | Construction                                | IS 10322 (Part 5/Sec 7) Cl. 20.7: 2017/IEC 60598-2-20 Cl. 20.7: 2022     |





# Quality And Accreditation Institute

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                           |                                                |                                                                          |
|--------------------|-------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test              | Specific Tests Performed                       | Test Method                                                              |
|                    | <b>Lamp, Luminaries &amp; Accessories</b> |                                                |                                                                          |
| 98.                |                                           | Creepage Distance and Clearance                | IS 10322 (Part 5/Sec 7) Cl. 20.8: 2017/ IEC 60598-2-20 Cl. 20.8: 2022    |
| 99.                |                                           | Terminals                                      | IS 10322 (Part5/Sec 7) Cl. 20.10, 2017/ IEC 60598-2-20 Cl. 20.10: 2022   |
| 100.               |                                           | External And Internal Wiring                   | IS 10322 (Part 5/Sec 7) Cl. 20.11: 2017/ IEC 60598-2-20 Cl. 20.11: 2012  |
| 101.               |                                           | Protection Against Electric Shock              | IS 10322 (Part 5/Sec 7) Cl. 20.12: 2017/ IEC 60598-2-20 Cl. 20.12: 2022  |
| 102.               |                                           | Endurance test and thermal test                | IS 10322 (Part 5/Sec 7) Cl. 20.13: 2017/ IEC 60598-2-20 Cl. 20.13: 2022  |
| 103.               |                                           | Resistance to dust, solid objects and moisture | IS 10322 (Part 5/Sec 7) Cl. 20.14: 2017 / IEC 60598-2-20 Cl. 20.14: 2022 |
| 104.               |                                           | Insulation resistance and electric strength    | IS 10322 (Part 5/Sec 7) Cl. 20.15: 2017/IEC 60598-2-20 Cl. 20.15: 2022   |
| 105.               |                                           | Resistance to heat, fire and tracking          | IS 10322 (Part 5/Sec 7) Cl. 20.16: 2017/ IEC 60598-2-20 Cl. 20.16: 2012  |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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N-47, Sector-5, Bawana Industrial Area, DSII DC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                 |                                                                                  |                                                                        |
|--------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                    | Specific Tests Performed                                                         | Test Method                                                            |
|                    | <b>Lamp, Luminaries &amp; Accessories</b>                       |                                                                                  |                                                                        |
| 106.               |                                                                 | Annex A (Requirements for interconnecting connectors for use in lighting chains) | IS 10322 (Part 5/Sec 7) Annex A.16: 2017/ IEC 60598-2-20 Annex A: 2022 |
| 107.               | Luminaries Part 5 Particular Requirements Section 9 Rope Lights | General test requirements                                                        | IS 10322 (Part5/Sec 9) Cl. 21.4: 2017/IEC 60598-2-21 Cl. 21.4: 2014    |
| 108.               |                                                                 | Classification of luminaries                                                     | IS 10322 (Part5/Sec 9) Cl. 21.5: 2017/ IEC 60598-2-21 Cl. 21.5: 2014   |
| 109.               |                                                                 | Marking                                                                          | IS 10322 (Part5/Sec 9) Cl. 21.6: 2017/ IEC 60598-2-21 Cl. 21.6: 2014   |
| 110.               |                                                                 | Construction                                                                     | IS 10322 (Part5/Sec 9) Cl. 21.7: 2017/ IEC 60598-2-21 Cl. 21.7: 2014   |
| 111.               |                                                                 | Creepage distance and clearance                                                  | IS 10322 (Part5/Sec 9) Cl. 21.8: 2017/ IEC 60598-2-21 Cl. 21.8: 2014   |
| 112.               |                                                                 | Terminals                                                                        | IS 10322 (Part5/Sec 9) Cl. 21.10: 2017/ IEC 60598-2-21 Cl. 21.10: 2014 |
| 113.               |                                                                 | External and internal wiring                                                     | IS 10322 (Part5/Sec 9) Cl. 21.11: 2017/ IEC 60598-2-21 Cl. 21.11: 2014 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                           |                                                              |                                                                        |
|--------------------|-------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test              | Specific Tests Performed                                     | Test Method                                                            |
|                    | <b>Lamp, Luminaries &amp; Accessories</b> |                                                              |                                                                        |
| 114.               |                                           | Protection against electric shock                            | IS 10322 (Part5/Sec 9) Cl. 21.12: 2017/ IEC 60598-2-21 Cl. 21.12: 2014 |
| 115.               |                                           | Endurance test and thermal test                              | IS 10322 (Part5/Sec 9) Cl. 21.13: 2017/ IEC 60598-2-21 Cl. 21.13: 2014 |
| 116.               |                                           | Resistance to dust, solid objects and moisture               | IS 10322 (Part5/Sec 9) Cl. 21.14: 2017/ IEC 60598-2-21 Cl. 21.14: 2014 |
| 117.               |                                           | Insulation resistance and electric strength                  | IS 10322 (Part5/Sec 9) Cl. 21.15: 2017/ IEC 60598-2-21 Cl. 21.15: 2014 |
| 118.               |                                           | Resistance to Heat, Fire and Tracking                        | IS 10322 (Part5/Sec 9) Cl. 21.16: 2017/ IEC 60598-2-21 Cl. 21.16: 2014 |
| 119.               |                                           | Test for Interconnecting connector for use in lighting chain | IS 10322 (Part5/Sec 9) Annex A. / IEC 60598-2-21 Annex A: 2014         |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                        |                                           |                                |
|--------------------|----------------------------------------|-------------------------------------------|--------------------------------|
| Sl. No.            | Product (S) Material of Test           | Specific Tests Performed                  | Test Method                    |
|                    | <b>Environmental Test Facility</b>     |                                           |                                |
| 1.                 | Electrical, electronic and other items | Bump Test                                 | JSS 55555: 2020, Test no. 5    |
| 2.                 |                                        | Corrosion (Salt / Salt fog)               | JSS 55555 2020 Test no.7 8 & 9 |
| 3.                 |                                        | Damp Heat                                 | JSS 55555: 2020, Test no. 10   |
| 4.                 |                                        | Driving Rain                              | JSS 55555: 2020 Test no. 12    |
| 5.                 |                                        | Drop Test                                 | JSS 55555: 2020 Test no. 13    |
| 6.                 |                                        | Dust Test                                 | JSS 55555: 2020 Test no. 14    |
| 7.                 |                                        | Fine Mist                                 | JSS 55555 :2020 Test no. 16    |
| 8.                 |                                        | High temperature                          | JSS 55555 :2020 Test no. 17    |
| 9.                 |                                        | Immersion test                            | JSS 55555: 2020 Test no.19     |
| 10.                |                                        | Low temperature                           | JSS 55555 2020, Test no. 20    |
| 11.                |                                        | Mould Growth                              | JSS 55555 2020, Test no. 21    |
| 12.                |                                        | Rapid Temperature cycling (thermal shock) | JSS 55555 2020, Test No. 22    |
| 13.                |                                        | Sealing test                              | JSS 55555: 2020 Test no. 23    |
| 14.                |                                        | Shock test or impact                      | JSS 55555 2020 Test no. 24     |
| 15.                |                                        | Toppling test                             | JSS 55555: 2020 Test no. 26    |
| 16.                |                                        | Tropical exposure                         | JSS 55555: 2020 Test no. 27    |
| 17.                |                                        | Vibration test                            | JSS 55555 2020 Test no. 28     |
| 18.                |                                        | Corrosive atmosphere (salt mist)          | JSS 50101: 1996 Test no.4      |

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www.qai.org.in



72 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                        |                             |
|--------------------|------------------------------|----------------------------------------|-----------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed               | Test Method                 |
|                    | Environmental Test Facility  |                                        |                             |
| 19.                |                              | Damp heat test (cyclic)                | JSS 50101: 1996 Test no.5   |
| 20.                |                              | Damp heat (moisture resistance)        | JSS 50101: 1996 Test no.6   |
| 21.                |                              | Damp heat (steady state)               | JSS 50101: 1996 Test no.7   |
| 22.                |                              | Dust Test                              | JSS 50101: 1996 Test No.8   |
| 23.                |                              | Flammability                           | JSS 50101: 1996 Test no.10  |
| 24.                |                              | Impact (Bump)                          | JSS 50101: 1996 Test no.11  |
| 25.                |                              | Impact (Shock)                         | JSS 50101: 1996 Test no.12  |
| 26.                |                              | Sealing (static and operational seals) | JSS 50101: 1996 Test no.18  |
| 27.                |                              | Temperature cycling                    | JSS 50101: 1996 Test no.20  |
| 28.                |                              | Temperature (cold)                     | JSS 50101: 1996 Test no.21  |
| 29.                |                              | Temperature (dry heat)                 | JSS 50101: 1996 Test no.22  |
| 30.                |                              | Vibration test                         | JSS 50101: 1996 Test no. 23 |
| 31.                |                              | Vibration test (random)                | JSS 50101: 1996 Test no. 24 |
| 32.                |                              | Low temperature (cold cycle)           | TECQM 333:2010, Test no.1   |
| 33.                |                              | High temperature (dry heat cycle)      | TEC QM 333:2010, Test no.2  |
| 34.                |                              | Tropical exposure (damp heat cyclic)   | TEC QM 333:2010, Test no.3  |
| 35.                |                              | Rapid temperature cycle                | TEC QM 333:2010, Test no.4  |
| 36.                |                              | Damp heat (steady state)               | TEC QM 3332010, Test no.5   |



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## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                  |                              |
|--------------------|------------------------------|--------------------------------------------------|------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                         | Test Method                  |
|                    | Environmental Test Facility  |                                                  |                              |
| 37.                |                              | Vibration test                                   | TEC QM 333:2010, Test no. 6  |
| 38.                |                              | Sealing test (gas tightness)/ high altitude test | TEC QM 333:2010, Test no. 7  |
| 39.                |                              | Water immersion Test                             | TEC QM 333:2010, Test no.8   |
| 40.                |                              | Corrosion – salt                                 | TEC QM 333:2010, Test no.9   |
| 41.                |                              | Drop Test                                        | TEC QM 3332010, Test no. 10  |
| 42.                |                              | Topple test                                      | QM 333 TEC: 2010 Test no. 11 |
| 43.                |                              | Fall Test                                        | QM 333 TEC: 2010 Test no.12  |
| 44.                |                              | Bump / roadability                               | QM 333 Test no.13: 2010      |
| 45.                |                              | Rain test                                        | QM 333: 2010 Test no.14      |
| 46.                |                              | Dust test                                        | QM 333 TEC: 2010 Test no. 15 |
| 47.                |                              | Cold test                                        | IEC 60068-2-1: 2007          |
| 48.                |                              | Dry heat test                                    | IEC 60068-2-2: 2007          |
| 49.                |                              | Damp heat test (cyclic)                          | IEC 60068-2-30: 2005         |
| 50.                |                              | Rough handling shock (Drop Test)                 | IEC 60068-2-31: 2008         |
| 51.                |                              | Composite temperature/humidity cyclic test       | IEC 60068-2-38: 2021         |
| 52.                |                              | Flowing mixed gas corrosion test                 | IEC 60068-2-60: 2015         |
| 53.                |                              | Hammer tests (IK- 01-1K-10)                      | IEC 60068-2-75: 2014         |
| 54.                |                              | Damp heat test (steady state)                    | IEC 60068-2-78: 2012         |

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74 of 135



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                |                                   |
|--------------------|------------------------------|--------------------------------|-----------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed       | Test Method                       |
|                    | Environmental Test Facility  |                                |                                   |
| 55.                |                              | Shock Test                     | IEC 60068-2-27: 2008              |
| 56.                |                              | Vibration (Sinusoidal)         | IEC 60068-2-6: 2007               |
| 57.                |                              | Vibration test (Random)        | IEC 60068-2-64: 2008              |
| 58.                |                              | Salt mist                      | IEC 60068-2-11: 2021              |
| 59.                |                              | Salt spray test                | IEC 60068-2-52: 2017              |
| 60.                |                              | Change of Temperature          | IEC 60068-2-14: 2023              |
| 61.                |                              | Sealing test                   | IEC 60068-2-17: 2023              |
| 62.                |                              | Dry heat test                  | IS 9000 (Part 3/Sec 1 to 5): 1977 |
| 63.                |                              | Damp heat test (steady state)  | IS 9000 (Part 4): 2020            |
| 64.                |                              | Damp Heat Test (Cyclic)        | IS 9000 (Part 5/Sec 1 & 2): 1981  |
| 65.                |                              | Dust test                      | IS 9000 (Part12): 1981            |
| 66.                |                              | Salt mist test                 | IS 9000 (Part11): 1983            |
| 67.                |                              | Impact test (shock test)       | IS 9000 (Part-7: Sec 1): 2018     |
| 68.                |                              | Drip proof test                | IS 9000 (Part-23): 1984           |
| 69.                |                              | Driving rain test              | IS 9000 (Part-16): 1983           |
| 70.                |                              | Cold Start Test                | IEC 60571 Cl. 12.2.4:2012         |
| 71.                |                              | Damp Heat Test, cyclic         | IEC 60571 Cl. 12.2.6:2012         |
| 72.                |                              | Dry Heat Test                  | IEC 60571 Cl. 12.2.5:2012         |
| 73.                |                              | Vibration, shock and bump test | IEC 60571: 2012 Cl. 12.2.12       |

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75 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                                                                                    |                                                    |
|--------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                                                                           | Test Method                                        |
|                    | Environmental Test Facility  |                                                                                                                    |                                                    |
| 74.                |                              | Water tightness test                                                                                               | IEC 60571: 2012 Cl. 12.2.13                        |
| 75.                |                              | Low temperature storage test                                                                                       | IEC 60571: 2012 Cl. 12.2.15                        |
| 76.                |                              | Salt Mist test                                                                                                     | IEC 60571 Cl. No. 12.2.11                          |
| 77.                |                              | Degrees of protection against access to hazardous parts indicated by the additional letter (A,B,C,D)               | IS/IEC 60529: 2001 Cl.7.0, Cl.15.0 & Table 4       |
| 78.                |                              | Degrees of protection against access to hazardous parts indicated by the first characteristics numeral             | IS/IEC 60529: 2001 Cl.12, Table 6                  |
| 79.                |                              | Degrees of protection against ingress of water indicated by the second characteristic numeral (IPX1 to IPX8)       | IS/IEC 60529: 2001 Cl.6.0 Table 3 & Cl. 14 Table 8 |
| 80.                |                              | Degrees of protection against solid foreign objects indicated by the first characteristics numeral (IP1X1 to IP6X) | IS/IEC 60529: 2001 Cl. 13, Table 7                 |
| 81.                |                              | Glow wire test                                                                                                     | IS 11000 (Part 2/Sec 1): 2018                      |
| 82.                |                              | Glow wire test                                                                                                     | IEC 60695-2-10: 2021                               |
| 83.                |                              | Needle flame test                                                                                                  | IEC 60695-11-5: 2016                               |



