

## AGENDA

### 17<sup>th</sup> MEETING OF ENVIRONMENTAL TESTING PROCEDURES SECTIONAL COMMITTEE (LITD 01)

**Venue:** CQAL Bangalore  
**Date:** 26 November 2024  
**Time:** 10:00 hrs  
**Chairperson:** Shri U K Nandwani, Ex-DG STQC  
**Member Secretary:** Ms Alismita Khag (LITD, BIS)

#### ITEM 0: WELCOME ADDRESS

- 0.1 Welcome by Member Secretary
- 0.2 Opening Remarks by the Chairperson

#### ITEM 1: FORMAL CONFIRMATION OF THE MINUTES OF LAST MEETING

- 1.1 The minutes of the 16th meeting of the committee held on 18 July 2024 were circulated. No comments have been received on the minutes.

*The committee may confirm the minutes.*

#### ITEM 2: SCOPE AND COMPOSITION OF LITD 01

##### 2.1 LITD 01 'Environmental Testing Procedures'

**Scope:** To prepare Indian Standards on testing procedure for electronic components and equipments under different environmental conditions.

*The committee may note.*

##### **Liaison:**

IEC TC 104 Environmental conditions, classification and methods of test (*Participating Member*)

*The committee may note.*

The composition of LITD 01 is given in Annexure -1.

*The committee may note and review its composition.*

##### 2.2 Request for nomination

The following request for membership have been received:

Sl. No.	Nomination	Organisation
1.	Shri Anand Suhas Gharpure	Sonic Multitech Pvt. Limited
2.	Shri Praveen Krishnan	React Laboratories
3.	Shri Saumil Paresh Shah	Premier Electrosystems

*The Committee may deliberate and decide.*

### ITEM 3: REVIEW OF STANDARDS

3.1. In accordance with BIS procedure, Indian Standards which are in existence for more than 3 years and are pre-2000 are to be reviewed for reaffirmation/revision/withdrawal. The list of such Standards along with the status of the base IEC Standards are provided below:

Sl. No.	Standard No.	Title	Base Standard	Status of base Standard	Recommendation
1.	IS 9000 (Part 22):1983	Basic Environmental Testing Procedures for electronic and electrical items - fine mist test	-	JSS 55555:1977 JSS 50101:1972 IEC 60068-2-11:1964	To be reviewed in detail. *
2.	IS 9001 (Part 19): 2006	Guidance for environmental testing - salt mist test	-		
3.	IS 9000 (Part 11): 1983	Basic environmental testing procedures for electronic and electrical items - salt mist test	-		
4.	IS 9002 (Part 3): 1979	Specification for Equipment for environmental tests for electronic and electrical items: Part 3 humidity chamber	-	-	To be reviewed in detail.
5.	IS 9002 (Part 6): 1980	Specification for equipment for environmental tests for electronic and electrical items: Part 6 constant relative humidity chamber (Non - Injection Type)	-	-	To be reviewed in detail.
6.	IS 13736 (Part 2/Sec 1): 2020	Classification of Environmental Conditions Part 2 Environmental Conditions Appearing in Nature Section 1 Temperature and humidity	IEC 60721-2-1 : 2013	No Change	May be reaffirmed
7.	IS 13736 (Part 2/Sec 3) : 2020	Classification of Environmental Conditions Part 2 Environmental Conditions Appearing in Nature Section 3 Air pressure	IEC 60721-2-3 : 2013	No Change	May be reaffirmed
8.	IS 9000 (Part 4) : 2020	Environmental Testing Part 4 Tests - Test Cab: Damp Heat, Steady State	IEC 60068-2-78 : 2012	No Change	May be reaffirmed
9.	IS 9000 (Part 7/Sec 7) : 2020	Environmental Testing Part 7 Tests Section 7 Test Eh: Hammer tests	IEC 60068-2-75:2014	No Change	May be reaffirmed
10.	IS 9001 (Part 20) : 2010	Guidance for environmental testing: Part 20 calculation of uncertainty of conditions in climatic test chambers	IEC 60068-3-11: 2007	No Change	May be reaffirmed
11.	IS/IEC 60695-1-40 : 2013	Fire Hazard Testing Part 1 Guidance for assessing the fire hazard of electro technical products Section 40 Insulating Liquids	IEC 60695-1-40: 2013	No Change	May be reaffirmed
12.	IS/IEC 60695-1-40 : 2013	Fire Hazard Testing Part 1 Guidance for assessing the fire hazard of electro technical	IEC 60695-1-40 : 2013	No Change	May be reaffirmed

