



Product Safety Evaluation and Reliability Engineering

Electronic Safety and Environmental Test Laboratory, EMI/EMC Division

NABL Accredited Laboratory, (MeitY, Govt. of India)



MeitY (Ministry of Electronics and Information Technology, Govt. of India) has made it mandatory that all Audio Visual, ISM, Information technology and Medical equipment manufacturer should follow the Safety directives and comply with National/International standard.

SAMEER, Navi Mumbai centre provide the test services for Safety and Environmental Compliances of Electronic Products to cater the requirement of industries.

Safety & Environmental Test Laboratories Inaugurated in 2016

Electronic Safety and Environmental Test Laboratory is offering the testing services for the following product categories:

I) Electrical Safety Testing

- IT Equipment's as per IS13252 (Part-1) / IEC60950-1
- Audio / Video and Similar Electronic Apparatus as per IS 616 / IEC 60065
- Household and similar Electrical Appliances as per IS 302-2-25 / IEC 60335-2-25 (Microwave Oven)

II) Medical Electrical Device Testing

- Incubator, Defibrillator, Ventilator, Electrosurgical Unit and Patient Monitor

III) Environmental & Reliability Testing as per IS 9000 / IEC 60068 series of standards

- Cold, Dry, Damp Heat (Cyclic & Steady State), Change of Temperature and Thermal Shock Test, Salt Spray / Salt Fog / Corrosion Test

IV) Vibration and Shock Testing: Sine, Random, Shock and Bump

V) UPS Performance up to 10 KVA as per IS 16242-3 / IEC 62040-3

VI) Flammability Testing

Application of a safety standard is intended to reduce the risk of injury or damage due to the following hazards:

- | | |
|------------------|--------------|
| • Electric shock | • Mechanical |
| • Energy | • Radiation |
| • Fire | • Chemical |
| • Heat | |





Product Safety Evaluation and Reliability Engineering



Electrical Test

- AC/DC Withstand Test
- Insulation Resistance Test
- Ground Bond Test
- Touch Current Test

SAMEER is having the state of the art test instrumentation to carry out the safety compliance of medical equipment for the following standards:

- IEC 60601-1/IS 13450-1 General Requirements for Basic Safety and Essential Performance
- IEC 60601-1-2/IS 13450-1-2 Electromagnetic disturbances - Requirements and tests
- IEC 60601-2-2: High frequency surgical equipment and high frequency surgical accessories
- IEC 60601-2-4: Defibrillator
- ISO 80601-2-12: Lung ventilators - Critical care ventilators
- IS 13450-2-19/20/21/IEC 60601-2-19/20/21 - Infant incubators / infant radiant warmer
- IEC 80601-2-49: Multifunction patient monitoring equipment



Environmental Test Facility

- The Reliability testing is useful for exposing products and devices to the kind of real-world stresses and strains.
- List of Tests
 - IEC 60068-2-1 Cold
 - IEC 60068-2-2 Dry Heat
 - IEC 60068-2-14 Change of Temperature
 - IEC 60068-2-30 Damp Heat, Cyclic
 - IEC 60068-2-78 Damp Heat, Steady State
 - IEC 60068-2-11 Salt Mist
 - IEC 60068-2-52 Salt Mist, Cyclic
- JSS 55555 Methods for Electronic and Electrical Equipment
- MIL 810 Series - Environmental Engineering Considerations & Laboratory Tests
- Thermal Shock Test



Specification:

Temperature	: -70°C to + 180°C
Humidity (RH)	: 10 % to 98 %
Ramp Rate	: 1 to 5°C /minute
Load Capacity	: Up to 45 Kg
Working Space (mm)	: 950 x 950 x 950



Product Safety Evaluation and Reliability Engineering

Vibration And Shock Testing

List of Tests

- IEC 60068-2-6 - Sinusoidal Vibration
- IEC 60068-2-27 - Shock
- IEC 60068-2-64 - Random Vibration
- MIL 810 Series Environmental Engineering Laboratory Tests Methods
- JSS 55555 Environmental Test for Electronic and Electrical Equipment

Specification:

Frequency	: 5 Hz – 3200 Hz
Sine Force(Pk)	: 1000 kgf
Random (rms)	: 1000 kgf,
Shock (Pk)	: 2000 kgf
Displacement	: 38 mm (Pk-Pk),
Acceleration	: 75 g
EUT Load	: 75 Kg (Max)





Product Safety Evaluation and Reliability Engineering

FLAMABILITY TESTING

- Equipment Failure to meet flammability testing Requirements.
- Flammability testing determines how easily a material or finished product will ignite or burn when exposed to or used near fire or heat.

List of Tests

- Needle Flame Test
- Ball Pressure Test
- Glow Wire Test
- Comparative Tracking Index Test