# Quality And Accreditation Institute

## Centre for International Accreditation

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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                                                                                                                                |                                         |
|--------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                                                                                                                       | Test Method                             |
|                    | Environmental Test Facility  |                                                                                                                                                                |                                         |
| 84.                |                              | Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code) Designations - Impact test (IK01 to IK 10) | IEC 62262: 2002<br>Cl. 4.1 & 4.2, Cl. 6 |
| 85.                |                              | Low Pressure (Altitude)                                                                                                                                        | MIL-STD-810G: 2008 Method 500.5         |
| 86.                |                              | Low Pressure (Altitude)                                                                                                                                        | MIL-STD-810H: 2019 Method 500.6         |
| 87.                |                              | High Temperature                                                                                                                                               | MIL-STD-810G: 2008 Method 501.5         |
| 88.                |                              | High Temperature                                                                                                                                               | MIL-STD-810H: 2019 Method 501.7         |
| 89.                |                              | Low Temperature                                                                                                                                                | MIL-STD-810G: 2008 Method 502.5         |
| 90.                |                              | Low Temperature                                                                                                                                                | MIL-STD-810H: 2019 Method 502.7         |
| 91.                |                              | Temperature Shock                                                                                                                                              | MIL-STD-810G: 2008 Method 503.5         |
| 92.                |                              | Temperature Shock                                                                                                                                              | MIL-STD-810H: 2019 Method 503.7         |
| 93.                |                              | Rain test                                                                                                                                                      | MIL-STD-810G: 2008 Method 506.5         |
| 94.                |                              | Rain test                                                                                                                                                      | MIL-STD-810G: 2008 Method 506.5         |
| 95.                |                              | Humidity Test                                                                                                                                                  | MIL-STD-810G: 2008 Method 507.5         |

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www.qai.org.in



77 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                   |                                 |
|--------------------|------------------------------|-----------------------------------|---------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed          | Test Method                     |
|                    | Environmental Test Facility  |                                   |                                 |
| 96.                |                              | Humidity Test                     | MIL-STD-810H: 2019 Method 507.6 |
| 97.                |                              | Salt Fog                          | MIL-STD-810H: 2019 Method 509.7 |
| 98.                |                              | Salt Fog                          | MIL-STD-810G: 2008 Method 510.5 |
| 99.                |                              | Sand and Dust                     | MIL-STD-810G: 2008 Method 510.5 |
| 100.               |                              | Sand and Dust                     | MIL-STD-810H: 2019 Method 510.7 |
| 101.               |                              | Vibration Test                    | MIL-STD-810G: 2008 Method 514.6 |
| 102.               |                              | Vibration Test                    | MIL-STD-810H: 2019 Method 514.8 |
| 103.               |                              | Shock Test                        | MIL-STD-810G: 2008 Method 516.6 |
| 104.               |                              | Shock Test                        | MIL-STD-810H: 2019 Method 516.8 |
| 105.               |                              | Surge Immunity Test               | IEC 61000-4-5: 2014             |
| 106.               |                              | Salt Spray Test                   | ISO 16750-4 Cl. 5.5: 2023       |
| 107.               |                              | Change in Temperature             | ISO 16750-4:2023                |
| 108.               |                              | Drop Test                         | ISO 16750-4 :2023               |
| 109.               |                              | Dry Heat                          | ISO 16750-4 :2023               |
| 110.               |                              | Damp Heat Test, Steady state test | ISO 16750-4 :2023               |

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78 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                  |                                                                       |
|--------------------|------------------------------|--------------------------------------------------|-----------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                         | Test Method                                                           |
|                    | Environmental Test Facility  |                                                  |                                                                       |
| 111.               |                              | Temperature Cycling Test                         | ISO 16750-4:2023                                                      |
| 112.               |                              | Shock & Vibration Test                           | IEC 61373: 2023                                                       |
| 113.               |                              | Tensile elongation & flexural test               | ASTM D638 & ASTM D 790: 2017                                          |
| 114.               |                              | Tensile elongation yield test                    | IS 1608-1: 2022                                                       |
| 115.               |                              | Test for Second characteristic numeral 1 to 8    | IS/IEC 60034 (Part 5): 2020                                           |
| 116.               |                              | Burn in test on PCB Controller card for 45 Hours | RDSO specification ELRS/SPEC/S1/0015                                  |
| 117.               |                              | HV Test                                          | Clause 8 (v) RDSO specification : RDSO/PE/SPEC/TL/0091-2016 (REV-1)   |
| 118.               |                              | Insulation Resistance Test                       | Clause 8 (iv) RDSO specification : RDSO/PE/SPEC/TL/0091-2016 (REV-1)  |
| 119.               |                              | Resistance to Humidity Test                      | Clause 8 (iii) RDSO specification : RDSO/PE/SPEC/TL/0091-2016 (REV-1) |
| 120.               |                              | Temperature Rise test                            | Clause No. 8 (xi) RDSO/PE/SPEC/TL/0091-2016 (REV-1)                   |
| 121.               |                              | Visual and dimensional check                     | Clause No. 8 (i) RDSO/PE/SPEC/TL/0091-2016 (REV-1)                    |
| 122.               |                              | Over voltage protection                          | Clause No. 8 (vi) RDSO/PE/SPEC/TL/0091-2016(REV-1)                    |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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N-47, Sector-5, Bawana Industrial Area, DSII DC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                |                                                       |
|--------------------|------------------------------|--------------------------------|-------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed       | Test Method                                           |
|                    | Environmental Test Facility  |                                |                                                       |
| 123.               |                              | Wattage measurement            | Clause No. 8 (vii) RDSO/PE/SPEC/TL/0091-2016 (REV-1)  |
| 124.               |                              | Short circuit protection       | Clause No. 8 (viii) RDSO/PE/SPEC/TL/0091-2016 (REV-1) |
| 125.               |                              | Surge protection               | Clause No. 8 (ix) RDSO/PE/SPEC/TL/0091-2016 (REV-1)   |
| 126.               |                              | Reverse polarity               | Clause No. 8 (x) RDSO/PE/SPEC/TL/0091-2016 (REV-1)    |
| 127.               |                              | Fire retardant test            | Clause No. 8 (xiv) RDSO/PE/SPEC/TL/0091-2016 (REV-1)  |
| 128.               |                              | Test for IP65 protection       | Clause No. 8 (xv) RDSO/PE/SPEC/TL/0091-2016 (REV-1)   |
| 129.               |                              | Vibration and shock            | Clause No. 8 (xvi) RDSO/PE/SPEC/TL/0091-2016 (REV-1)  |
| 130.               |                              | Environmental tests            | Clause No. 8 (xvii) RDSO/PE/SPEC/TL/0091-2016 (REV-1) |
| 131.               |                              | Life test                      | Clause No. 8 (xviii) DSO/PE/SPEC/TL/0091-2016 (REV-1) |
| 132.               |                              | Endurance test                 | Clause No. 8 (xx) RDSO/PE/SPEC/TL/0091-2016 (REV-1)   |
| 133.               |                              | Safety test                    | Clause No. 8 (xxi) RDSO/PE/SPEC/TL/0091-2016 (REV-1)  |
| 134.               |                              | Low temperature start -up test | Cl.13.4.4 EN 50155:2017                               |
| 135.               |                              | Dry heat test                  | Cl.13.4.5 EN 50155:2017                               |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                         |                          |
|--------------------|------------------------------|-----------------------------------------|--------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                | Test Method              |
|                    | Environmental Test Facility  |                                         |                          |
| 136.               |                              | Low temperature storage test            | Cl. 13.4.6EN 50155:2017  |
| 137.               |                              | Cyclic damp heat test                   | Cl. 13.4.7EN 50155:2017  |
| 138.               |                              | Insulation test                         | Cl.13.4.9EN 50155:2017   |
| 139.               |                              | Salt mist test                          | Cl.13.4.10EN 50155:2017  |
| 140.               |                              | Vibration and shock test                | Cl. 13.4.11EN 50155:2017 |
| 141.               |                              | Enclosure protection test (IP code)     | Cl.13.4.12EN 50155:2017  |
| 142.               |                              | Fire Hazard Testing (Flammability test) | UL 94: 2023              |
| 143.               |                              | Fire Hazard testing                     | IEC 60695-11-10:2013     |



# Quality And Accreditation Institute

## Centre for International Accreditation

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                         |                                                                                                                                                                                                                                              |
|--------------------|------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                | Test Method                                                                                                                                                                                                                                  |
|                    | <b>Cable and Accessories</b> |                                                         |                                                                                                                                                                                                                                              |
| 1.                 | PVC Insulated Cables         | Annealing test for Copper Conductor                     | Table-1, i). a).1), Cl. 4.1 of IS 694, Cl. 7.1.2.1, 7.2.3 of IS 8130, IS 10810 (Pt. 1):1984                                                                                                                                                  |
| 2.                 |                              | Tensile strength for aluminium conductor                | Table-1, i). a).2), Cl. 4.1 of IS 694, Cl. 4.1, 7.2.1 a, b of IS 8130, IS 10810 (Pt. 2): 1984                                                                                                                                                |
| 3.                 |                              | Wrapping test for Aluminium Conductor                   | Table-1, i). a).3), Cl. 4.1 of IS 694, Cl. 7.2.2 of IS 8130, IS 10810 (Pt. 3): 1989                                                                                                                                                          |
| 4.                 |                              | Conductor resistance                                    | Table-1, i). a).4), Cl. 4.2 of IS 694, Cl. 7.3 of IS 8130, IS 10810 (Pt. 5): 1984                                                                                                                                                            |
| 5.                 |                              | Per sulphate test (for tinned Copper Conductor)         | Table-1, i). a).5), Cl. 10.11 of IS 694, Cl. 7.1.1 of IS 8130, IS 10810 (Pt-4): 1984                                                                                                                                                         |
| 6.                 |                              | Over all dimensions and Thickness of Insulation/ Sheath | Table-1, i). b) (Cl.5.3, 8.3, 9, 16.1.2, 16.1.3, 17.1.2, 17.1.3, 18.1.2, 18.1.4, 18.1.5, 18.1.6, 19.1.3, 19.1.5, 19.1.6, 19.1.7, 20.1.2, 20.1.4, 20.1.5, 21.1.2, 22.1.2, 22.1.4, table-3, 4, 5, 6, 7, 9, 10 of IS 694, IS 10810 (Pt. 6):1984 |
| 7.                 |                              | Tensile strength of insulation & sheath                 | Table-1, i).c). d).1) Cl. 5.4, 8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt. 7): 1984                                                                                                                                                     |



# Quality And Accreditation Institute

## Centre for International Accreditation

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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                            |                                                                                              |
|--------------------|------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                   | Test Method                                                                                  |
|                    | Cable and Accessories        |                                            |                                                                                              |
| 8.                 |                              | Elongation at break of insulation & sheath | Table-1, i).c). d).1) Cl. 5.4,8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt. 7): 1984      |
| 9.                 |                              | Loss of mass test                          | Table-1, i).c). d).2) Cl. 5.4,8.4 of IS 694, Table-1,2 of IS 5831, IS 10810 (Pt-10): 1984    |
| 10.                |                              | Ageing in air oven- Elongation             | Table-1, i).c). d).3), Cl. 5.4,8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt-11): 1984     |
| 11.                |                              | Shrinkage test                             | Table-1, i).c). d).4), Cl. 5.4,8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt-12): 1984     |
| 12.                |                              | Heat shock test                            | Table-1, i). d).5),6) Cl. 8.4 of IS 694, Table 1 of IS 5831, IS 10810 (Pt. 14): 1984         |
| 13.                |                              | Hot deformation test                       | Table-1, i).c). d).6), Cl. 5.4,8.4 of IS 694, Table-1,2 of IS 5831, IS 10810 (Pt-15): 1984   |
| 14.                |                              | Thermal Stability                          | Table-1, i).c). d).7), Cl. 5.4,8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt-60): 1984     |
| 15.                |                              | Cold Bend Test                             | Table-1, i).c). d).8),12), Cl. 5.4,8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt-20): 1984 |

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83 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                 |                                                                                              |
|--------------------|------------------------------|---------------------------------|----------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed        | Test Method                                                                                  |
|                    | Cable and Accessories        |                                 |                                                                                              |
| 16.                |                              | Cold impact test                | Table-1, i).c). d),13),9), Cl. 5.4,8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt-21): 1984 |
| 17.                |                              | Flammability test               | Table-1, i).c).10), Cl. 10.4, of IS 694, IS 10810 (Pt. 53): 1984                             |
| 18.                |                              | Oxygen Index Test               | Table-1, i).c). d),8),11), Cl. 10.5, of IS 694, IS 10810 (Pt. 58): 1984                      |
| 19.                |                              | Oxygen Index Test               | Table-1, i).c). d), 8), 11), Cl. 10.5, of IS 694, ASTM D 2863-09: 1995                       |
| 20.                |                              | Temperature Index Test          | Table-1, i).c). d),9),12) Cl. 10.7, of IS 694, IS 10810 (Pt. -64): 1984                      |
| 21.                |                              | Halogen Acid Gas                | Table-1, i).c). d).10), 13), Cl. 10.6 of IS 694, IS 10810(Pt-59): 1984                       |
| 22.                |                              | Halogen Acid Gas                | Table-1, i).c). d).10), 13), Cl. 10.6 of IS 694, IEC 60754-1: 1994                           |
| 23.                |                              | Smoke Density                   | Table-1, i).c). d).11),14), Cl.10.8 of IS 694, IS 13360 (Part 6/sec 9):2001                  |
| 24.                |                              | Smoke Density                   | Table-1, i).c). d).11), 14), Cl. 10.8 of IS 694, ASTM D 2843: 1999                           |
| 25.                |                              | High voltage Test (AC)          | Table-1, i). e).1),3) (Cl. 10.2, of IS 694, IS 10810 (Pt. 45): 1984                          |
| 26.                |                              | High voltage Test (DC)          | Table-1, i). e).1) 3), Cl. 10.1, of IS 694, IS 10810 (Pt. 45):1984                           |
| 27.                |                              | High voltage Test or Spark Test | Table-1, i). e).1) 3), Cl. 10.3, of IS                                                       |

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84 of 135

# Quality And Accreditation Institute

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Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                                              |                                            |                                                                                           |
|--------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                                                 | Specific Tests Performed                   | Test Method                                                                               |
|                    | Cable and Accessories                                                                                        |                                            |                                                                                           |
|                    |                                                                                                              |                                            | 694, IS 10810 (Pt. 45):1984                                                               |
| 28.                |                                                                                                              | Insulation resistance                      | Table-1, i). e).2), Cl.5.4, 8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt. 43): 1984    |
| 29.                |                                                                                                              | Volume Resistivity                         | Table-1, i). e).2), Cl.5.4, 8.4 of IS 694, Table-1 of IS 5831, IS 10810 (Pt. 43): 1984    |
| 30.                |                                                                                                              | Additional ageing test (for OU cable only) | Cl.10.9 of IS 694: 2010                                                                   |
| 31.                | Cross Linked Polyethylene Insulated, PVC sheathed cables for working voltages up to and Including 1100 volts | Annealing test for Copper Conductor        | Cl. 15.1((a)-i) of IS 7098(Pt-1), Cl. 7.1.2.1, 7.2.3 of IS 8130, IS 10810 (Pt 1): 1984    |
| 32.                |                                                                                                              | Tensile strength for Aluminium Conductor   | Cl. 15.1((a)-i) of IS 7098(Pt-1), Cl. 7.2.1. of IS 8130, IS 10810 (Pt 2): 1984            |
| 33.                |                                                                                                              | Wrapping test for Aluminium Conductor      | Cl. 15.1((a)-i) of IS 7098 (Pt-1), Cl.7.2.2 of IS 8130, IS 10810 (Pt 3): 1984             |
| 34.                |                                                                                                              | Conductor resistance                       | Cl. 15.1(a)-iv) of IS 7098 (Pt-1), Cl. 7.3 (Table-1,2) of IS 8130, IS 10810 (Pt. 5): 1984 |
| 35.                |                                                                                                              | Armour Resistance Test                     | Cl. 15.1(b) Cl. 13.6 (g) of IS 7098 (Pt-1), Cl. 8.4 of IS 3975, IS 10810 (Pt 42): 1984    |