		products Section 40 Insulating Liquids			
13.	IS/IEC 60721-2-4 : 2018	Classification of Environmental Conditions Part 2 Environmental Conditions appearing in nature Section 4 Solar Radiation and Temperature	IEC 60721-2-4:2018	No Change	May be reaffirmed
14.	IS/IEC 60721-2-7) : 2018	Classification of Environmental Conditions Part 2 Environmental Conditions appearing in nature Section 7 Flora and Fauna	IEC 60721-2-7: 2018	No Change	May be reaffirmed
15.	IS/IEC 60721-3-0) : 2020	Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 0 Introduction	IEC 60721-3-0) : 2020	No Change	May be reaffirmed
16.	IS/IEC 60721-3-2) : 2018	Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 1 Transportation and Handling	IEC 60721-3-2:2018	IEC 60721-3-2:2018/COR 3:2024	The major changes are as follows:  Table 1 – Classification of climatic conditions Replace the existing row e) with the following new row:  e) Low absolute humidity 1) g/m <sup>3</sup> 4 1 0,05 0,02 0,003
17.	IS/IEC 60721-3-3) : 2019	Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 3 Stationary use at weather protected locations	IEC 60721-3-3) : 2019	No Change	May be reaffirmed
18.	IS/IEC 60721-3-4 : 2019	Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 4 Stationary use at non-weather protected locations	IEC 60721-3-4 : 2019	IEC 60721-3-4:2019/COR 1:2023	The major changes are as follows:  Table 1 – Classification of climatic conditions In the "Low absolute humidity" row, for climatic

					conditions 4K23, 4K24, 4K26 and 4K27, replace the existing values "0,2", "0,003", "0,1" and "0,003" with the new values "0,05", "0,004", "0,05" and "0,004", respectively, as shown:
19.	IS/IEC 60721-3-5) : 1997	Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 5 Ground Vehicle Installations	IEC 60721-3- 5: 1997	No Change	May be reaffirmed
20.	IS/IEC 60721-3-7 : 2002	Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 7 Portable and non- stationary use	IEC 60721-3- 7: 1995	IEC 60721-3- 7: 2026 (Underdevelop- ment)	Reaffirm till the publication of the revised standard
21.	IS/IEC 60068-1 : 2013	Environmental Testing Part 1 General and Guidance	IEC 60068-1 : 2013	No Change	May be reaffirmed
22.	IS/IEC 60068-2- 10:2018	Environmental testing - Part 2- 10: Tests - Test J and guidance: Mould growth	IEC 60068-2- 10:2018	No Change	May be reaffirmed
23.	IS/IEC 60695-1-11 : 2014	Fire Hazard Testing Part 1 Guidance for assessing the fire hazard of electrotechnical products Section 11 Fire Hazard Assessment	IEC 60695-1- 11 : 2014	No Change	May be reaffirmed
24.	IS/IEC 60695-1-10 : 2016	Fire Hazard Testing Part 1 Guidance for assessing the fire hazard of electrotechnical products Section 10 General Guidelines	IEC 60695-1- 10 : 2016	No Change	May be reaffirmed
25.	IS/IEC 60068-2- 17:1994	"Basic environmental testing procedures Part 2: Tests Section 17: Test Q: Sealing"	IEC 60068-2- 17:1994	The base standard has been revised by IEC 60068-2- 17:2023	This edition includes the following significant technical changes with respect to the previous edition: a) Survey of

					sealing tests has been deleted and the relevant content moved to a new Clause 4 General ; b) the Scope has been revised; c) the figures have been updated for clarification purposes; d) all non-SI units have been removed; e) the information to be given in the relevant specification has been revised. May be revised
26.	IS/IEC 60068-2-38:2021	"Environmental Testing Part 2 Tests Section 5 Test ZAD: Composite Temperature Humidity Cyclic test"	IEC 60068-2-38:2021	No Change	May be reaffirmed

