

COMPONENT TEST LAB (CTL)



Introduction

The Component Test Lab (CTL), backed by over 20 years of experience, has a state-of-the-art test facility for testing, certification, and validation of automotive components as per national (AIS/IS), international (EEC/ECE/SAE/FMVSS/ISO/GSO, etc.) & OEM standards.

This laboratory supports Whole Vehicle Type Approvals in terms of their safety-critical components Type Approval (TACs), Conformity of Production (CoP), and Developmental testing.

The lab also offers Design & Product Validation assessments for structural integrity, environmental durability, and performance & functional requirements of automotive and non-automotive components as per component manufacturer and OEM-specific requirements.

INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY



Capabilities

- ❖ Testing & Certification of all Safety Critical components, i.e., Safety Glass, Wheel Rims, Hydraulic Brake Hose, Rear View Mirrors, Fuel Tanks (Metallic & Plastic), Door retention Components, Safety Belts, Seats, Wiper Blades, Washer Tanks, Hydraulic Brake Fluid, Antifreeze coolants, Window Frame etc.
- ❖ Vehicle level testing of Pillion Handholds (2 & 3W), Anti-theft device (2,3,4W & Buses), Stands fitted in 2-wheelers, Interior fittings, Seat & Safety Belt Anchorages.
- ❖ Combined Vibration & Environmental Test System [Vibration Shaker capacity: up to 6000kgf; Chamber size: up to 2.5m X 2.5m]
- ❖ Cyclic Temperature & Humidity Chamber [Range: -40°C to 180°C]
- ❖ Weather-O-Meter (02 Nos.) [Lamp: Xenon Arc]
- ❖ Test Facility for Fuel Tanks [Plastic, AdBlue tanks, Auxiliary Tanks]
- ❖ Flammability Testing of Interior Materials [Roofliners, Felt, Foam etc.]
- ❖ Material level DVP Test Rigs for Plastic & Rubber
- ❖ Hot Impulse Test Rig for Power Steering hoses, Hydraulic brake hoses & HVAC hoses.

Specific Capabilities / USPs

CTL is supporting OEMs & components manufacturers by executing/performing different kinds of DV/PV testing as per various international & OEM standards. The lab has successfully executed various DV/PV projects of OEMs for different components. Some of them are:

- ❖ Internal Heat Exchanger (IHx) test rig for HVAC systems
- ❖ Safety Belt Buckle Durability Test Rig
- ❖ 3-axis Durability Test Rig for Air ducts
- ❖ Test facility for DV/PV testing of Radiators (Automotive & Locomotive)
- ❖ Test facility for Thermal & High Temperature cycle test of Charged Air Coolers (CACs)
- ❖ Test facility of Floor Console Assembly, Instrument Panels (IPs), Overhead Console (OHC) & Gear Console.
- ❖ Material level DV/PV testing of Interior & Exterior Components (Automotive & Non-Automotive) i.e., Door Handle, Sun visor, Bumpers, Tailgate Hinges etc.
- ❖ Test facility for DVP testing (Tensile, Bending, Flexure, Impact Test etc.) of Roofliner material intended for Side Curtain Airbags (SCABs)
- ❖ Test facility for Airbag Modules & Steering Wheels, Coolant Internal Corrosion Testing of Oil Coolers
- ❖ DV/PV testing of Cylinder Head, Battery cooling plates, Battery Housing & other EV mechanical components.
- ❖ Durability Testing of Cabin door of CEVs.
- ❖ Test facility for testing of Anti-freeze coolant as per JIS & Indian standards.
- ❖ Stroking Performance Testing of Hydraulic Brake Fluid
- ❖ Road Hazard Impact (Pendulum) test of Wheel Rims
- ❖ Testing of Medical beds & Security Scanner Machines
- ❖ Testing of LNG tanks etc.



Key Projects Executed:

- ❖ Thermal & Pressure Test of AdBlue Tanks (Urea tanks)
- ❖ DVP testing of Hoses for coolant, Power Steering Hoses [Pressure, Vibration & Temperature testing]
- ❖ IHX testing of HVAC Hoses.
- ❖ Testing of Roof liners for Side Curtain Airbags.
- ❖ DVP testing of Brake Pedals, Clutch Pedals/ Pedal Box, Foot stepper, Spoilers as per OEM standards
- ❖ Fatigue & Stiffness Test, Bolt Hole Rigidity Test, Road Hazard (Pendulum Impact) Test of Wheel Rims
- ❖ DVP testing of Railways components (Radiators, Pantograph, Control and power unit, Dampers etc.)
- ❖ Vibration & Shock testing of HVAC intended for Railways
- ❖ Testing of Seats intended for Metro Rails
- ❖ DVP testing of Airbag Modules, Steering Wheel, Resonators etc.
- ❖ HVAC Hoses Development Project
- ❖ DVP testing of Security Scanner Machines, Hospital Medical Beds etc.
- ❖ Wheel rim Mould Validation project



Standards / Regulations (National & International):

Sr. No.	COMPONENT	IS/AIS	ECE
1	Hydraulic Brake Hose	IS:7079-2008	-
2	Fuel Tanks (Metallic & Plastic)	IS:14681, AIS:095, AIS:104 & IS:15547	ECE R34
3	Safety Glasses	IS:2553 (Part I & 2)	ECE R43
4	Door Locks & Hinges	IS:14225	ECE R11
5	Rear View Mirror	AIS:001	ECE R46
6	Wheel Rims	IS:9436, 9438 IS:16192 (PI, P2, P3)	-
7	Safety Belts	IS:15140	ECE R16
8	Automotive Seats	IS:15546 & AIS:023	ECE R17 & ECE R86
9	Brake Fluid	IS:8654	-
10	Windscreen Washer Tanks & Wiper Blades	IS:15802 & IS:15804	-
11	Anti-theft device (2/3W & 4W)	AIS:074 & AIS:075	ECE R62 & ECE R116
12	Safety Belt Anchorages	IS:15139	ECE R14
13	Pillion Hand Hold	IS:14495	EU 44/2014 Annex XIII
14	Flammability of Automotive Materials	IS:15061	-
15	Stands fitted in 2W	AIS:146	EU 44/2014 Annex XVI

Compliance / Lab Accreditations / Recognitions:

- ISO 9001, ISO 14001 & ISO 45001 certified
- ISO/IEC 17025 accredited
- BIS recognised for Safety Glass & Wheel Rim.

UPCOMING TEST FACILITIES:

HIGH-CAPACITY WHEEL RIM TEST MACHINES
SAFETY BELTANCHORAGES (SBAT)
SAFETY BELTS TEST FACILITY
SOLAR SIMULATION - WEATHER-O-METER
CLIMATIC CHAMBERS - 2.5m x 2.5m x 2.5m(02 Nos), 1m x 1m x 1m (02 Nos)
ED-SHAKER - 1000kgf
HOSE TESTING MACHINE
CO-ORDINATE MEASURING MACHINE