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| Electrical Testing |                              |                                                         |                                                                                                  |
|--------------------|------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                | Test Method                                                                                      |
|                    | Cable and Accessories        |                                                         |                                                                                                  |
| 36.                |                              | Dimension for armouring material                        | Cl.15.1(b) Cl.13.6(a), (b) of IS 7098(Pt- 1), Cl.7 of IS 3975, IS 10810 (Pt 36): 1984            |
| 37.                |                              | Elongation at break of armouring material               | Cl. 15.1(b) Cl. 13.6(a), (b) of IS 7098(Pt-1), IS 10810 (Pt 37): 1984                            |
| 38.                |                              | Resistivity & Conductance test of Armour (Wires/strips) | Cl. 15.1(b) Cl. 13.6 (g) of IS 7098(Pt- 1), Cl. 8.4 of IS 3975, IS 10810 (Pt 42):1984            |
| 39.                |                              | Tensile strength of armouring material                  | Cl. 15.1(b) Cl.13.6(a), (b) of IS 7098(Pt- 1), IS 10810 (Pt 37): 1984                            |
| 40.                |                              | Torsion test on Galvanized steel wire for armouring     | Cl. 15.1(b) Cl. 13.6(c) of IS 7098(Pt- 1), Cl. 8.2 of Table 6 of IS 3975, IS 10810 (Pt 38): 1984 |
| 41.                |                              | Winding test on Galvanized steel strips for armouring   | Cl. 15.1(b) Cl. 13.6 (d) of IS 7098(Pt- 1), IS 10810(Pt 39): 1984                                |
| 42.                |                              | Uniformity of Zinc coating                              | Cl. 15.1(b) Cl. 13.6 (e) of IS 7098(Pt- 1), Cl. 9.2 of IS 3975, IS 10810 (Pt 40): 1984           |
| 43.                |                              | Mass of Zinc coating                                    | Cl. 15.1(b) Cl.13.6 (f) of IS 7098(Pt- 1), Cl. 9.1 of IS 3975, IS 10810 (Pt 41): 1984            |
| 44.                |                              | Thickness of Insulation & Sheath                        | Cl. 15.1(C) Cl. 9.2, 12.3, 14.3.1 (Table- 3,5,8) of IS 7098 (Pt- 1), IS 10810 (Pt 6): 1984       |

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86 of 135



# Quality And Accreditation Institute

## Centre for International Accreditation

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| Electrical Testing |                              |                                         |                                                                                            |
|--------------------|------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                | Test Method                                                                                |
|                    | Cable and Accessories        |                                         |                                                                                            |
| 45.                |                              | Tensile strength of insulation & Sheath | Cl. 15.1(d), (e)-i of IS 7098 (Pt-1), Cl. 4.1 (table-1,2) of IS 5831, IS 10810 (Pt 7):1984 |
| 46.                |                              | Elongation at break of insulation       | Cl. 15.1(d), (e)-i Cl. 4.1 (table-1,2) of IS 7098(Pt-1), IS 10810 (Pt 7): 1984             |
| 47.                |                              | Ageing in air oven- Elongation          | Cl. 15.1(d), (e) - i Cl.4.1, (table-1,2), IS 7098(Pt-1), IS 10810 (Pt 11): 1984            |
| 48.                |                              | Ageing in air oven- Tensile Strength    | Cl. 15.1(d), (e) - i Cl. 4.1, (table-1,2), IS 7098(Pt-1), IS 10810 (Pt 11): 1984           |
| 49.                |                              | Hot Set Test                            | Cl. 15.1(d) - i Cl. 4.1(Table-1) of IS 7098(Pt-1), IS 10810 (Pt 30): 1984                  |
| 50.                |                              | Shrinkage test                          | Cl. 15.1(d), (e)-iv,vi Cl.4.1 (Table-1,2) of IS 7098(Pt-1), IS 10810 (Pt 12): 1984         |
| 51.                |                              | Water Absorption (Gravimetric)          | Cl. 15.1(d)-v Cl. 4.1 (Table-1) of IS 7098(Pt-1), IS 10810 (Pt 33): 1984                   |
| 52.                |                              | Loss of mass test                       | Cl. 15.1(e)- i of IS 7098 (Pt-1), Cl. 4.1 (table- 2) IS 5831, IS 10810 (Pt 10):1984        |
| 53.                |                              | Hot deformation test                    | Cl. 15.1(e)-v of IS 7098(Pt-1), Cl. 4.1(Table 2) of IS 5831, IS 10810 (Pt 15): 1984        |



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| Electrical Testing |                              |                                            |                                                                                      |
|--------------------|------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                   | Test Method                                                                          |
|                    | Cable and Accessories        |                                            |                                                                                      |
| 54.                |                              | Heat shock test                            | Cl. 15.1(e)-vi of IS 7098(Pt-1), Cl. 4.1(Table-2) of IS 5831, IS 10810 (Pt 14): 1984 |
| 55.                |                              | Thermal Stability                          | Cl. 15.1(e)-vi of IS 7098 (Pt-1), Cl.4.1(Table-2) of IS 5831, IS 10810 (Pt 60):1984  |
| 56.                |                              | Insulation resistance (Volume Resistivity) | Cl. 15.1(f) Cl.4.1 (table-1) of IS 7098(Pt-1), IS 10810 (Pt 43): 1984                |
| 57.                |                              | High voltage Test                          | Cl. 15.1(g) Cl. 16.2of IS 7098 (Pt- 1), IS 10810 (Pt 45): 1984                       |
| 58.                |                              | Flammability test                          | Cl. 15.1(h) Cl.16.3 of IS 7098(Pt-1), IS 10810 (Pt 53): 1984                         |
| 59.                |                              | Cold Bend Test                             | Cl.15.4(a) of IS 7098 (Pt-1), Cl. 4.1, (Table- 2) of IS 5831, IS 10810 (Pt 20): 1984 |
| 60.                |                              | Cold Impact Test                           | Cl. 15.4(b) of IS 7098(Pt-1), Cl. 4.1, (Table-2) of IS 5831, IS 10810 (Pt. 21): 1984 |
| 61.                |                              | Oxygen Index Test                          | Cl. 15.1.1(C1)-a Cl. 16.4 of IS 7098 (Pt- 1), IS 10810 (Pt 58):1984                  |
| 62.                |                              | Oxygen Index Test                          | Cl.15.1.1 (C1)-a Cl. 16.4 of IS 7098 (Pt- 1), ASTM D 2863-9: 1995                    |



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Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                                                                                |                                          |                                                                                  |
|--------------------|------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                                   | Specific Tests Performed                 | Test Method                                                                      |
|                    | Cable and Accessories                                                                          |                                          |                                                                                  |
| 63.                |                                                                                                | Flame Retardance Test on Single Cable    | Cl. 15.1.1(C1)-b, Cl.16.5 of IS 7098 (Pt-1), IS 10810 (Pt 61): 1984              |
| 64.                |                                                                                                | Flame Retardance Test on Single Cable    | Cl. 15.1.1(C1)-b Cl.16.5 of IS 7098 (Pt- 1), SS-424-1475: 2018                   |
| 65.                |                                                                                                | Flame retardance test on bunched cables  | Cl. 15.1.1(C1)-c Cl.16.6 of IS 7098 (Pt- 1), IS 10810 (Pt -62):1984              |
| 66.                |                                                                                                | Flame retardance test on bunched cables  | Cl. 15.1.1(C1)-c Cl.16.6 of IS 7098 (Pt- 1), IEC- 60332-3-22/23/24:2018          |
| 67.                |                                                                                                | Temperature Index Test                   | Cl.15.1.1(C2)-g Cl.16.9 of IS 7098(Pt-1), IS 10810 (Pt -64): 1984                |
| 68.                |                                                                                                | Temperature Index Test                   | Cl. 15.1.1(C2)-g Cl.16.9 of IS 7098(Pt-1), ASTM D 2863-09: 1995                  |
| 69.                |                                                                                                | Smoke Density                            | Cl. 15.1.1(C2)-e Cl.16.10 of IS 7098 (Pt-1), IS 10810 (Pt- 63), ASTM D 2843:1999 |
| 70.                |                                                                                                | Halogen Acid Gas                         | Cl.15.1.1(C2)-f Cl.16.13, 16.8 of IS 7098 (Pt-1), IS 10810 (Pt-59): 1984         |
| 71.                | PVC insulated (heavy duty) electric cables for working voltages up to and including 1100 Volts | Annealing test for Copper Conductor      | Cl. 15.1(a)-1 of IS 1554(Pt-1), Cl. 7.1.2.1 of IS 8130, IS 10810 (Pt 1): 1984    |
| 72.                |                                                                                                | Tensile strength for Aluminium Conductor | Cl. 15.1(a)-2 of IS 1554(Pt-1), Cl. 7.2.1. of IS 8130, IS 10810 (Pt. 2): 1984    |



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| Electrical Testing |                              |                                                       |                                                                                                   |
|--------------------|------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                              | Test Method                                                                                       |
|                    | Cable and Accessories        |                                                       |                                                                                                   |
| 73.                |                              | Wrapping test for Aluminium Conductor                 | Cl.15.1(a)-3) of IS 1554(Pt-1), Cl.7.2.2 of IS 8130, IS 10810 (Pt 3): 1984                        |
| 74.                |                              | Conductor resistance                                  | Cl. 15.1(a)-4) of IS 1554 (Pt-1), Cl. 7.3, (Table-1,2) of IS 8130, IS 10810 (Pt. 5):1984          |
| 75.                |                              | Dimension for armouring material                      | Cl.15.1 b), Cl. 13.6(a), (b) of IS 1554(Pt-1), Cl.7 of Table 5 of IS 3975, IS 10810 (Pt. 36):1984 |
| 76.                |                              | Tensile strength of armouring material                | Cl. 15.1(b) Cl.13.6(a), (b) of IS 1554(Pt.- 1), IS 10810 (Pt. 37):1984                            |
| 77.                |                              | Elongation at break of armouring material             | Cl. 15.1(b) Cl. 13.6(a), (b) of IS 1554(Pt-1), IS 10810 (Pt. 37): 1984                            |
| 78.                |                              | Mass of Zinc coating                                  | Cl. 15.1(b) Cl. 13.6 (f) of IS 1554 (Pt-1), Cl. 9.1 of IS 3975, IS 10810 (Pt. 41): 1984           |
| 79.                |                              | Armour Resistance Test                                | Cl. 15.1(b) Cl.13.6 (g) of IS 1554 (Pt-1), Cl. 8.4 of IS 3975, IS 10810 (Pt. 42): 1984            |
| 80.                |                              | Torsion test on Galvanized steel wire for armouring   | Cl. 15.1(b) Cl. 13.6(c) of IS 1554(Pt-1), Cl. 8.2 of Table 6 of IS 3975, IS 10810 (Pt. 38): 1984  |
| 81.                |                              | Winding test on Galvanized steel strips for armouring | Cl. 15.1(b) Cl. 13.6 (d)of IS 1554(Pt-1), IS 10810 (Pt 39): 1984                                  |

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90 of 135

# Quality And Accreditation Institute

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| Electrical Testing |                              |                                                         |                                                                                                |
|--------------------|------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                | Test Method                                                                                    |
|                    | Cable and Accessories        |                                                         |                                                                                                |
| 82.                |                              | Uniformity of Zinc coating                              | Cl. 15.1(b) Cl. 13.6 (e) of IS 1554 (Pt-1), Cl. 9.2 of IS 3975, IS 10810 (Pt. 40): 1984        |
| 83.                |                              | Resistivity & conductance test of armour (wires/strips) | Cl. 15.1(b) Cl.13.6 (g) of IS 1554(Pt-1), Cl. 8.4 of IS 3975, IS 10810 (Pt 42): 1984           |
| 84.                |                              | Thickness of Insulation & Sheath                        | Cl. 15.1(C) Cl. 9.2, 9.3,12.3, 14.4.1 (Table- 2,4,7) of IS 1554 (Pt- 1), IS 10810 (Pt 6): 1984 |
| 85.                |                              | Tensile strength of insulation & Sheath                 | Cl. 15.1(d)-1 of 1554 (Pt-1), Cl. 4.1 (table-1,2) of IS 5831, IS 10810 (Pt 7):1984             |
| 86.                |                              | Elongation at break of insulation & sheath              | Cl. 15.1(d)-1 of IS 1554 (Pt-1) Cl. 4.1 (table-1,2) of IS 5831, IS 10810 (Pt 7): 1984          |
| 87.                |                              | Ageing in air oven- Tensile Strength                    | Cl. 15.1(d)-2 of IS 1554 (Pt-1), Cl.4.1 (table-1,2) IS 5831, IS 10810 (Pt 11): 1984            |
| 88.                |                              | Ageing in air oven- Elongation                          | Cl. 15.1(d)-2 of IS 1554 (Pt-1), Cl.4.1 (table-1,2) IS 5831, IS 10810 (Pt 11): 1984            |
| 89.                |                              | Shrinkage test                                          | Cl. 15.1(d)-3 of IS 1554(Pt-1), Cl.4.1 (table-1,2) of IS 5831, IS 10810 (Pt-12):1984           |





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Valid until: 28 April 2027

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| Electrical Testing |                              |                                |                                                                                         |
|--------------------|------------------------------|--------------------------------|-----------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed       | Test Method                                                                             |
|                    | Cable and Accessories        |                                |                                                                                         |
| 90.                |                              | Hot deformation test           | Cl. 15.1(d)-4 of IS 1554(Pt-1)<br>Cl.4.1(table1,2) of IS 5831, IS 10810<br>(Pt.15):1984 |
| 91.                |                              | Loss of mass test              | Cl. 15.1(d)-5 of IS 1554(Pt-1)<br>Cl.4.1(table1,2) IS 5831, IS 10810<br>(Pt.10):1984    |
| 92.                |                              | Heat shock test                | Cl. 15.1(d)-6 of IS 1554(Pt-1)<br>Cl.4.1(table1,2) IS 5831, IS 10810<br>(Pt.14):1984    |
| 93.                |                              | Thermal Stability              | Cl. 15.1(d)-7 of IS 1554(Pt-1)<br>Cl.4.1(table1,2) IS 5831, IS 10810<br>(Pt.60):1984    |
| 94.                |                              | Insulation resistance constant | Cl. 15.1(e) of IS 1554(Pt-1), Cl.4.1<br>(table-1) of IS 5831, IS 10810 (Pt<br>43):1984  |
| 95.                |                              | Volume resistivity             | Cl. 15.1(e) of IS 1554(Pt-1), Cl.4.1<br>(table-1) of IS 5831, IS 10810 (Pt<br>43):1984  |
| 96.                |                              | High voltage Test (AC)         | Cl. 15.1(f) Cl. 16.3 of IS 1554(Pt- 1),<br>IS 10810 (Pt 45): 1984                       |
| 97.                |                              | High voltage Test (DC)         | Cl. 15.1(f) Cl. 16.3 of IS 1554(Pt- 1),<br>IS 10810 (Pt 45): 1984                       |
| 98.                |                              | Flammability test              | Cl. 15.1(h) Cl.16.4 of IS 1554(Pt-1), IS<br>10810 (Pt 53): 1984                         |