\*In the last meeting of LITD 01 the following was discussed and decided:

*IEC 60068-2-11:2021 specifies the salt mist test only. It does not specify the fine mist test contained in IS 9000 (Part 22):1983 and IS 9002 (Part 12):1986. The requirements of fine mist test contained in IS 9000 (Part 22):1983 and IS 9002 (Part 12):1986 is based on JSS 55555. Members were of the view that fine mist test may be applicable only for defense applications as this test is generally not performed on electronic/ electrical products. Hence, the JSS Standard specifies the fine mist test and the IEC does not. There was also a view that the fine mist test may be similar to that of the humidity test. It was also discussed that the IEC 60529 'Degrees of protection provided by enclosures may suffice for the fine mist test. The Committee decided to discuss about the requirements and application of the fine mist test in Panel 1 so as to come to a fruitful conclusion. Panel 1 was requested to review the contents of the IEC 60068-2-11:2021, JSS 5555, IS 9000 (Part 11):1983, IS 9002 (Part 12): 1986, IS 9000 (Part 22): 1983, IS 9001 (Part 19):2006 and the related Standards like humidity test, ingress protection test etc. The Panel was also requested to study the need and applicability of the fine mist test for electronic and electrical products. It was decided that Panel 1 would provide their recommendation to the Committee in its next meeting.*

***The Committee may deliberate and decide.***

#### 4. INTERNATIONAL STANDARDIZATION ACTIVITIES

##### 4.1 Voting documents for comments:

4.1.1 The following documents had been circulated to all members for comments through the BIS Portal. However, till date no comment have been received form any of the members. Members are requested to provide their comments on the following documents to take forward India's viewpoints in the global platform:

Sl. No.	IEC Committee	Voting Document	Last date for comments
1.	IEC TC 104	104/1077/CD IEC TS 60721-4-4 ED1: Classification of environmental conditions - Part 4-4: Guidance for the correlation and transformation of environmental condition classes of IEC 60721-3 to the environmental tests of IEC 60068 - Stationary use at non-weather protected locations	27 Dec 2024
2.	IEC TC 104	104/1075/CDV IEC 60068-2-75/AMD1 ED2: Amendment 1 - Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	07 Feb 2025

These voting documents are attached along with the Agenda.

*The Committee may note and deliberate.*

##### 4.2 IEC Projects of High and Medium Priority

As per the BIS policy, members interested in participating in different working groups of IEC need to take up projects (max 2) which are at NP/CD/CDV stages at IEC for review and providing country specific inputs.

A list of projects being formulated at IEC along with their current stage is provided below:

Sl. No.	Project	Title	Stage
1.	IEC 60068-2-1	Environmental testing - Part 2-1: Tests - Test A: Cold	CDV
2.	IEC 60068-2-2	Environmental testing - Part 2-2: Tests - Test B: Dry heat	CDV
3.	IEC 60068-2-13	Environmental testing - Part 2-13: Tests - Test M: Low air pressure	CD
4.	IEC 60068-2-30	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	CDV
5.	IEC 60068-2-78	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	CDV
6.	IEC 60068-3-11	Environmental testing - Part 3-11: Supporting documentation and guidance - Calculation of uncertainty of conditions in climatic test chambers	CDV
7.	IEC 60068-3-14	Environmental testing - Part 3-14: Supporting documentation and guidance - Developing a climatic sequential test	CDV
8.	IEC 60721-3-5	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities -Section 5: Ground vehicle installations	CDV
9.	IEC 60721-3-7	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and	CDV

		their severities - Section 7: Portable and non-stationary use	
10.	IEC TS 60721-4-4	Classification of environmental conditions - Part 4-4: Guidance for the correlation and transformation of environmental condition classes of IEC 60721-3 to the environmental tests of IEC 60068 - Stationary use at non-weather protected locations	CD

Members may identify the projects that they would like to participate based on their individual expertise.

