

NECTAR BUSINESS ADVISORS

Your Handholding Partner in Certification

GUIDANCE HANDBOOK BIS Certification of PVC Insulated Cables *as per IS 694:2010*

Technical Compliance | Testing | Certification Assistance

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About Nectar Business Advisors (NBA)

Nectar Business Advisors (NBA) provides professional consultancy services for BIS certification covering regulatory compliance, testing coordination, technical documentation, and inspection support for manufacturers and importers.

NBA offers complete end-to-end consultancy support to simplify the certification process while ensuring compliance with BIS requirements and applicable Indian Standards.

Introduction to BIS Certification

The Bureau of Indian Standards (BIS) is the National Standards Body of India responsible for Standardization, Product Certification, and Quality Assurance. Many Ministries and regulators in India use the BIS Act to notify mandatory compliance to Indian Standards for products under their respective domains.

Typical examples include:

- Electronics Goods under Ministry of Electronics and IT (MeitY)
- Solar Products under Ministry of New and Renewable Energy Sources (MNRE)
- Chemicals by Department of Chemicals and Petrochemicals
- Cotton Bales by Ministry of Textiles
- Electrical Appliances and Various Tools by Department for Promotion of Industry and Internal Trade

Scope of Indian Standard IS 694:2010

Title: *PVC Insulated Unsheathed and Sheathed Cables/Cords for Rated Voltages up to and including 1100 V (for domestic, commercial, and industrial electrical wiring applications)*

Products Covered

Products covered under IS 694:2010 may be classified based on conductor material, conductor type, insulation type, sheath type, number of cores, and cable category. The following variants are covered:

Classification Basis	Variants
Conductor Material	Copper / Aluminium
Conductor Type	Class 1 / Class 2 / Class 5
Insulation Type	Type A / Type C / Type D
Sheath Type	ST1 / ST2 / ST3
Number of Cores	Single Core / Multi Core
Category	01 / 02 / FR / FRLSH

Both rigid and flexible conductors may be used according to product requirements.

Important Tests as per IS 694

S.No.	Test Name	Purpose
1	Conductor Resistance Test	Verification of conductor conductivity
2	High Voltage Test	Electrical safety quality verification
3	Insulation Resistance Test	Insulation quality check
4	Flammability Test	Fire resistance verification
5	Heat Shock Test	Thermal resistance check
6	Tensile Strength Test	Mechanical strength verification
7	Elongation Test	Flexibility check
8	Hot Deformation Test	Performance under heat

Process of BIS Certification

Certification (ISI Mark Licensing)

Certification is a process through which BIS verifies that a product complies with the applicable Indian Standard. Depending upon the Certification Scheme, it may involve product testing and factory assessment. Post-certification, surveillance may be required for both factory manufacturing processes and product testing.

Registration (CRS Mark Registration)

Registration is a process through which BIS grants approval based on successful product testing and the manufacturer's declaration of conformity. It is generally simpler than certification and is applicable to products covered under the Compulsory Registration Scheme (CRS).

BIS Certification Schemes

Scheme	Certification Type	Applicable Mark	Options	Key Features
Scheme-I (Licensing) ISI Mark – Domestic	Third-Party Certification (Type 5): Product testing, factory assessment & surveillance	ISI Mark	Option 1	New products; centralised at BIS HQ. Application → Factory Inspection → Sample sealing → Testing at designated labs → ISI Mark
			Option 2	Regular products; decentralised at BIS Branch level. Apply with test report from recognised lab → Licence granted → Factory Inspection

Scheme	Certification Type	Applicable Mark	Options	Key Features
FMCS ISI Mark – Foreign Manufacturers	Third-Party Certification for Foreign Manufacturers (Type 5)	ISI Mark	Option 1 only	Certification of foreign units; only Option 1 of Scheme-I is available
Scheme-II (CRS) Foreign & Domestic	Registration based on Self-Declaration	CRS Mark	No Options	Testing at BIS recognised labs + self-declaration of conformity → Registration

Testing and Certification

Applicable Certification Scheme

PVC Cables under IS 694 fall under the Licensing Scheme of BIS. Scheme 1 Option 2 is available to Indian manufacturers, whereas overseas manufacturers must avail Option 1 only of Scheme 1. Domestic manufacturers may also choose Scheme 1 Option 1.