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92 of 135



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electrical Testing |                              |                                            |                                                                                              |
|--------------------|------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                   | Test Method                                                                                  |
|                    | Cable and Accessories        |                                            |                                                                                              |
| 99.                |                              | Cold Bend Test                             | Cl.15.4(a) of IS 1554 (Pt-1),<br>Cl. 4.1, (Table- 1,2) of IS 5831,<br>IS 10810 (Pt 20): 1984 |
| 100.               |                              | Cold Impact Test                           | Cl. 15.4(b) of IS 1554(Pt-1), Cl. 4.1,<br>(Table-1,2) of IS 5831, IS 10810 (Pt.<br>21): 1984 |
| 101.               |                              | Oxygen Index Test                          | Cl. 15.1.1(C1, C2) Cl. 16.5 of IS 1554<br>(Pt- 1), IS 10810 (Pt 58): 1984                    |
| 102.               |                              | Oxygen Index Test                          | Cl.15.1.1 (C1, C2) Cl. 16.5 of IS<br>1554 (Pt- 1), ASTM D 2863-09:1995                       |
| 103.               |                              | Flame Retardance Test<br>on Single Cable   | Cl. 15.1.1(C1) Cl.16.6 of IS 1554(Pt-<br>1), IS 10810 (Pt 61): 1984                          |
| 104.               |                              | Flame retardance test on bunched<br>cables | Cl. 15.1.1(C1) Cl.16.7 of IS 1554 (Pt-<br>1), IS 10810 (Pt -62):1984                         |
| 105.               |                              | Smoke Density                              | Cl. 15.1.1(C2) Cl.16.11 of IS 1554 (Pt-<br>1), IS 10810 (Pt- 63), ASTM D<br>2843:1999        |
| 106.               |                              | Halogen Acid Gas                           | Cl.15.1.1(C2) Cl.16.9 of IS 1554 (Pt-<br>1), IS 10810 (Pt-59): 1984                          |
| 107.               |                              | Temperature Index Test                     | Cl.15.1.1(C1, C2) Cl.16.10 of IS 1554<br>(Pt-1), IS 10810 (Pt-64): 1984                      |
| 108.               |                              | Temperature Index Test                     | Cl.15.1.1(C1, C2) Cl.16.10 of IS 1554<br>(Pt-1), ASTM D 2863-09:1995                         |

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93 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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| Electrical Testing |                              |                                                    |                                                                                   |
|--------------------|------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                           | Test Method                                                                       |
|                    | Cable and Accessories        |                                                    |                                                                                   |
| 109.               |                              | Annealing test for Copper Conductor                | Cl. 15.1(a)-1 of IS 1554(Pt-1), Cl. 7.1.2.1 of IS 8130, IS 10810 (Pt 1): 1984     |
| 110.               | Copper Wire                  | Bismuth test                                       | IS 440:1964, IS 191:2007                                                          |
| 111.               |                              | Copper purity test                                 | IS 440:1964, IS 191:2007                                                          |
| 112.               |                              | Lead test                                          | IS 440:1964, IS 191:2007                                                          |
| 113.               |                              | Oxygen test                                        | IS 440:1964, IS 191:2007                                                          |
| 114.               | Aerial Bunched Cables        | Tensile strength for Aluminium Conductor           | Cl. 10.1(a)- i of IS 14255, Cl. 7.2.1 of IS 8130, IS 10810 (Pt 2):1984            |
| 115.               |                              | Wrapping test                                      | Cl. 10.1(a)- i of IS 14255, Cl. 7.2.2 of IS 8130, IS 10810 (Pt 3):1984            |
| 116.               |                              | Conductor resistance                               | Cl. 10.1(a)- i of IS 14255, Cl. 7.3 (table-1,2) of IS 8130, IS 10810 (Pt 5):1984  |
| 117.               |                              | Tensile strength of aluminium conductor            | Cl. 10.1(a)-i of IS 14255, Cl. 7.2.1. of IS 8130, IS 10810 (Pt 2):1984            |
| 118.               |                              | Wrapping test                                      | Cl. 10.1(a)- i of IS 14255, Cl.7.2.2 of IS 8130, IS 10810 (Pt 3):1984             |
| 119.               |                              | Conductor resistance                               | Cl.10.1(a)- i of IS 14255, Cl. 7.3 (Table- 1,2) of IS 8130, IS 10810 (Pt 5): 1984 |
| 120.               |                              | Test on Messenger Conductor- Cconductor resistance | Cl.10.1(a)- i of IS 14255, Cl.6 (Table- 3) of IS 8130, IS 10810 (Pt 5): 1984      |



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Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                             |                                                                        |
|--------------------|------------------------------|---------------------------------------------|------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                    | Test Method                                                            |
|                    | Cable and Accessories        |                                             |                                                                        |
| 121.               |                              | Elongation Test on messenger conductor      | Cl. 10.1(b)- i Cl.11.3, table-3 of IS 14255 1995                       |
| 122.               |                              | Test on Messenger Conductor - Breaking Load | Cl. 10.1(b)-i Cl.6.5, table-3 of IS 14255: 1995                        |
| 123.               |                              | Tensile strength of insulation              | Cl. 10.1(c)-i Cl. 5.1, (Table-1,2) of IS 14255, IS 10810 (Pt 7): 1984  |
| 124.               |                              | Ageing in air oven- Elongation              | Cl. 10.1(c)- i Cl. 5.1 (Table-1) of IS 14255, IS 10810 (Pt 11): 1984   |
| 125.               |                              | Ageing in air oven- Tensile Strength        | Cl. 10.1(c)- i Cl. 5.1 (Table-1) of IS 14255, IS 10810 (Pt 11): 1984   |
| 126.               |                              | Hot Set Test                                | Cl. 10.1(c)- i Cl. 5.1, (Table-1) of IS 14255, IS 10810 (Pt.30): 1984  |
| 127.               |                              | Shrinkage test                              | Cl. 10.1(c)-iv Cl. 5.1, (Table-1) of IS 14255, IS 10810 (Pt12): 1984   |
| 128.               |                              | Water Absorption (Gravimetric)              | Cl. 10.1(c)-v Cl. 5.1, (Table-1) of IS 14255, IS 10810 (Pt. 33): 1984  |
| 129.               |                              | Carbon black test - Content                 | Cl. 10.1(c)-vi Cl. 5.1 (Table-1,2) of IS 14255, IS 10810 (Pt 32): 1984 |
| 130.               |                              | Carbon black test - Content                 | Cl.10.1(c)-vi Cl. 5.1 (Table-1,2) of IS 14255, IS 2530: 1963           |
| 131.               |                              | Carbon black test - Dispersion              | Cl.10.1(c)-vi Cl. 5.1 (Table-1,2) of IS 14255, IS 2530: 1963           |
| 132.               |                              | Thickness of Insulation                     | Cl. 10.1(e) Cl. 7.2 (Table-4) of IS 14255, IS 10810 (Pt: 6): 1984      |

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95 of 135

# Quality And Accreditation Institute

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| Electrical Testing |                                                                                        |                                                       |                                                                       |
|--------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                           | Specific Tests Performed                              | Test Method                                                           |
|                    | Cable and Accessories                                                                  |                                                       |                                                                       |
| 133.               |                                                                                        | Insulation resistance (Volume Resistivity)            | Cl. 10.1(f) Cl. 5.1 (Table-1,2) of IS 14255, IS 10810 (Pt 43): 1984   |
| 134.               |                                                                                        | High voltage test                                     | Cl. 10.1(g) Cl. 11.2 of IS 14255, IS 10810 (Pt 45): 1984              |
| 135.               |                                                                                        | Physical test for PE insulation-Elongation at break   | Cl. 10.1(d)-i Cl. 5.1 (Table-1,2) of IS 14255, IS 10810 (Pt.7): 1984  |
| 136.               |                                                                                        | Elongation at break of insulation                     | Cl.10.1(c)-i Cl. 5.1 (Table-1, 2) of IS 14255, IS 10810 (Pt. 7): 1984 |
| 137.               |                                                                                        | Bending test                                          | Cl.10.4,11.4 of IS 14255, IS 10810 (Pt 50): 1984                      |
| 138.               |                                                                                        | High Voltage Test                                     | CENELAC HD 626 S1 A1/A2 2002                                          |
| 139.               | Aluminium conductors for overhead transmission purposes- Aluminium stranded conductors | Measurement of diameter of individual aluminium wires | Cl.13.1(a) Cl.12.2 (Table -1,2), Cl.7 of IS 398 (Pt-1): 1996          |
| 140.               |                                                                                        | Breaking test of individual wires                     | Cl.13.1(b) Cl.12.3, (Table -1,2) of IS 398 (Pt-1): 1996               |
| 141.               |                                                                                        | Wrapping test                                         | Cl.13.1(c) Cl.12.4 of IS 398 (Pt-1): 1996                             |
| 142.               |                                                                                        | Resistance test                                       | Cl.13.1(d) Cl.12.5 (Table -1,2) of IS 398 (Pt-1): 1996                |
| 143.               |                                                                                        | Measurement of lay ratio                              | Cl.13.1(e) Cl.12.6, Cl.9 & (Table -3) of IS 398 (Pt-1): 1996          |
| 144.               |                                                                                        | Freedom From Defects                                  | Cl. 6.1 of IS 398 (Pt-1): 1996                                        |



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Valid from: 29 April 2025

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| Electrical Testing |                                                                                                              |                                                                 |                                                                 |
|--------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                                                 | Specific Tests Performed                                        | Test Method                                                     |
|                    | Cable and Accessories                                                                                        |                                                                 |                                                                 |
| 145.               |                                                                                                              | Joints in Stranded Conductors                                   | Cl.8, Cl.8.1, Cl.8.2 of IS 398 (Pt-1): 1996                     |
| 146.               | Aluminium conductors for overhead transmission purposes- Aluminium conductors, galvanized steel - reinforced | Measurement of diameter of individual aluminium and steel wires | Cl.14.1(d) Cl. 13.2, Cl. 8 (Table 1,2) of IS 398 (Pt-2): 1996   |
| 147.               |                                                                                                              | Breaking test of individual wires                               | Cl.14.1(f) Cl. 13.3(Table 1 & 2) of IS 398 (Pt-2): 1996         |
| 148.               |                                                                                                              | Ductility test- (Elongation)                                    | Cl.14.1(g) Cl.13.4, 13.4.2 of IS 398 (Pt- 2): 1996              |
| 149.               |                                                                                                              | Ductility test- (Torsion test)                                  | Cl.14.1(g) Cl. 13.4, 13.4.1 of IS 398 (Pt.- 2): 1996            |
| 150.               |                                                                                                              | Wrapping test                                                   | Cl.14.1(h) Cl. 13.5, Cl.13.5.1, 13.5.2 of IS 398 (Pt.- 2): 1996 |
| 151.               |                                                                                                              | Resistance test                                                 | Cl.14.1(j) Cl. 13.6 of IS 398 (Pt-2): 1996                      |
| 152.               |                                                                                                              | Galvanizing test- a uniformity of zinc coating                  | Cl.14.1(k) Cl. 13.7 of IS 398 (Pt-2): 1996                      |
| 153.               |                                                                                                              | Galvanizing test- weight of zinc coating                        | Cl.14.1(k) Cl. 13.7 of IS 398 (Pt-2): 1996                      |
| 154.               |                                                                                                              | Measurement of lay ratio                                        | Cl.14.1(e) Cl. 13.8, Cl.10 (Table 4) of IS 398 (Pt-2): 1996     |
| 155.               |                                                                                                              | Freedom from defects                                            | Cl. 7.1 of IS 398 (Pt-2): 1996                                  |
| 156.               |                                                                                                              | Aluminium conductor, galvanized                                 | Cl. 3.1 of IS 398 (Pt-2): 1996                                  |





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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electrical Testing |                                                                                             |                                                            |                                                                                  |
|--------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                                | Specific Tests Performed                                   | Test Method                                                                      |
|                    | Cable and Accessories                                                                       |                                                            |                                                                                  |
|                    |                                                                                             | steel- reinforced                                          |                                                                                  |
| 157.               |                                                                                             | Joints in Aluminium Stranded wires                         | Cl. 9, Cl. 9.1, Cl.9.2, Cl. 9.3 of IS 398 (Pt-2): 1996                           |
| 158.               | Aluminium conductors for overhead transmission purposes- Aluminium a lay stranded conductor | Breaking test of individual aluminium a lay wire           | Cl.12.2, (Table-1,2), Cl.12.3, Cl. 7 of IS 398 (Pt-4): 1994                      |
| 159.               |                                                                                             | Elongation test of individual aluminium a lay wire         | Cl. 12.2 (Table-1,2), Cl. 12.3 of IS 398(Pt-4): 1994                             |
| 160.               |                                                                                             | Resistance test of individual aluminium a lay wire         | Cl.,12.4 (Table-1,2) of IS 398 (Pt-4)1994                                        |
| 161.               |                                                                                             | Measurement of diameter of individual aluminium a lay wire | Cl. 3.1.2, Table 1,2 of IS 398 (Pt.- 4): 1994                                    |
| 162.               |                                                                                             | Measurement of lay ratio                                   | Cl. 9, Cl. 9.1 Cl. 9.2, Cl.9.3, Cl.9.4 Table-3 of IS: 398 (Pt-4): 1994           |
| 163.               |                                                                                             | Freedom from defects                                       | Cl. 6.1 of IS: 398 (Pt-4): 1994                                                  |
| 164.               |                                                                                             | Joint in wires                                             | Cl. 8, Cl.8.1, Cl. 8.2 of IS: 398 (Pt-4): 1994                                   |
| 165.               | Welding Cables                                                                              | Annealing test                                             | Cl. 10.1.a.1, Cl.7 of IS 9857, Cl.7.1.2, 7.2.3 of IS 8130, IS 10810 (Pt 1): 1984 |
| 166.               |                                                                                             | Conductor resistance                                       | Cl. 10.1.a.2 of IS 9857, Cl. 7.3 (Table-3,4,5) of IS 8130, IS 10810 (Pt 5): 1984 |
| 167.               |                                                                                             | Thickness of Covering                                      | Cl. 10.1.b, Cl.9.2 (Table-1) of IS 9857,                                         |





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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electrical Testing |                              |                                      |                                                                                  |
|--------------------|------------------------------|--------------------------------------|----------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed             | Test Method                                                                      |
|                    | Cable and Accessories        |                                      |                                                                                  |
|                    |                              |                                      | IS 10810 (Pt 6):1984                                                             |
| 168.               |                              | Tensile strength                     | Cl. 10.1.c.1 of IS 9857, Cl.4.1 (Table-2) of IS 6380, IS 10810 (Pt 7): 1984      |
| 169.               |                              | Elongation at break                  | Cl. 10.1.c.1 of IS 9857, Cl. 4.1 (Table-2) of IS 6380, IS 10810 (Pt 7): 1984     |
| 170.               |                              | Ageing in air oven- Tensile Strength | Cl. 10.1.c.2, of IS 9857, Cl. 4.1 (Table-2,3) of IS 6380, IS 10810 (Pt 11): 1984 |
| 171.               |                              | Ageing in air oven- Elongation       | Cl. 10.1.c.2, of IS 9857, Cl. 4.1 (Table-2,3) of IS 6380, IS 10810 (Pt 11): 1984 |
| 172.               |                              | Ageing in air bomb- Elongation       | Cl.10.1. c.3, of IS 9857, Cl. 4.1 (Table-2,3) of IS 6380, IS 10810 (Pt 56): 1984 |
| 173.               |                              | Ageing in air bomb- Tensile Strength | Cl. 10.1.c.3, of IS 9857, Cl. 4.1(Table-2,3) of IS 6380, IS 10810 (Pt 56): 1984  |
| 174.               |                              | Oil resistance- Elongation           | Cl.10.1. c.4 of IS 9857, Cl. 4.1 (Table-2) of IS 6380, IS 10810 (Pt.31): 1984    |
| 175.               |                              | Oil resistance-Tensile Strength      | Cl.10.1. c.4 of IS 9857, Cl. 4.1 (Table-2) of IS 6380, IS 10810 (Pt.31): 1984    |
| 176.               |                              | Hot Set Test                         | Cl. 10.1.c.5 of IS 9857, Cl. 4.1 (Table-3) of IS 6380, IS 10810                  |