*The Committee may deliberate and decide.*

### **4.3 Nomination of experts**

**4.3.1** The following members have been nominated as experts in the respective working groups of IEC TC 104:

<b>Sl. No.</b>	<b>Working Group</b>	<b>Member</b>
1.	WG 14 Climatic field data including validation	1. Shri P P Chaurasia, CQAL 2. Mrs. G Girija, CPRI 3. Shri Mandar Sinnarkar
2.	WG 15 Dynamic field data including validation	1. Shri Mandar Sinnarkar 2. Shri T Bhavanishankar

*The members to provide updates regarding the progress of work on the respective working groups.*

*The Committee may note and review the membership.*

### **ITEM 5: DATE AND PLACE FOR THE NEXT MEETING**

### **ITEM 6: ANY OTHER BUSINESS**

**ANNEXURE-1**  
**Composition of LITD 1**

S. No.	Organization	Member Name	Role	14 <sup>th</sup> Meeting	15 <sup>th</sup> Meeting	16 <sup>th</sup> Meeting	Total Attendance
1.	IN PERSONAL CAPACITY	Shri U.K. Nandwani	Chairperson	Y	Y	Y	3/3
2.	Bharat Electronics Limited, Bengaluru	Ms. Padma Sharma	Principal Member	N	Y	N	1/3
		Shri Sudarshan K	Alternate Member				
3.	Bharat Heavy Electrical Limited, New Delhi	Shri Dinesh Dubey	Principal Member	Y	Y	N	2/3
		Shri S K Harinath	Alternate Member				
4.	Central Power Research Institute, Bengaluru	Dr. T. Bhavani Shanker	Alternate Member	Y	Y	Y	3/3
		Shri G. Girija	Principal Member				
5.	Centre for Development of Telematics, New Delhi	Shri S. Bhaskara Rao	Principal Member	Y	Y	Y	3/3
		Shri Nagarajan Nayak	Alternate Member				
6.	Chief Quality Assurance Establishment (Warship Equipment), Bengaluru	Shri Sudhakar Menda	Principal Member	Y	Y	N	2/3
		Shri. J Chandra Shekara	Alternate Member				
7.	Directorate General of Quality Assurance, New Delhi	Shri R Thillaikkarasu	Alternate Member	Y	Y	Y	3/3
		Shri P P Chaurasia	Principal Member				
8.	Electrical Research and Development Association, Vadodara	Shri Shailesh Patel	Alternate Member	Y	Y	N	2/3
		Shri Puran Gajera	Principal Member				
9.	Electronic Industries Association of India, New Delhi	Shri Rajoo Goel	Principal Member	Y	Y	Y	3/3
		Shri MP Dubey	Alternate Member				
10.	Indian Space Research Organization - U R Rao Satellite Centre, Bengaluru	Shri Raghavendra B. Kulkarni	Alternate Member	Y	N	Y	2/3
		Shri Jayasimha. P	Principal Member				
11.	Standardization Testing and Quality Certification (STQC)	Shri B. Jobin	Alternate Member	Y	Y	Y	3/3



		Mr Ashish Chaudhary	Principal Member				
		Shri Nitish Kumar	Alternate Member				
12.	<b>Tata Advanced Systems Limited, Bengaluru</b>	<b>Shri A K Swamy</b>	<b>Principal Member</b>	N	N	N	<b>0/3</b>
		<b>Shri S N Raghavendra</b>	<b>Alternate Member</b>				
13.	UL India Private Limited, Bengaluru	Shri Ashish Mathur	Alternate Member	Y	Y	Y	3/3
		Shri V. Manjunath	Alternate Member				
		Shri Anand Kumar	Principal Member				
14.	Vishay Components India Private Limited, Pune	Shri Mandar P. Sinnarkar	Principal Member	Y	Y	N	2/3