



# Tiscon Testing & Research Institute

( NABL Accredited Laboratory )

Survey No. 199, Plot No. 12/13/14, Jotiba Nagar, Talawade, Pune- 412 114 Maharashtra, India

Mob. No. +91 8600294927 / 9902173436

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## Introduction

TisCon Testing & Research Institute (TTRI) is in the business namely Testing, Evaluation services & Expert consultation services.

During designing & development of products as well as manufacturing and testing of products are utmost importance & these testing facilities are highly essential with this view in the mind TTRI have been established at Pune.

This is Asia's first dedicated third party laboratory to test High Temperature Low Sag (HTLS) conductor and its accessories.

This Testing facilities will provide testing services for HTLS conductor and it's accessories along with insulator metal fittings up to 400kv level as per IS, IEC, ASTM, BSEN and various other nation and international standards.

We are pleased to state that we can able to do the testing of various products in the various industries like Power Sector (Transmission & Distribution), Defence sector, Railway and Automotive industries.

## OUR VISION

"To save foreign exchange, by providing indigenous testing facilities"

Our vision is to provide the quality testing facilities to the customers to their best satisfactions and confidence globally. To reduce turnaround time, testing of samples shall be completed in the given time frame

## OUR MISSION

We are committed to provide accurate & reliable test results to its customers using good professional practices & strict implementation of quality system as per ISO/ IEC 17025:2017. The officers and staff of the laboratory maintain effective & efficient quality program planned & developed in conjunction with other managerial functions.

All personnel concerned with testing activities within the laboratory familiarize themselves with the quality documentation and implement the policies and procedures in their work. The laboratory's management is committed to comply with ISO/IEC 17025:2017 requirements and also for continual improvement and effectiveness of the management system related to quality.

## Our Services

- **Mechanical & Electrical Testing of various transmission & distribution products.**
- **Product certification as per CE, EU, EN & BIS.**
- **Metro/Railway Inspection services.**
- **Technical Consultancy for EPC & Turnkey Projects.**
- **Project testing as per QAP.**
- **Research, Design & development services.**
- **Third Party Inspection services**



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## Testing Services

### 1. High Temperature Low Sag (HTLS) Conductor

[As per Draft of IEEE standard P####/D1.0, January 2009, CIGRE report No. 426 on "guide for Qualifying High Temperature Conductor for use on Overhead Transmission Lines", Power Grid specification II]

- Ultimate tensile strength
- Stress strain test at controlled temperature
- Stress Strain test at elevated temperature (Max. up to 400 °C)
- Temperature cycle test at elevated temperature (Up to 400 °C)
- Coefficient of linear expansion for core (Max. up to 400 °C)
- Creep test at controlled temperature
- Creep test at elevated temperature (Max. up to 400 °C)
- Torsion ductility test on complete conductor
- Radial crush test
- Heat Resistance test on Aluminum Alloy wire
- Compression test
- Bending test on composite core
- Electrical Resistance test
- Brittle fracture test on composite core
- Aeolian vibration test
- Ampacity Test
- Salt spray test
- Glass Transition Temperature Test (At partner end)
- Flexural Strength Test (Currently at partner end)

### 2. AA, AAAC, Al-59 Conductors [IS-398 Part-1, IS-398 Part-4, IS-398 Part-2, IS-398 Part-5, IEC-1089]

- Measurement of diameter of individual Aluminium wires and galvanized Steel wires
- Breaking load test for individual strand
- Torsion Test
- Elongation Test
- Wrapping test
- Electrical Resistance test
- Galvanizing test
- Measurement of lay ratio/ Direction of lay
- Breaking load (UTS) of complete conductor
- Surface condition
- Stress strain test on conductor & Steel Core

### 3. Copper Conductors [IS-1897, IS-13730, IS-613, IS-191]

- Freedom from defects
- Maximum overall dimensions (covered size)



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- Tolerance on conductor dimensions
- Tensile strength
- Elongation test
- Chemical analysis
- Electrical Resistance test

#### 4. Transmission Line Products [IS-2486 Part 1, IEC-61284, IS-2629, IS 2121]

- Visual examination
- Verification of Dimension
- Slip strength test
- Mechanical strength test
- Breaking load test
- Galvanizing test
- Chemical analysis
- Electrical Resistance test
- Heat Cycle test
- Magnetic Power loss test

#### 5. Vibration damper [IS-9708, IEC-61897]

- Visual examination
- Dimensional checking
- Resonance frequency test
- Dynamic characteristics test
- Damper efficiency test
- Clamp slip test (Before Fatigue test)
- Fatigue test (up to 10 million cycle)
- Clamp Bolt Torque
- Mass pull off test
- Magnetic Power loss test
- Galvanizing test (Uniformity of Zinc coating)

#### 6. Insulator [IS: 731, IEC:61109]

- Visual examination
- Dimensional check
- Mechanical tests
- Specified mechanical load test
- Assembled core load time test
- Damage limit proof test
- Bend test
- Brittle fracture test
- Dye penetration test
- Galvanizing test



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## **7. Anchoring & Suspension clamp (Accessories) for aerial bundle cable**

[NF C 33-40, NF C 33-41, EN 50483]

- Visual examination EN 50483& dimension verification
- Tensile test
- Slip test
- Voltage test
- Endurance test
- Dynamic test
- Climatic ageing test
- Corrosion ageing test

## **8. Tension & Suspension clamp (Accessories) for Covered cable**

[EN 50397 Part 1 to 5, EN 50483]

- Visual examination & dimension verification
- Damage & failure load test
- Slip test at ambient temperature for suspension clamps
- Slip test at low temperature for suspension clamps
- Slip test at high temperature for suspension clamps
- Lift load and side load test for suspension clamp at ambient temperature
- Thermal test for suspension clamps
- Tensile test at ambient temperature for tensile clamps
- Tensile test at low temperature for tensile clamps
- Tensile test at high temperature for tensile clamps
- Clamp bolt tightening test
- Electrical ageing test on connectors
- Climatic ageing test
- Corrosion ageing test

## **9. Power Connectors [ IS 5561 & IEC 61284]**

- Visual examination
- Verification of Dimension
- Tensile test
- Galvanizing test
- Chemical analysis
- Electrical Resistance test
- Temperature rise test
- Heat Cycle test

We also take the various Products & Material testing as per the various standards.