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99 of 135

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| Electrical Testing |                                                                                |                                                           |                                                                                       |
|--------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                   | Specific Tests Performed                                  | Test Method                                                                           |
|                    | Cable and Accessories                                                          |                                                           |                                                                                       |
|                    |                                                                                |                                                           | (Pt 30): 1984                                                                         |
| 177.               |                                                                                | High voltage Test (Water Immersion)                       | Cl. 10.1.d, Cl.11.1 of IS 9857, IS 10810 (Pt 45): 1984                                |
| 178.               |                                                                                | Static flexibility test                                   | Cl. 10.1.e, Cl.11.3 of IS 9857, IS 10810(Pt.54): 1984                                 |
| 179.               |                                                                                | Flammability test                                         | Cl. 10.1.f, Cl. 11.4 of IS 9857, IS 10810 (Pt 53): 1984                               |
| 180.               | Elastomer insulated Cables for working voltages up to and including 1100 volts | Per sulphate test (for tinned Copper Conductor)           | Cl. 21.1 Cl.3 of IS 9968(Pt-1), Cl.7.1.1 of IS 8130, IS 10810 (Pt -4): 1984           |
| 181.               |                                                                                | Annealing test for Copper Conductor                       | Cl. 21.1, of IS 9968(Pt-1), Cl.7.1.2, 7.2.3 of IS 8130, IS 10810 (Pt 1): 1984         |
| 182.               |                                                                                | Tensile strength for Aluminium Conductor                  | Cl. 21.1, Cl.3 of IS 9968 (Pt-1), Cl.7.2.1 a & b of IS 8130, IS 10810 (Pt 2): 1984    |
| 183.               |                                                                                | Wrapping test for aluminium conductor                     | Cl. 21.1, Cl.3 of IS 9968 (Pt-1), Cl.7.2.2 of IS 8130, IS 10810 (Pt 3): 1984          |
| 184.               |                                                                                | Conductor resistance                                      | Cl. 21.1(d) of IS 9968 (Pt-1), Cl. 4.1 (Table- 2,3) of IS 8130, IS 10810 (Pt 5): 1984 |
| 185.               |                                                                                | Thickness of Insulation and Sheath and Overall dimensions | Cl. 21.1, Cl.12,19 (Table-1 to 10) of IS 9968(Pt-1), IS 10810 (Pt 6):1984             |



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| Electrical Testing |                              |                                            |                                                                                        |
|--------------------|------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                   | Test Method                                                                            |
|                    | Cable and Accessories        |                                            |                                                                                        |
| 186.               |                              | Tensile strength of insulation & sheath    | Cl. 21.1(a) of IS 9968(Pt-1), Cl.4.1 (Table-2,3) IS 6380, IS 10810 (Pt 7): 1984        |
| 187.               |                              | Elongation at break of insulation & sheath | Cl. 21.1(a) of IS 9968 (Pt-1), Cl.4.1 (Table-2,3) IS 6380, IS 10810 (Pt 7): 1984       |
| 188.               |                              | Ageing in air oven- Elongation             | Cl. 21.1(b) of IS 9968(Pt-1), Cl. 4.1 (Table-2, 3) of IS 6380, IS 10810 (Pt. 11): 1984 |
| 189.               |                              | Ageing in air oven- Tensile strength       | Cl. 21.1(b) of IS 9968(Pt-1), Cl. 4.1 (Table-2, 3) of IS 6380, IS 10810 (Pt. 11): 1984 |
| 190.               |                              | Ageing in oxygen bomb-Elongation           | Cl. 21.1(d) of IS 9968(Pt-1), Cl. 4.1 (Table-2, 3) of IS 6380, IS 10810 (Pt. 16): 1984 |
| 191.               |                              | Ageing in oxygen bomb-Tensile Strength     | Cl. 21.1(d) of IS 9968(Pt-1), Cl. 4.1 (Table-2,3) of IS 6380, IS 10810 (Pt 16): 1984   |
| 192.               |                              | Ageing in air bomb- Elongation             | Cl. 21.1(b) of IS 9968(Pt-1), Cl. 4.1(Table-2, 3) of IS 6380, IS 10810 (Pt. 56): 1984  |
| 193.               |                              | Ageing in air bomb- Tensile Strength       | Cl. 21.1(b) of IS 9968(Pt-1), Cl. 4.1(Table-2, 3) of IS 6380, IS 10810 (Pt. 56): 1984  |



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(formerly Centre for Laboratory Accreditation)



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Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                     |                                                                                      |
|--------------------|------------------------------|-------------------------------------|--------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed            | Test Method                                                                          |
|                    | Cable and Accessories        |                                     |                                                                                      |
| 194.               |                              | Hot Set Test                        | Cl. 21.1(e) Cl. 4.1 (Table-1) of IS 9968(Pt-1), IS 10810 (Pt 30): 1984               |
| 195.               |                              | Oil resistance- Elongation          | Cl. 21.1(f) of IS 9968(Pt-1), Cl. 4.1 (Table-2,3) of IS 6380, IS 10810 (Pt.31): 1984 |
| 196.               |                              | Oil resistance-Tensile Strength     | Cl. 21.1(f) of IS 9968(Pt-1), Cl. 4.1(Table-2,3) of IS 6380, IS 10810 (Pt.31): 1984  |
| 197.               |                              | Tear resistance                     | Cl. 21.1(g) of IS 9968(Pt-1), Cl. 4.1 (Table-3) of IS 6380, IS 10810 (Pt.17): 1984   |
| 198.               |                              | Insulation resistance               | Cl. 21.1 of IS 9968(Pt-1), Cl. 4.1(Table-2) of IS 6380, IS 10810 (Pt. 43): 1984      |
| 199.               |                              | High voltage Test (Water Immersion) | Cl. 21.1, Cl. 22.2 of IS 9968 (Pt-1), IS 10810(Pt 45): 1984                          |
| 200.               |                              | Flammability test                   | Cl. 21.1, Cl. 22.3 of IS 9968(Pt-1), IS 10810 (Pt 53): 1984                          |
| 201.               |                              | Water absorption test (Electrical)  | Cl. 21.1 of IS 9968(Pt-1), Cl. 4.1 (Table-2) of IS 6380, IS 10810 (Pt.28): 1984      |
| 202.               |                              | Cord Flexing test                   | Cl. 21.4 22.4 of IS 9968 (Part-1): 1988                                              |



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## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                                            |                                                                  |                                                                                                                                                                 |
|--------------------|--------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test               | Specific Tests Performed                                         | Test Method                                                                                                                                                     |
|                    | Cable and Accessories                      |                                                                  |                                                                                                                                                                 |
| 203.               | Halogen Free Flame Retardant (HFFR) cables | Conductor resistance                                             | Table-2, III). a). i, Cl. 4.1 Of IS 17048, Cl. 7.3 of IS 8130, IS 10810 (Pt 5): 1984                                                                            |
| 204.               |                                            | Annealing test for Copper Conductor                              | Table-2, III). a). i), Cl. 4.1 Of IS 17048, Cl. 7.1.2.1 & 7.2.3 of IS 8130, IS 10810 (Pt 1): 1984                                                               |
| 205.               |                                            | Per sulphate test for tinned copper                              | Table-2, III). a). i), Cl. 5.10 of IS 17048, Cl. 7.1.1 of IS 8130, IS 10810 (Pt -4): 1984                                                                       |
| 206.               |                                            | Tensile strength for Aluminium Conductor                         | Table-2, III). a). iv), Cl. 4.1 of IS 17048, Cl. 7.2.1 a, b of IS 8130, IS 10810 (Pt 2): 1984                                                                   |
| 207.               |                                            | Wrapping test for Aluminium Conductor                            | Table-2, III). a). v), Cl. 4.1 of IS 17048, Cl. 7.2.2 of IS 8130, IS 10810 (Pt 3): 1984                                                                         |
| 208.               |                                            | Test for Overall Dimensions and Thickness of Insulation & Sheath | Table-2, III). b), Cl.11.2, 11.3, 12.2, 12.3, 13.2, 13.4, 13.5, 13.6, 14.2, 14.4, 14.5, 14.6, 15.2, 15.4, 15.5, Table 3 to 8 of IS 17048, IS 10810 (Pt 6): 1984 |
| 209.               |                                            | Tensile strength of insulation before and after ageing           | Table-2, III).c). i), Cl. 4.2, Annex A of IS 17048, IS 10810 (Pt 7): 1984                                                                                       |





# Quality And Accreditation Institute

## Centre for International Accreditation

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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                           |                                                                               |
|--------------------|------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                  | Test Method                                                                   |
|                    | Cable and Accessories        |                                                           |                                                                               |
| 210.               |                              | Tensile strength of sheath before and after ageing        | Table-2, III).c). i), Cl. 4.5, Annex B of IS 17048, IS 10810 (Pt 7): 1984     |
| 211.               |                              | Elongation at break of insulation before and after ageing | Table-2, III).c). i), Cl.4.2, Annex A of IS 17048, IS 10810 (Pt 7): 1984      |
| 212.               |                              | Elongation at break of sheath before and after ageing     | Table-2, III). e). i), Cl. 4.5, Annex B of IS 17048, IS 10810 (Pt 7): 1984    |
| 213.               |                              | High voltage Test (AC)                                    | Table-2, III). f). i), Cl. 5.1, of IS 17048, IS 10810 (Pt 45): 1984           |
| 214.               |                              | Insulation resistance                                     | Table-2, III).c). i), Cl. 4.2, Annex A of IS 17048, IS 10810 (Pt 43): 1984    |
| 215.               |                              | Oxygen Index Test                                         | Table-2, III).c). iv), Cl. 5.4, of IS 17048, IS 10810(P-58): 1984             |
| 216.               |                              | Ageing in air oven- Tensile strength                      | Table-2, III).c).vi), Cl. 4.2, Annex A of IS,17048, IS 10810 (Pt 11): 1984    |
| 217.               |                              | Hot deformation test                                      | Table-2, III). e).vi), Cl. 4.5, Annex B of IS 17048, IS 10810 (Pt 15): 1984   |
| 218.               |                              | Assessment of Halogen                                     | Table-2, III). e).vi), Cl. 5.7, Annex D of IS 17048, IS 10810(Pt- 59): 1984   |
| 219.               |                              | Cold Bend Test                                            | Table-2, III). f). i), Cl.5.1, Annex A, B of IS 17048, IS 10810 (Pt 20): 1984 |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                                             |                                                                               |
|--------------------|------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                                    | Test Method                                                                   |
|                    | Cable and Accessories        |                                                                             |                                                                               |
| 220.               |                              | Cold Impact Test                                                            | Table-2, III). f).vi), Cl.5.1, Annex A, B of IS 17048, IS 10810 (Pt 21): 1984 |
| 221.               |                              | Ozone resistance test                                                       | Table-2, III).c). xi), Cl. 4.2, Annex A of IS 17048, IS 10810 (Pt.13): 1984   |
| 222.               |                              | Flame Retardant Test                                                        | Table-2, III). f). v), Cl.5.11, of IS 17048, IS 10810 (Pt 61): 1984           |
| 223.               |                              | Hot Set Test                                                                | Table-2, III).c). xi), Cl. 4.2, Annex A of IS 17048, IS 10810 (Pt 30): 1984   |
| 224.               |                              | Flammability test                                                           | Table-2, III). f). i), Cl. 5.3, of IS 17048, IS 10810 (Pt 53): 1984           |
| 225.               |                              | Water Immersion test (Effect of water on sheath of cable)- Elongation       | Table-2, III). f).vi), Cl.5.13, of IS 17048, IS 10810 (Pt 7): 1984            |
| 226.               |                              | Water Immersion test (Effect of water on sheath of cable)- Tensile Strength | Table-2, III). f).vi), Cl.5.13, of IS 17048, IS 10810 (Pt 7): 1984            |
| 227.               |                              | Smoke Density                                                               | Table-2, III). f).vi), Cl.5.6, of IS 7048, IS 10810 (Pt 63): 1993             |
| 228.               |                              | Temperature Index Test                                                      | Table-2, III). e). iv), Cl. 5.5, of IS 17048, IS 10810 (Pt -64): 1984         |
| 229.               |                              | Temperature Index                                                           | Table-2, III). e). iv), Cl. 5.5, of IS 17048, ASTM D 2863-09: 1995            |
| 230.               |                              | Oxygen Index Test                                                           | Table-2, III). e). i), Cl. 5.4, of IS 17048, ASTM D 2863-09: 1995             |

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105 of 135

# Quality And Accreditation Institute

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### Scope of Accreditation

**IEC Test Labs LLP**

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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

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Accreditation Standard: ISO/IEC 17025:2017

| Electrical Testing |                              |                                                                                                   |                                                                                     |
|--------------------|------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                                                                          | Test Method                                                                         |
|                    | Cable and Accessories        |                                                                                                   |                                                                                     |
| 231.               |                              | Test on Filers/Dummy Cores and Binder Tapes/Identification Threads (if any) Assessment of Halogen | Table-2, III). d). i), Cl. 5.7, Annex D of IS 17048, IS 10810(Pt-59): 1984          |
| 232.               | Cables for motor vehicles    | Annealing test for Copper Conductor                                                               | Cl. 12.1, a) of IS 2465, Cl.7.1.2, 7.2.3 of IS 8130, IS 10810 (Pt 1): 1984          |
| 233.               |                              | Per sulphate test for copper                                                                      | Cl. 12.1, b) of IS 2465, Cl.7.1.1 of IS 8130, IS 10810 (Pt.4): 1984                 |
| 234.               |                              | Conductor resistance                                                                              | Cl. 12.1, c) of IS 2465, Cl. 7.3 Table-3 of IS 8130, IS 10810 (Pt 5): 1984          |
| 235.               |                              | Test for thickness of Insulation and Sheath and other dimensional checks                          | Cl. 12.1 d) of IS 2465, IS 10810 (Pt 6): 1984                                       |
| 236.               |                              | Tensile strength of elastomer insulation & sheath                                                 | Cl. 12.1, f), 1) of IS 2465, Cl.4.1 Table 2 & 3 of IS 6380, IS 10810 (Pt.7): 1984   |
| 237.               |                              | Elongation at break of insulation & sheath                                                        | Cl. 12.1, e), 1) of IS 2465, Cl. 4.1 (Table- 1,2) of IS 5831, IS 10810 (Pt 7): 1984 |
| 238.               |                              | Tensile strength of insulation & sheath                                                           | Cl. 12.1, e), 1) if IS 2465, Cl. 4.1 (Table- 1,2) of IS 5831, IS 10810 (Pt 7): 1984 |
| 239.               |                              | Ageing in air oven- Elongation                                                                    | Cl. 12.1, e), 2) of IS 2465, Cl. 4.1 (Table- 1, 2) IS 5831, IS 10810 (Pt            |

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106 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