Sample Selection – Number of Samples and Series Guidelines

The number of samples required depends on the varieties, sizes, conductor types, insulation types, sheath types, and cable categories proposed to be covered under the licence. Manufacturers are required to declare:

- Conductor material (Copper / Aluminium)
- Number of cores (Single Core / Multi Core)
- Conductor type (Class 1, Class 2, Class 5)
- Insulation type (Type A, Type C, Type D)
- Sheath type (ST1, ST2, ST3)
- Cable category (01, 02, FR, FR-LSH)

A 25-metre sample of each size/type needs to be submitted for testing. To optimise testing requirements, BIS has issued grouping guidelines under which testing of a representative variety may allow coverage of additional related varieties. The link to access the product manual from the BIS Website is as follows:

https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/ManageProductManuals/ManageManuals

BIS Recognised Test Laboratories

Manufacturers applying for BIS certification under IS 694 are required to get testing done at BIS recognised labs. A representative list of competent labs is provided below: The link to access BIS recognised labs is as follows:

https://lms.bis.gov.in/home/search_is_number/

S.No.	Laboratory Name
1	Bharti Automation Pvt. Ltd. (A Testing Division), Gurugram

S.No.	Laboratory Name
2	CIMEC Infralabs Private Limited
3	AJEO Testing Labs Pvt Ltd, Ghaziabad
4	Ghaziabad Testing Laboratories Pvt Ltd, Ghaziabad
5	Atmy Analytical Labs Private Limited (Unit-2), Greater Noida
6	Alpha Test House Private Limited, Delhi
7	Delhi Test House (65) Kundli-2, Sonipat
8	Aadhar Testing Solutions LLP, Ghaziabad
9	Global Testing Laboratory Private Limited, Ghaziabad
10	Aaditech Test and Calibration Lab LLP
11	Akshat Test Lab & Calibration Services, Ghaziabad
12	Alaipuria Test House Private Limited, Ghaziabad
13	RTRC Limited, Gurugram
14	Bharat Test House Pvt Ltd 1474, Sonipat, Haryana
15	Pioneer Testing Laboratory Private Limited
16	Spectro Analytical Labs Private Limited, Gautam Buddha Nagar
17	Indian Testing Laboratory Private Limited, Greater Noida
18	Atharva Laboratories Pvt. Ltd. (D115A), Noida
19	Stellar Test House, Noida
20	ADS Labtech, Ghaziabad
21	Poweronic Test & Research Centre Private Limited, Greater Noida
22	KC India Test Laboratories LLP, Ghaziabad

Factory Assessment

Quality System Requirements

Manufacturers are required to maintain proper quality control systems **in their premises** and **carryout** routine monitoring **activities** to ensure consistent product quality. Manufacturers should maintain:

- Incoming, In-Process, and Finished Goods Quality Control
- In-house testing facilities with calibrated equipment
- Quality Control Records
- Records of Routine Testing
- A Designated Quality **Officer** **Control Incharge/Manager**

Testing Equipment Required at Manufacturing Facility

Major test equipment required to ensure quality of product is detailed below:

S.No.	Tests (Clause Reference)	Test Equipment / Chemical
1	Measurement of Thickness & Outer Diameter; Wire Diameter; Flammability; Elongation; Hot Deformation (Cl. 4, 5.3, 8.3, 9, 10.4, 17.1.1)	Vernier Callipers, Steel Scale, Micrometre, Magnifying Glass
2	Tensile Strength, Elongation, Annealing, Thermal Stability (Cl. 10)	Tensile Testing Machine, Dumb-bell Cutting Machine, Hot Air Oven, Thermal Ageing Oven, Air Flow Meter & Hour Meter
3	Water Immersion A.C. & D.C. Test, Insulation Resistance Volume Resistivity (Cl. 10.1, 10.2)	Water Bath with Thermostatic Temperature Controller, Stirrer & Hour Meter
4	Heat Shock, Cold Bend, Cold Impact, Hot Deformation (Cl. 10)	Hot Air Oven, Heat Shock Mandrels, Low Temperature Impact Apparatus, Hot Pressure Test Apparatus
5	Loss of Mass, Thermal Stability, Persulphate, Flammability (Cl. 4, 10, 17.1.1)	Test Apparatus with Weights
6	Conductor Resistance Test (Cl. 10)	Kelvin Double Bridge with Galvanometer DC Source
7	Flammability Test (Cl. 10.4)	Flammability Test Apparatus with Burner, Gas Cylinder, Scale, Stopwatch, 0.71 mm Copper Wire
8	Spark Testing (Cl. 10.3)	Spark Tester
9	D.C. / A.C. High Voltage Test (Cl. 10.1, 10.2)	High Voltage Tester
10	Oxygen Index and Temperature Index Test (Cl. 10)*	Oxygen Index Test Apparatus, Oxygen & Nitrogen Gas
11	Halogen Acid Gas Evolution Testing (Cl. 10)*	Tube Furnace, Quartz Combustion Tube, Porcelain Combustion Boat, Wash Bottles, Air Flow Meter, Reagents
12	Smoke Density Rating Test (Cl. 10)*	Smoke Density Test Apparatus