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| Electrical Testing |                              |                                                        |                                                                                            |
|--------------------|------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test | Specific Tests Performed                               | Test Method                                                                                |
|                    | Cable and Accessories        |                                                        |                                                                                            |
|                    |                              |                                                        | 11): 1984                                                                                  |
| 240.               |                              | Ageing in air oven- Tensile strength                   | Cl. 12.1, e), 2) of IS 2465, Cl. 4.1<br>(Table-1, 2) IS 5831, IS 10810 (Pt 11):<br>1984    |
| 241.               |                              | Loss of mass test                                      | Cl. 12.1, e), 3) of IS 2465, Cl. 4.1<br>(Table1, 2) of IS 5831, IS 10810 (Pt<br>10): 1984  |
| 242.               |                              | Hot deformation test                                   | Cl. 12.1, e), 4) of IS 2465, Cl. 4.1<br>(Table1,2) of IS 5831, IS 10810 (Pt<br>15): 1984   |
| 243.               |                              | Heat shock test                                        | Cl. 12.1, e) ,5) of IS 2465, Cl. 4.1<br>(Table- 1,2) of IS 5831, IS 10810 (Pt<br>14): 1984 |
| 244.               |                              | Shrinkage test                                         | Cl. 12.1, e), 6) of IS 2465, Cl. 4.1<br>(Table- 1,2) of IS 5831, IS 10810 (Pt<br>12): 1984 |
| 245.               |                              | Elongation at break of elastomer<br>insulation& sheath | Cl. 12.1, f), 1) of IS 2465, Cl.4.1 Table<br>2&3 IS 6380, IS 10810 (Pt.7): 1984            |
| 246.               |                              | Ageing in oxygen bomb-Tensile<br>strength              | Cl. 12.1, f), 3) of IS 2465, Cl. 4.1,<br>Table 2 of IS 6380, IS 10810 (Pt.16):<br>1984     |
| 247.               |                              | Ageing in oxygen bomb-Elongation                       | Cl. 12.1, f), 3) of IS 2465, Cl. 4.1,<br>Table2 of IS 6380, IS 10810 (Pt.16):<br>1984      |

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107 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

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| Electrical Testing |                                                                                             |                                                           |                                                                |
|--------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                                | Specific Tests Performed                                  | Test Method                                                    |
|                    | Cable and Accessories                                                                       |                                                           |                                                                |
| 248.               |                                                                                             | High voltage (water immersion) test                       | Cl. 12.1, g) Cl.14.1,14.3 of IS 2465, IS 10810 (Pt.45): 1984   |
| 249.               |                                                                                             | Capacitance test                                          | Cl. 12.1, h), 16 of IS 2465, Cl. 4.1 Table 2 of IS 6380: 1984  |
| 250.               |                                                                                             | Ozone resistance test for ignition cable                  | Cl. 12.1, j), 17 of IS 2465, Cl. 4.1, Table 2 of IS 6380: 1984 |
| 251.               |                                                                                             | Effect of heat on flexibility for ignition cable          | Cl. 12.1, k), Cl. 18, of IS 2465: 1984                         |
| 252.               |                                                                                             | Effect of oil for ignition cable                          | Cl. 12.1, m), Cl. 19, 19.1 of IS 2465: 1984                    |
| 253.               |                                                                                             | Effect of lubricating oil, brake fluid, diesel and petrol | Cl. 12.1, n), Cl. 20 of IS 2465: 1984                          |
| 254.               |                                                                                             | Effect of cooling on flexibility                          | Cl. 12.4, a) Cl. 21, 21.1 of IS 2465: 1984                     |
| 255.               |                                                                                             | Flammability test                                         | Cl. 12.4, b), Cl. 22, 22.1 of IS 2465, IS 10810 (Pt 53): 1984  |
| 256.               | Armoured Optical Fibre Cable for Underground Duct                                           | Absorption Coefficient @ 375nm KAB/M                      | TEC 85170 /ASTM D 3349                                         |
| 257.               | Application                                                                                 | Brittleness Temperature % Fail @<-76°C                    | TEC 85170 /ASTM D 746                                          |
| 258.               | Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of | UV Radiation Test                                         | ASTM G-154-12a<br>ASTM G-53-96<br>ASTM G-154<br>ASTM G-154-06  |

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108 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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| Electrical Testing |                                                                                                                                                                                                            |                                              |                                                                                           |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                                                                                                                                               | Specific Tests Performed                     | Test Method                                                                               |
|                    | <b>Cable and Accessories</b>                                                                                                                                                                               |                                              |                                                                                           |
|                    | Non-Metallic Materials                                                                                                                                                                                     |                                              | ASTM G-151-00<br>ASTM G-155-04a<br>ASTM G-154-00a                                         |
| 259.               | Armoured Optical Fibre Cable for Underground Duct Application                                                                                                                                              | Anti Termide/ Rodent Test                    | TEC 85170                                                                                 |
| 260.               | Standard Test Method for Rubber Property                                                                                                                                                                   | Hydrolytic Stability Test                    | ASTM D 3137-81                                                                            |
| 261.               | Power cables with extruded insulation and their accessories                                                                                                                                                | Water Penetration Test/Water Tightness test  | IEC 60502 (Part 2)<br>IS 7098 (Part 3)                                                    |
| 262.               | Test Method for vertical tray flame test                                                                                                                                                                   | Flammability test (Vertical Tray Flame Test) | IEEE 383                                                                                  |
| 263.               | Power cable for the distribution of electrical energy standard for central thermos couple extension and instrumentation cables<br>Test method for thermoplastic insulation and jacket for wires and cables | Accelerated Water Absorption Test            | IS :10810 (P-28)<br>NEMA WC-70<br>NEMA WC-5<br>NEMA WC-57<br>NEMA WC-53<br>ASTM D 2633-02 |
| 264.               | Test Methods for thermoplastic insulation and jacket for wires & cables                                                                                                                                    | Dielectric strength retention test           | ASTM-D 2633-02<br>NEMA WC-5<br>ANSI/NEMA WC-70                                            |

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109 of 135



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## Centre for International Accreditation

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Valid from: 29 April 2025

Valid until: 28 April 2027

**Accreditation Standard: ISO/IEC 17025:2017**

| Electrical Testing |                                                                                            |                                 |                                              |
|--------------------|--------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------|
| Sl. No.            | Product (S) Material of Test                                                               | Specific Tests Performed        | Test Method                                  |
|                    | <b>Cable and Accessories</b>                                                               |                                 |                                              |
|                    | Power cables for the distribution of electrical energy Standard for control thermocouple   |                                 | NEMA WC-57<br>NEMA WC-53                     |
| 265.               | Thin-Walled flexible elastomeric cable                                                     | Tracking Resistance Test        | FLRS/SPEC/ELC/0019 REV 2 / EN 50397 (Part 1) |
| 266.               | Determination of degree of acidity (corrosively) of gases by measuring pH and conductivity | pH and conductivity test        | IEC 60754-2<br>BS 6425 (Part 2)              |
| 267.               | EC Grade aluminium rod produced by continuous casting and rolling                          | Measurement of dimensions       | IS 5484: 1997                                |
| 268.               |                                                                                            | Resistivity & Conductivity test | IS 5484: 1997                                |
| 269.               |                                                                                            | Tensile strength                | IS 1608: 1995& IS 5484: 1997                 |



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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electronics Testing |                                  |                                                   |                                                                    |
|---------------------|----------------------------------|---------------------------------------------------|--------------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test     | Specific Tests Performed                          | Test Method                                                        |
|                     | IT Equipment                     |                                                   |                                                                    |
| 1.                  | Information Technology Equipment | Components                                        | IS13252(Part 1): 2010 (Cl.1.5)                                     |
| 2.                  |                                  | Components                                        | IEC 60950-1: 2005 (Cl.1.5)<br>(Withdrawn on December 20, 2020)     |
| 3.                  |                                  | Power Interface                                   | IS 13252(Part 1): 2010 (Cl. 1.6)                                   |
| 4.                  |                                  | Power Interface                                   | IEC 60950-1: 2005 (Cl. 1.6)<br>(Withdrawn on December 20, 2020)    |
| 5.                  |                                  | Marking and Instructions                          | IS 13252(Part 1): 2010 (Cl. 1.7)                                   |
| 6.                  |                                  | Marking and Instructions                          | IEC 60950-1: 2005 (Cl. 1.7)<br>(Withdrawn on December 20, 2020)    |
| 7.                  |                                  | Durability                                        | IS 13252(Part 1) 2010 (Cl. 1.7.11)                                 |
| 8.                  |                                  | Durability                                        | IEC 60950-1: 2005 (Cl. 1.7.11)<br>(Withdrawn on December 20, 2020) |
| 9.                  |                                  | Protection from Electric shock and energy hazards | IS 13252(Part 1): 2010 (Cl. 2.1)                                   |
| 10.                 |                                  | Protection from Electric shock and energy hazards | IEC 60950-1: 2005 (Cl. 2.1)<br>(Withdrawn on December 20, 2020)    |
| 11.                 |                                  | SELV circuits                                     | IS 13252(Part 1): 2010 (Cl. 2.2)                                   |



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Valid from: 29 April 2025

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| Electronics Testing |                              |                                  |                                                                 |
|---------------------|------------------------------|----------------------------------|-----------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed         | Test Method                                                     |
|                     | IT Equipment                 |                                  |                                                                 |
| 12.                 |                              | SELV circuits                    | IEC 60950-1: 2005 (Cl. 2.2)<br>(Withdrawn on December 20, 2020) |
| 13.                 |                              | Limits of TNV circuits           | IS 13252 (Part 1): 2010 (Cl. 2.3)                               |
| 14.                 |                              | Limits of TNV circuits           | IEC 60950-1: 2005 (Cl. 2.3)<br>(Withdrawn on December 20, 2020) |
| 15.                 |                              | Limited current circuits         | IS 13252(Part 1): 2010 (Cl. 2.4)                                |
| 16.                 |                              | Limited current circuits         | IEC 60950-1: 2005 (Cl. 2.4)<br>(Withdrawn on December 20, 2020) |
| 17.                 |                              | Limited power sources            | IS 13252(Part 1): 2010/ (Cl. 2.5)                               |
| 18.                 |                              | Limited power sources            | IEC 60950-1: 2005 (Cl. 2.5)<br>(Withdrawn on December 20, 2020) |
| 19.                 |                              | Provision for Earthing & Bonding | IS 13252(Part 1): 2010 (Cl. 2.6)                                |
| 20.                 |                              | Provision for Earthing & Bonding | IEC 60950-1: 2005 (Cl. 2.6)<br>(Withdrawn on December 20, 2020) |



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| Electronics Testing |                              |                                                                     |                                                               |
|---------------------|------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                            | Test Method                                                   |
|                     | IT Equipment                 |                                                                     |                                                               |
| 21.                 |                              | Overcurrent and earth fault protection in primary circuits (Cl.2.7) | IS 13252(Part 1): 2010 (Cl. 2.7)                              |
| 22.                 |                              | Overcurrent and earth fault protection in primary circuits (Cl.2.7) | IEC 60950-1: 2005) (Cl. 2.7) (Withdrawn on December 20, 2020) |
| 23.                 |                              | Safety interlocks                                                   | IS 13252(Part 1): 2010 (Cl. 2.8)                              |
| 24.                 |                              | Safety interlocks                                                   | IEC 60950-1: 2005) (Cl. 2.8) (Withdrawn on December 20, 2020) |
| 25.                 |                              | Electrical Insulation                                               | IS 13252(Part 1): 2010 (Cl. 2.9)                              |
| 26.                 |                              | Electrical Insulation                                               | IEC 60950-1: 2005 (Cl. 2.9) (Withdrawn on December 20, 2020)  |
| 27.                 |                              | Clearances, Creepage Distance and Distance Through Insulation       | IS 13252(Part 1: 2010 (Cl. 2.10)                              |
| 28.                 |                              | Clearances, Creepage Distance and Distance Through Insulation       | IEC 60950-1: 2005 (Cl. 2.10) (Withdrawn on December 20, 2020) |
| 29.                 |                              | Wiring, Connection and                                              | IS 13252(Part 1): 2010 (Cl. 3.0 &                             |
| 30.                 |                              | Wiring, Connection and supply                                       | IEC 60950-1: 2005 (Cl. 3.0 & 3.1) (Withdrawn on December 20,  |

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113 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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Valid until: 28 April 2027

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| Electronics Testing |                              |                                                              |                                                                 |
|---------------------|------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                     | Test Method                                                     |
|                     | IT Equipment                 |                                                              |                                                                 |
|                     |                              |                                                              | 2020)                                                           |
| 31.                 |                              | Connection to a mains supply<br>Wiring connections & supply  | IS 13252(Part 1) Cl. 3.2: 2010 Cl. 3.2: 2005                    |
| 32.                 |                              | Connection to a mains supply<br>Wiring connections & supply  | IEC 60950-1 Cl. 3.2: 2005<br>(Withdrawn on December 20, 2020)   |
| 33.                 |                              | Wiring terminals for<br>connection of external               | IS 13252(Part 1): 2010 (Cl. 3.3)                                |
| 34.                 |                              | Wiring terminals for<br>connection of external<br>conductors | IEC 60950-1: 2005 (Cl. 3.3)<br>(Withdrawn on December 20, 2020) |
| 35.                 |                              | Disconnection from the mains<br>supply                       | IS 13252(Part 1): 2010 (Cl. 3.4)                                |
| 36.                 |                              | Disconnection from the mains<br>supply                       | IEC 60950-1: 2005 (Cl. 3.4)<br>(Withdrawn on December 20, 2020) |
| 37.                 |                              | Interconnection of equipment                                 | IS 13252(Part 1): 2010 (Cl. 3.5)                                |
| 38.                 |                              | Interconnection of equipment                                 | IEC 60950-1: 2005 (Cl. 3.5)<br>(Withdrawn on December 20, 2020) |
| 39.                 |                              | Physical Requirement Stability                               | IS 13252(Part 1): 2010 (Cl. 4.1)                                |





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Valid until: 28 April 2027

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| Electronics Testing |                              |                                           |                                                                        |
|---------------------|------------------------------|-------------------------------------------|------------------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                  | Test Method                                                            |
|                     | IT Equipment                 |                                           |                                                                        |
| 40.                 |                              | Physical Requirement Stability            | IEC 60950-1: 2005 (Cl. 4.1)<br>(Withdrawn on December 20, 2020)        |
| 41.                 |                              | Mechanical Strength                       | IS 13252(Part 1): 2010 (Cl. 4.2.1 to 4.2.7)                            |
| 42.                 |                              | Mechanical Strength                       | IEC 60950-1:2005 (Cl. 4.2.1 to 4.2.7) (Withdrawn on December 20, 2020) |
| 43.                 |                              | Design and Construction                   | IS 13252(Part 1): 2010 (Cl. 4.3)                                       |
| 44.                 |                              | Design and Construction                   | IEC 60950-1: 2005 (Cl. 4.3)<br>(Withdrawn on December 20, 2020)        |
| 45.                 |                              | Protection against hazardous moving parts | IS 13252(Part 1): 2010 (Cl. 4.4)                                       |
| 46.                 |                              | Protection against hazardous moving parts | IEC 60950-1: 2005 (Cl. 4.4)<br>(Withdrawn on December 20, 2020)        |
| 47.                 |                              | Thermal Requirements                      | IS 13252(Part 1): 2010 (Cl. 4.5)                                       |
| 48.                 |                              | Thermal Requirements                      | IEC 60950-1: 2005 (Cl. 4.5)<br>(Withdrawn on December 20, 2020)        |
| 49.                 |                              | Openings in enclosure                     | IS 13252(Part 1): 2010 (Cl. 4.6)                                       |



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Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electronics Testing |                              |                                                |                                                                 |
|---------------------|------------------------------|------------------------------------------------|-----------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                       | Test Method                                                     |
|                     | IT Equipment                 |                                                |                                                                 |
| 50.                 |                              | Openings in enclosure                          | IEC 60950-1: 2005 (Cl. 4.6)<br>(Withdrawn on December 20, 2020) |
| 51.                 |                              | Resistance to Fire                             | IS 13252(Part 1): 2010 (Cl. 4.7)                                |
| 52.                 |                              | Resistance to Fire                             | IEC 60950-1: 2005 (Cl. 4.7)<br>(Withdrawn on December 20, 2020) |
| 53.                 |                              | Touch Current and protective conductor current | IS 13252(Part 1): 2010 (Cl. 5.1)                                |
| 54.                 |                              | Touch Current and protective conductor current | IEC 60950-1: 2005 (Cl. 5.1)<br>(Withdrawn on December 20, 2020) |
| 55.                 |                              | Electric Strength                              | IS 13252(Part 1): 2010 (Cl. 5.2)                                |
| 56.                 |                              | Electric Strength                              | IEC 60950-1: 2005 (Cl. 5.2)<br>(Withdrawn on December 20, 2020) |
| 57.                 |                              | Abnormal operating and fault conditions        | IS 13252(Part 1): 2010 (Cl. 5.3)                                |
| 58.                 |                              | Abnormal operating and fault conditions        | IEC 60950-1: 2005 (Cl. 5.3)<br>(Withdrawn on December 20, 2020) |



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| Electronics Testing |                              |                                                                                                                                               |                                                                 |
|---------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                                                                                                      | Test Method                                                     |
|                     | IT Equipment                 |                                                                                                                                               |                                                                 |
| 59.                 |                              | Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment | IS 13252(Part 1): 2010 (Cl. 6.1)                                |
| 60.                 |                              | Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment | IEC 60950-1: 2005 (Cl. 6.1)<br>(Withdrawn on December 20, 2020) |
| 61.                 |                              | Protection of equipment users from over voltages on telecommunication Networks                                                                | IS 13252(Part 1): 2010 (Cl. 6.2)                                |
| 62.                 |                              | Protection of equipment users from over voltages on telecommunication Networks                                                                | IEC 60950-1: 2005 (Cl. 6.2)<br>(Withdrawn on December 20, 2020) |
| 63.                 |                              | Protection of the telecommunication wiring system from overheating                                                                            | IS 13252(Part 1): 2010 (Cl. 6.3)                                |



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## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electronics Testing |                              |                                                                                                                                                         |                                                                 |
|---------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                                                                                                                | Test Method                                                     |
|                     | IT Equipment                 |                                                                                                                                                         |                                                                 |
| 64.                 |                              | Protection of the telecommunication wiring system from overheating                                                                                      | IEC 60950-1: 2005 (Cl. 6.3)<br>(Withdrawn on December 20, 2020) |
| 65.                 |                              | Connection to Cable distribution systems (General)                                                                                                      | IS 13252(Part1) Cl. 7.1:2010                                    |
| 66.                 |                              | Connection to Cable distribution systems (General)                                                                                                      | IEC 60950-1 Cl.7.1:2005<br>(Withdrawn on December 20, 2020)     |
| 67.                 |                              | Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment | IS 13252(Part 1): 2010 (Cl. 7.2)                                |
| 68.                 |                              | Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment | IEC 60950-1: 2005 (Cl. 7.2)<br>(Withdrawn on December 20, 2020) |
| 69.                 |                              | Protection of equipment users from over voltages surge on the cable distribution system                                                                 | IS 13252(Part 1): 2010 (Cl. 7.3)                                |

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www.qai.org.in



118 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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Valid from: 29 April 2025

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| Electronics Testing |                              |                                                                                         |                                                                 |
|---------------------|------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                                                | Test Method                                                     |
|                     | IT Equipment                 |                                                                                         |                                                                 |
| 70.                 |                              | Protection of equipment users from over voltages surge on the cable distribution system | IEC 60950-12005 (Cl. 7.3)<br>(Withdrawn on December 20, 2020)   |
| 71.                 |                              | Insulation between primary circuits and cable distribution systems                      | IS 13252(Part 1): 2010 (Cl. 7.4)                                |
| 72.                 |                              | Insulation between primary circuits and cable distribution systems                      | IEC 60950-1: 2005 (Cl. 7.4)<br>(Withdrawn on December 20, 2020) |
| 73.                 |                              | Test for Resistance to heat and fire                                                    | IS 13252(Part 1) Annex A: 2010                                  |
| 74.                 |                              | Test for Resistance to heat and fire                                                    | IEC 60950-1 Annex A: 2005<br>(Withdrawn on December 20, 2020)   |
| 75.                 |                              | Motor tests under abnormal conditions                                                   | IS 13252(Part 1) Annex B: 2010                                  |
| 76.                 |                              | Motor tests under abnormal conditions                                                   | IEC 60950-1 Annex B: 2005<br>(Withdrawn on December 20, 2020)   |
| 77.                 |                              | Transformers                                                                            | IS 13252(Part 1) Annex C: 2010                                  |



# Quality And Accreditation Institute

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(formerly Centre for Laboratory Accreditation)



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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electronics Testing |                                                                                                            |                                                              |                                                                |
|---------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test                                                                               | Specific Tests Performed                                     | Test Method                                                    |
|                     | IT Equipment                                                                                               |                                                              |                                                                |
| 78.                 |                                                                                                            | Transformers                                                 | IEC 60950-1 Annex C: 2005<br>(Withdrawn on December 20, 2020)  |
| 79.                 |                                                                                                            | Requirement for the mounting means of rack-mounted equipment | IS 13252(Part 1) Annex DD: 2010                                |
| 80.                 | Mobile phone handsets: Part 3<br>Indian language support for mobile phone handsets - Specific requirements | Requirement for the mounting means of rack-mounted equipment | IEC 60950-1 Annex DD: 2005<br>(Withdrawn on December 20, 2020) |
| 81.                 |                                                                                                            | Marking                                                      | IS 16333 (Part: 3) 2022 Cl. 6                                  |
| 82.                 |                                                                                                            | Marking                                                      | IS 16350 2016 Cl. 6                                            |
| 83.                 |                                                                                                            | Inputting of text                                            | IS 16333 (Part: 3): 2022 Cl. 5.1                               |
| 84.                 |                                                                                                            | Inputting of text                                            | IS 16350: 2016                                                 |
| 85.                 |                                                                                                            | Messaging Readability                                        | IS 16333 (Part: 3): 2022 Cl. 5.2                               |
| 86.                 | Household and similar electrical appliances - Safety - Particular requirements for battery chargers        | Classification                                               | IEC 60335-2-29: 2016 Cl. 6                                     |
| 87.                 |                                                                                                            | Verification of Marking & Instructions                       | IEC 60335-2-29: 2016 Cl. 7                                     |
| 88.                 |                                                                                                            | Protection against access to live parts                      | IEC 60335-2-29: 2016 Cl. 8                                     |
| 89.                 |                                                                                                            | Power input and current                                      | IEC 60335-2-29: 2016 Cl. 10                                    |
| 90.                 |                                                                                                            | Heating                                                      | IEC 60335-2-29: 2016 Cl. 11                                    |





# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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Valid until: 28 April 2027

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| Electronics Testing |                              |                                                                |                             |
|---------------------|------------------------------|----------------------------------------------------------------|-----------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                       | Test Method                 |
|                     | IT Equipment                 |                                                                |                             |
| 91.                 |                              | Leakage current and electric strength at operating temperature | IEC 60335-2-29: 2016 Cl. 13 |
| 92.                 |                              | Transient overvoltage                                          | IEC 60335-2-29: 2016 Cl. 14 |
| 93.                 |                              | Moisture resistance                                            | IEC 60335-2-29: 2016 Cl. 15 |
| 94.                 |                              | Leakage current and electric strength                          | IEC 60335-2-29: 2016 Cl. 16 |
| 95.                 |                              | Overload protection of transformers and associated circuits    | IEC 60335-2-29: 2016 Cl. 17 |
| 96.                 |                              | Abnormal operations                                            | IEC 60335-2-29; 2016 Cl. 19 |
| 97.                 |                              | Stability and mechanical hazards                               | IEC 60335-2-29: 2016 Cl. 20 |
| 98.                 |                              | Mechanical Strength                                            | IEC 60335-2-29: 2016 Cl. 21 |
| 99.                 |                              | Construction                                                   | IEC 60335-2-29: 2016 Cl.22  |
| 100.                |                              | Internal Wiring                                                | IEC 60335-2-29: 2016 Cl.23  |
| 101.                |                              | Verification of Components                                     | IEC 60335-2-29: 2016 Cl. 24 |
| 102.                |                              | Supply connection and external flexible cords                  | IEC 60335-2-29: 2016 Cl. 25 |
| 103.                |                              | Terminals for external conductors                              | IEC 60335-2-29: 2016 Cl. 26 |
| 104.                |                              | Provision for Earthing                                         | IEC 60335-2-29: 2016 Cl. 27 |

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www.qai.org.in



121 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

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Valid until: 28 April 2027

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| Electronics Testing |                              |                                                     |                             |
|---------------------|------------------------------|-----------------------------------------------------|-----------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                            | Test Method                 |
|                     | IT Equipment                 |                                                     |                             |
| 105.                |                              | Screws and connections                              | IEC 60335-2-29: 2016 Cl. 28 |
| 106.                |                              | Clearances, Creepage distances and solid insulation | IEC 60335-2-29: 2016 Cl. 29 |
| 107.                |                              | Resistance to heat and fire                         | IEC 60335-2-29: 2016 Cl. 30 |
| 108.                |                              | Resistance to rusting                               | IEC 60335-2-29: 2016 Cl. 31 |
| 109.                |                              | Radiation, toxicity and similar hazards             | IEC 60335-2-29: 2016 Cl. 32 |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electronics Testing |                                                                                    |                                                                                                            |                                                       |
|---------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test                                                       | Specific Tests Performed                                                                                   | Test Method                                           |
|                     | Power Supplies and Stabilizers                                                     |                                                                                                            |                                                       |
| 1.                  | Uninterruptible Power Systems (UPS) Part 1 General and Safety Requirements for UPS | Components                                                                                                 | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 4.5    |
| 2.                  |                                                                                    | Power Interfaces                                                                                           | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 4.6    |
| 3.                  |                                                                                    | High leakage current                                                                                       | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 4.7.13 |
| 4.                  |                                                                                    | Durability of markings                                                                                     | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 4.7.16 |
| 5.                  |                                                                                    | Protection for UPS intended to be used in operator access areas                                            | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.1.1  |
| 6.                  |                                                                                    | Fundamental design requirements (Protection Against Electric Shock and Energy) (Access to Energized Parts) | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.1.2  |
| 7.                  |                                                                                    | Protection for UPS intended to be used in restricted access areas                                          | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.1.3  |
| 8.                  |                                                                                    | Back-Feed Protection                                                                                       | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.1.4  |
| 9.                  |                                                                                    | Safety Extra Low Voltage Circuits – SELV                                                                   | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.2.1  |
| 10.                 |                                                                                    | Telephone network voltage circuits – TNV                                                                   | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.2.2  |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electronics Testing |                                |                                                                 |                                                            |
|---------------------|--------------------------------|-----------------------------------------------------------------|------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test   | Specific Tests Performed                                        | Test Method                                                |
|                     | Power Supplies and Stabilizers |                                                                 |                                                            |
| 11.                 |                                | Limited Current Circuits                                        | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.2.3       |
| 12.                 |                                | External signalling circuits                                    | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.2.4       |
| 13.                 |                                | Limited Power Sources                                           | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.2.5       |
| 14.                 |                                | Protective earthing and bonding                                 | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.3         |
| 15.                 |                                | AC and DC power isolation                                       | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.4         |
| 16.                 |                                | Overcurrent and earth fault protection                          | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.5         |
| 17.                 |                                | Protection of personnel – Safety interlocks                     | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 5.6         |
| 18.                 |                                | Clearances, creepage distances and distances through insulation | IS 16242 (Part 1) Cl. 5.7: 2014/ IEC 62040-1 Cl. 5.7: 2017 |
| 19.                 |                                | General                                                         | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 6.1         |
| 20.                 |                                | Connection to power                                             | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 6.2         |
| 21.                 |                                | Wiring terminals for external power conductors                  | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 6.3         |



# Quality And Accreditation Institute

## Centre for International Accreditation

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Valid from: 29 April 2025

Valid until: 28 April 2027

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| Electronics Testing |                                |                                          |                                                      |
|---------------------|--------------------------------|------------------------------------------|------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test   | Specific Tests Performed                 | Test Method                                          |
|                     | Power Supplies and Stabilizers |                                          |                                                      |
| 22.                 |                                | Stability                                | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 7.2   |
| 23.                 |                                | Mechanical strength                      | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 7.3   |
| 24.                 |                                | Construction details                     | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 7.4   |
| 25.                 |                                | Construction details-Openings            | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 7.4.2 |
| 26.                 |                                | Resistance to fire                       | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 7.5   |
| 27.                 |                                | Battery location                         | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 7.6   |
| 28.                 |                                | Temperature rise                         | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 7.7   |
| 29.                 |                                | General provisions for earth leakage     | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 8.1   |
| 30.                 |                                | Electric strength                        | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 8.2   |
| 31.                 |                                | Abnormal operating and fault conditions  | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 8.3   |
| 32.                 |                                | Connection to telecommunication networks | IS 16242 (Part 1): 2014/ IEC 62040-1: 2017 Cl. 9     |



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electronics Testing |                                                                     |                                                                                 |                                       |
|---------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------|
| Sl. No.             | Product (S) Material of Test                                        | Specific Tests Performed                                                        | Test Method                           |
|                     | <b>Audio Video Equipment</b>                                        |                                                                                 |                                       |
| 1.                  | Audio, Video and Similar Electronic Apparatus - Safety Requirements | Marking and Instructions                                                        | IS 616: 2017 (Cl. 5)                  |
| 2.                  |                                                                     | Marking and Instructions                                                        | IEC 60065: 2014 (Cl. 5)<br>Withdrawn  |
| 3.                  |                                                                     | Heating Under Normal Operating Conditions                                       | IS 616: 2017 (Cl. 7)                  |
| 4.                  |                                                                     | Heating Under Normal Operating Conditions                                       | IEC 60065: 2014 (Cl. 7)<br>Withdrawn  |
| 5.                  |                                                                     | Constructional requirement with regard to the protection against electric shock | IS 616: 2017 (Cl. 8)                  |
| 6.                  |                                                                     | Constructional requirement with regard to the protection against electric shock | IEC 60065: 2014 (Cl. 8)<br>Withdrawn  |
| 7.                  |                                                                     | Electrical Shock Hazard Under Normal Operating Conditions                       | IS 616: 2017 (Cl. 9)                  |
| 8.                  |                                                                     | Electrical Shock Hazard Under Normal Operating Conditions                       | IEC 60065: 2014 (Cl. 9)<br>Withdrawn  |
| 9.                  |                                                                     | Insulation Requirements                                                         | IS 616: 2017 (Cl. 10)                 |
| 10.                 |                                                                     | Insulation Requirements                                                         | IEC 60065: 2014 (Cl. 10)<br>Withdrawn |
| 11.                 |                                                                     | Fault Conditions                                                                | IS 616: 2017 (Cl. 11)                 |