* - For FR / FR-LSH Cables

Application Process

BIS has automated its process for manufacturers to apply for BIS Certification Marks licence. The certification process generally includes the following steps:

- BIS Application filing (through Manakonline for Domestic Manufacturers / Foreign Manufacturers)
- Appointment of Authorised Indian Representative (only for overseas manufacturers)
- Submission of Charges (including travel, stay, and BIS fee)
- Factory Inspection
- Sample transportation to test labs
- Product testing at designated labs (For domestic, compliance of product against a standard is to be established first before applying for licence)
- Grant of Licence based on payment of Licence Fee, signing of Agreement, and deposit of Bank Guarantee
- Marking fees and Annual Report filing with BIS on production data
- Follow-up activities including Surveillance and Market Surveillance

Major list of documents Required for BIS Certification

S.No.	Document Name
1	Factory Registration / Business Licence
2	Manufacturing Flow Chart
3	List of Manufacturing Machinery
4	List of Testing Equipment
5	Calibration Certification of Testing Equipment
6	Raw Material Details
7	Product Specification Details
8	Quality Control Documents
9	In-house Test Reports
10	Layout Plan of Manufacturing Unit
11	Details of Technical and Quality Control Personnel
12	Product Marking Details
13	Packaging Details
14	BIS Application Form
15	Test Reports from BIS Recognised Laboratory

Estimated Certification Timeline

Applicant Type	Estimated Timeline
Domestic Applicants	Approximately 30 – 90 working days (subject to successful completion of testing, inspection, and compliance requirements)
Overseas Applicants	Approximately 90 – 180 working days (subject to successful completion of testing, inspection, and compliance requirements)

Marking and Labelling Requirements

BIS Certification Marking (ISI Mark Scheme)

Certified products shall carry the following markings on every metre of running length of the cable:

- ISI Mark (Standard Mark)
- Applicable Indian Standard Number
- BIS Licence Number (CM/L Number)

Product Labelling

Manufacturers shall ensure that appropriate labels are provided on cable packaging, reels, drums, or coils. Labels may include the following information:

- Manufacturer's name, brand name, or trademark
- Product description and cable type
- Voltage grade
- Number of cores and conductor size
- Length of cable supplied
- Batch number or identification code for traceability
- Year of manufacture
- Country of origin, where applicable
- Handling and storage instructions, where required

Post Licensing

Ongoing Compliance

After the grant of a BIS licence, the license is required to continuously comply with the requirements of IS 694, the Scheme of Inspection and Testing (SIT), and the conditions of licence. The manufacturer shall maintain production and quality control systems to ensure that all products bearing the Standard Mark continue to conform to the applicable Indian Standard.

Surveillance

Post-certification surveillance includes periodic factory visits and market surveillance by BIS to verify continued compliance with IS 694 and applicable marking requirements.

Renewal of Licence

BIS licences are granted for a specified validity period and must be renewed before expiry. For renewal, the manufacturer is required to:

- Submit the renewal application within the prescribed timeline
- Demonstrate continued compliance with IS 694 requirements
- Maintain satisfactory surveillance records and test results
- Pay the applicable renewal fees

Upon successful review of the renewal application and compliance status, BIS **may** renew the licence for the applicable period as per the prevailing certification guidelines.

How NBA Can Assist You

Nectar Business Advisors (NBA) provides end-to-end support throughout the BIS certification journey for IS 694 cables, helping manufacturers achieve compliance efficiently and minimise certification timelines.

Pre-Application Process

- Identifying applicable Indian Standard
- Identifying the optimum BIS Certification Scheme
- Organising the list of documents required for certification application

- Arranging for Authorised Indian Representative (AIR) for overseas manufacturers

Certification Planning

- Defining the certification scope and product coverage
- Helping with grouping guidelines for preparation of samples
- Organising applicable standards, guidelines, and regulatory requirements

Documentation Support

- Review of application documents
- Verification of technical documentation
- Assistance in listing mandatory records and declarations

Sample Planning and Testing

- Sample handling in India
- Coordination with Customs, Clearing Agencies, and BIS-recognised laboratories
- Submission for testing and coordination of documentation requirements
- Support in interpretation of test requirements and reports

Factory Assessment Preparation

- Gap assessment of manufacturing and testing facilities
- Review of quality control processes and records
- Readiness support for BIS factory inspections

Application Management

- Assistance in application filing
- Follow-up with BIS during the certification process
- Response support for technical queries and observations

Post-Licensing Support

- Guidance on marking and labelling requirements
- Support for surveillance compliance
- Assistance with licence maintenance and renewal activities
- Updates on regulatory changes and BIS requirements

Contact Us

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