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126 of 135



# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

**IEC Test Labs LLP**

N-47, Sector-5, Bawana Industrial Area, DSIIDC, Bawana,  
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QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electronics Testing |                                                                 |                                               |                                       |
|---------------------|-----------------------------------------------------------------|-----------------------------------------------|---------------------------------------|
| Sl. No.             | Product (S) Material of Test                                    | Specific Tests Performed                      | Test Method                           |
|                     | Audio Video Equipment                                           |                                               |                                       |
| 12.                 |                                                                 | Fault Conditions                              | IEC 60065: 2014 (Cl. 11)<br>Withdrawn |
| 13.                 |                                                                 | Mechanical Strength                           | IS 616: 2017 (Cl. 12)                 |
| 14.                 |                                                                 | Mechanical Strength                           | IEC 60065: 2014 (Cl. 12)<br>Withdrawn |
| 15.                 |                                                                 | Clearances and Creepage Distances, Components | IS 616: 2017 (Cl. 13, Cl.14)          |
| 16.                 |                                                                 | Clearances and Creepage Distances, Components | IEC 60065: 2014 (Cl. 13)<br>Withdrawn |
| 17.                 |                                                                 | Components                                    | IS 616: 2017 (Cl.14)                  |
| 18.                 |                                                                 | Components                                    | IEC 60065: 2014 (Cl.14)<br>Withdrawn  |
| 19.                 |                                                                 | Terminals                                     | IS 616: 2017 (Cl. 15)                 |
| 20.                 |                                                                 | Terminals                                     | IEC 60065: 2014 (Cl. 15)<br>Withdrawn |
| 21.                 | Audio/Video, Information and Communication Technology Equipment | External flexible cords                       | IS 616: 2017 Cl. 16                   |
| 22.                 |                                                                 | External flexible cords                       | IEC 60065: 2014 Cl. 16<br>Withdrawn   |
| 23.                 |                                                                 | Electrical connections & mechanical fixing    | IS 616: 2017 (Cl. 17)                 |



# Quality And Accreditation Institute

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Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electronics Testing |                              |                                                        |                                                                                                                                                                                      |
|---------------------|------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                               | Test Method                                                                                                                                                                          |
|                     | Audio Video Equipment        |                                                        |                                                                                                                                                                                      |
| 24.                 |                              | Electrical connections & mechanical fixing             | IEC 60065: 2014 (Cl. 17)<br>Withdrawn                                                                                                                                                |
| 25.                 |                              | Stability & mechanical hazards                         | IS 616: 2017 (Cl. 19)                                                                                                                                                                |
| 26.                 |                              | Stability & mechanical hazards                         | IEC 60065: 2014 (Cl. 19)<br>Withdrawn                                                                                                                                                |
| 27.                 |                              | Resistance to fire                                     | IS 616: 2017 Cl. 20                                                                                                                                                                  |
| 28.                 |                              | Resistance to fire                                     | IEC 60065: 2014 Cl. 20<br>Withdrawn                                                                                                                                                  |
| 29.                 |                              | Apparatus to be connected to Telecommunication Network | IS 616 :2017 Annexure B                                                                                                                                                              |
| 30.                 |                              | Apparatus to be connected to Telecommunication Network | IEC 60065: 2014 Annexure B<br>Withdrawn                                                                                                                                              |
| 31.                 |                              | General requirements                                   | Cl.4, Cl.4.1, Cl.4.1.2, Cl.4.1.3, Cl.4.1.4, Cl.4.1.5, Cl.4.1.6, Cl.4.1.7, Cl.4.1.8, Cl.4.1.9, Cl.4.1.10, Cl.4.1.11, Cl.4.1.12, Cl.4.1.13, Cl.4.1.14, Cl.4.1.15, IS/IEC 62368-1: 2018 |
| 32.                 |                              | Energy source classifications                          | IS/IEC 62368-1: 2018 Cl.4.2, Cl.4.2.1, Cl.4.2.2, Cl.2.3, Cl.4.2.4                                                                                                                    |
| 33.                 |                              | Protection against energy sources                      | IS/IEC 62368-1: 2018 Cl.4.3,                                                                                                                                                         |

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www.qai.org.in



128 of 135

# Quality And Accreditation Institute

## Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)



### Scope of Accreditation

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|---------------------|------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                          | Test Method                                                                          |
|                     | Audio Video Equipment        |                                                                   |                                                                                      |
|                     |                              |                                                                   | Cl.4.3.1, Cl.4.3.2, Cl.4.3.3,<br>Cl.4.3.4, Cl.4.3.5                                  |
| 34.                 |                              | Safeguards                                                        | IS/IEC 62368-1: 2018 Cl.4.4,<br>Cl.4.4.1, Cl.4.4.2, Cl.4.4.3,<br>Cl.4.4.4, Cl.4.4.5  |
| 35.                 |                              | Explosion                                                         | IS/IEC 62368-1: 2018 Cl.4.5,<br>Cl.4.5.1, Cl.4.5.2,                                  |
| 36.                 |                              | Fixing of conductors                                              | IS/IEC 62368-1: 2018 Cl.4.6,<br>Cl.4.6.1, Cl.4.6.2,                                  |
| 37.                 |                              | Equipment for direct insertion into<br>mains socket-outlets       | IS/IEC 62368-1: 2018 Cl.4.7,<br>Cl.4.7.1, Cl.4.7.2, Cl.4.7.3,                        |
| 38.                 |                              | Equipment containing coin / button<br>cell batteries              | IS/IEC 62368-1: 2018 Cl.4.8,<br>Cl.4.8.1, Cl.4.8.2, Cl.4.8.3,<br>Cl.4.8.4, Cl.4.8.5, |
| 39.                 |                              | Likelihood of fire or shock due to<br>entry of conductive objects | IS/IEC 62368-1: 2018 Cl.4.9                                                          |
| 40.                 |                              | Components requirements                                           | IS/IEC 62368-1: 2018 Cl.4.10,<br>Cl.4.10.1, Cl.4.10.2                                |
| 41.                 |                              | Electrically-caused injury, General                               | IS/IEC 62368-1: 2018 Cl.5, Cl.5.1                                                    |
| 42.                 |                              | Classification and limits of electrical<br>energy sources         | IS/IEC 62368-1: 2018 Cl.5.2,<br>Cl.5.2.1, Cl.5.2.2,                                  |
| 43.                 |                              | Protection against electrical energy<br>sources                   | IS/IEC 62368-1: 2018 Cl.5.3,<br>Cl.5.3.1, Cl.5.3.2                                   |



# Quality And Accreditation Institute

## Centre for International Accreditation

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Valid from: 29 April 2025

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|---------------------|------------------------------|--------------------------------------------------------------------|--------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                           | Test Method                    |
|                     | Audio Video Equipment        |                                                                    |                                |
| 44.                 |                              | Insulation materials and requirements                              | IS/IEC 62368-1: 2018 Cl.5.4    |
| 45.                 |                              | General                                                            | IS/IEC 62368-1: 2018 Cl.5.4.1  |
| 46.                 |                              | Clearances                                                         | IS/IEC 62368-1: 2018 Cl.5.4.2  |
| 47.                 |                              | Creepage distances                                                 | IS/IEC 62368-1: 2018 Cl.5.4.3  |
| 48.                 |                              | Solid insulation                                                   | IS/IEC 62368-1: 2018 Cl.5.4.4  |
| 49.                 |                              | Antenna terminal insulation                                        | IS/IEC 62368-1: 2018 Cl.5.4.5  |
| 50.                 |                              | Insulation of internal wire as a part of a supplementary safeguard | IS/IEC 62368-1: 2018 Cl.5.4.6  |
| 51.                 |                              | Tests for semiconductor components and for cemented joints         | IS/IEC 62368-1: 2018 Cl.5.4.7  |
| 52.                 |                              | Humidity conditioning                                              | IS/IEC 62368-1: 2018 Cl.5.4.8  |
| 53.                 |                              | Electric strength test                                             | IS/IEC 62368-1: 2018 Cl.5.4.9  |
| 54.                 |                              | Safeguards against transient voltages from external circuits       | IS/IEC 62368-1: 2018 Cl.5.4.10 |
| 55.                 |                              | Separation between external circuits and earth                     | IS/IEC 62368-1: 2018 Cl.5.4.11 |
| 56.                 |                              | Insulating liquid                                                  | IS/IEC 62368-1: 2018 Cl.5.4.12 |
| 57.                 |                              | Components as safeguards                                           | IS/IEC 62368-1: 2018 Cl.5.5    |



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### Scope of Accreditation

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Delhi- 110039, India

QAI/CIA/TL/2023/0009

Valid from: 29 April 2025

Valid until: 28 April 2027

Accreditation Standard: ISO/IEC 17025:2017

| Electronics Testing |                              |                                                                   |                               |
|---------------------|------------------------------|-------------------------------------------------------------------|-------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                          | Test Method                   |
|                     | Audio Video Equipment        |                                                                   |                               |
| 58.                 |                              | Protective conductor                                              | IS/IEC 62368-1: 2018 Cl.5.6   |
| 59.                 |                              | General                                                           | IS/IEC 62368-1: 2018 Cl.5.6.1 |
| 60.                 |                              | Requirements for protective conductors                            | IS/IEC 62368-1: 2018 Cl.5.6.2 |
| 61.                 |                              | Requirements for protective earthing conductors                   | IS/IEC 62368-1: 2018 Cl.5.6.3 |
| 62.                 |                              | Requirements for protective bonding conductors                    | IS/IEC 62368-1: 2018 Cl.5.6.4 |
| 63.                 |                              | Terminals for protective conductors                               | IS/IEC 62368-1: 2018 Cl.5.6.5 |
| 64.                 |                              | Resistance of the protective bonding system                       | IS/IEC 62368-1: 2018 Cl.5.6.6 |
| 65.                 |                              | Reliable connection of a protective earthing conductor            | IS/IEC 62368-1: 2018 Cl.5.6.7 |
| 66.                 |                              | Functional earthing                                               | IS/IEC 62368-1: 2018 Cl.5.6.8 |
| 67.                 |                              | Prospective touch voltage, touch current and protective conductor | IS/IEC 62368-1: 2018 Cl.5.7   |
| 68.                 |                              | General                                                           | IS/IEC 62368-1: 2018 Cl.5.7.1 |
| 69.                 |                              | Measuring devices and networks                                    | IS/IEC 62368-1: 2018 Cl.5.7.2 |
| 70.                 |                              | Equipment set-up, supply connections and earth connections        | IS/IEC 62368-1: 2018 Cl.5.7.3 |



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|---------------------|------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                                                    | Test Method                                           |
|                     | Audio Video Equipment        |                                                                                             |                                                       |
| 71.                 |                              | Unearthed accessible parts                                                                  | IS/IEC 62368-1: 2018 Cl.5.7.4<br>Cl.5.7.4, Cl.5.7.4   |
| 72.                 |                              | Earthed accessible conductive parts                                                         | IS/IEC 62368-1: 2018 Cl.5.7.5                         |
| 73.                 |                              | Requirements when touch current exceeds ES2 limits                                          | IS/IEC 62368-1: 2018 Cl.5.7.6                         |
| 74.                 |                              | Prospective touch voltage and touch current associated with                                 | IS/IEC 62368-1: 2018 Cl.5.7.7<br>IS/IEC 62368-1: 2018 |
| 75.                 |                              | Summation of touch currents from external circuits                                          | IS/IEC 62368-1: 2018 Cl.5.7.8                         |
| 76.                 |                              | Backfeed safeguard in battery backed up supplies                                            | IS/IEC 62368-1: 2018 Cl.5.8                           |
| 77.                 |                              | Electrically-caused fire                                                                    | IS/IEC 62368-1: 2018 Cl.6                             |
| 78.                 |                              | General                                                                                     | IS/IEC 62368-1: 2018 Cl.6.1                           |
| 79.                 |                              | Classification of power sources (PS) and potential ignition sources (PIS)                   | IS/IEC 62368-1: 2018 Cl.6.2                           |
| 80.                 |                              | Safeguards against fire under normal operating conditions and abnormal operating conditions | IS/IEC 62368-1: 2018 Cl.6.3                           |
| 81.                 |                              | Safeguards against fire under single fault conditions                                       | IS/IEC 62368-1: 2018 Cl.6.4                           |





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| Electronics Testing |                              |                                                                       |                                                                                                                              |
|---------------------|------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                              | Test Method                                                                                                                  |
|                     | Audio Video Equipment        |                                                                       |                                                                                                                              |
| 82.                 |                              | Internal and external wiring                                          | IS/IEC 62368-1: 2018 Cl.6.5                                                                                                  |
| 83.                 |                              | Safeguards against fire due to the connection of additional equipment | IS/IEC 62368-1: 2018 Cl.6.6                                                                                                  |
| 84.                 |                              | Injury caused by hazardous substances                                 | IS/IEC 62368-1: 2018 Cl.7, Cl.7.1, Cl.7.2, Cl.7.3, Cl.7.4, Cl.7.5, Cl.7.6                                                    |
| 85.                 |                              | Mechanically-caused injury                                            | IS/IEC 62368-1: 2018 Cl.8, Cl.8.1, Cl.8.2, Cl.8.3, Cl.8.4, Cl.8.5, Cl.8.6, Cl.8.7, Cl.8.8, Cl.8.9, Cl.8.10, Cl.8.11, Cl.8.12 |
| 86.                 |                              | Thermal burn injury                                                   | IS/IEC 62368-1: 2018 Cl.9                                                                                                    |
| 87.                 |                              | General                                                               | IS/IEC 62368-1: 2018 Cl.9.1                                                                                                  |
| 88.                 |                              | Thermal energy source classifications                                 | IS/IEC 62368-1: 2018 Cl.9.2                                                                                                  |
| 89.                 |                              | Touch temperature limits                                              | IS/IEC 62368-1: 2018 Cl.9.3                                                                                                  |
| 90.                 |                              | Safeguards against thermal energy sources                             | IS/IEC 62368-1: 2018 Cl.9.4                                                                                                  |
| 91.                 |                              | Requirements for safeguards                                           | IS/IEC 62368-1: 2018 Cl.9.5                                                                                                  |



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| Electronics Testing |                              |                                                                |                              |
|---------------------|------------------------------|----------------------------------------------------------------|------------------------------|
| Sl. No.             | Product (S) Material of Test | Specific Tests Performed                                       | Test Method                  |
|                     | Audio Video Equipment        |                                                                |                              |
| 92.                 |                              | Normal operating condition tests, abnormal operating condition | IS/IEC 62368-1: 2018 Annex B |
| 93.                 |                              | Equipment markings, instructions, and instructional safeguards | IS/IEC 62368-1: 2018 Annex F |
| 94.                 |                              | Components                                                     | IS/IEC 62368-1: 2018 Annex G |
| 95.                 |                              | Equipment containing batteries and their protection circuits   | IS/IEC 62368-1: 2018 Annex M |
| 96.                 |                              | Measurement of creepage distances and clearances               | IS/IEC 62368-1: 2018 Annex O |
| 97.                 |                              | Tests for resistance to heat and fire                          | IS/IEC 62368-1: 2018 Annex S |
| 98.                 |                              | Mechanical strength tests                                      | IS/IEC 62368-1: 2018 Annex T |
| 99.                 |                              | Determination of accessible parts                              | IS/IEC 62368-1: 2018 Annex V |



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| Sl. No. | Product (S) Material of Test                                          | Specific Tests Performed                       | Test Method                                                 |
|---------|-----------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------|
|         | Light Sources (Electric Lamp)                                         |                                                |                                                             |
| 1.      | Solid State Lighting (LED)<br>Product Modules for General<br>Lighting | Electrical Instrumentation                     | Cl. 8 IES LM-79 -08 & Cl. 10 IS<br>16106: 2012              |
| 2.      |                                                                       | Total Luminous Flux<br>Measurement             | Cl. 9 IES LM-79 -08 & Cl. 11 of IS<br>16106: 2012           |
| 3.      |                                                                       | Luminous Efficacy                              | Cl. 11 IES LM-79-08 & Cl. 13 of IS<br>16106: 2012           |
| 4.      |                                                                       | Color Characteristics                          | Cl 12 IES LM-79-08 & Cl.14 of IS<br>16106: 2012             |
| 5.      | Electrical, electronic and other<br>items                             | Ra (color rendering index)<br>measurement test | Clause No. 8 (xii)<br>RDSO/PE/SPEC/TL/0091-2016<br>(REV-1)  |
| 6.      |                                                                       | Lux measurement                                | Clause No. 8 (xiii)<br>RDSO/PE/SPEC/TL/0091-2016<br>(REV-1) |

