

BUREAU OF INDIAN STANDARDS

Program of Work

LITD 2 : Dependability of Electronic, Electrical Components, Equipment and Systems

Scope: To prepare national standards in the field of dependability, in electronics, electrical, electromechanical components, equipment and systems including those not normally dealt with by other LITD Technical Committees. Dependability is the ability to perform as and when required and is time dependent in application. Dependability can be expressed in terms of core attributes of availability, reliability, maintainability and supportability that are tailored to application-specific functional and service attributes. LITD 02 standards are related to products, processes and management activities. The standards provide systematic methods and tools for dependability assessment, technical risk assessment and management of services and systems throughout their life cycles. Dependability is managed through life cycle processes involving availability and its core performance attributes of reliability, availability, maintainability and maintainability support.

Liaison: **IEC TC-56 (P): Dependability**

Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 15037 : 2020 IEC 61078 : 2016 Reviewed In : 2023 IEC 61078: 2016	Reliability Block Diagrams (Second Revision)	September, 2023	-	Identical under dual numbering
2	IS 15038 : 2011 IEC 61164: 2004 Reviewed In : 2023 IEC 61164: 2004	Reliability growth - Statistical test and estimation methods (First Revision)	September, 2023	-	Identical under dual numbering
3	IS 15444 (Part 1) : 2012 IEC 61163-1: 2006 Reviewed In : 2022 IEC 61163-1: 2006	Reliability stress screening: Part 1 repairable assemblies Manufactured in lots (First Revision)	August, 2022	-	Identical under dual numbering
4	IS 15444 (Part 2) : 2020 IEC 61163-2 : 2020 Reviewed In : 2023 IEC 61163 : Part 2 : 2020	Reliability Stress Screening Part 2 Components (First Revision)	November, 2023	-	Identical under dual numbering
5	IS 15474 (Part 1) : 2019 IEC 60300-1 : 2014 Reviewed In : 2022 IEC 60300-1: 2014	Dependability Management Part 1 Guidance for Management and Application	October, 2022	-	Identical under dual numbering
6	IS 15474 (Part 3/Sec 1) : 2018 IEC 60300-3-1 :	Dependability management: Part 3 application guide: Sec 1 analysis techniques for dependability -	October, 2021	-	Identical under dual numbering

	2003 Reviewed In : 2021 IEC 60300-3-1: 2003	Guide on methodology			
7	IS 15474 (Part 3/Sec 2) : 2018 IEC 60300-3-2 : 2004 Reviewed In : 2021 IEC 60300-3-2 : 2004	Dependability Management Part 3 Application Guide Selection 2 Collection of Depedability Data from the Field	May, 2021	-	Identical under dual numbering
8	IS 15474 (Part 3/Sec 3) : 2021 IEC 60300-3-3: 2017 IEC 60300-3-3: 2017	Dependability management Part 3 Application guide Section 3 Life cycle costing Superseding IS 15474 :2004		-	Identical under dual numbering
9	IS 15474 (Part 3/Sec 5) : 2018 IEC 60300-3-5 : 2001 Reviewed In : 2021 IEC 60300-3-5 : 2001	Dependability Management Part 3 Application Guide Section 5 Reliability Test Conditions and Statistical Test Principles	May, 2021	-	Identical under dual numbering
10	IS 15474 (Part 3/Sec 10) : 2018 IEC 60300-3-10 : 2001 Reviewed In : 2021 IEC 60300-3-10 : 2001	Dependability Management Part 3 Application Guide Section 10 Maintainability	May, 2021	-	Identical under dual numbering
11	IS 15474 (Part 3/Sec 11) : 2014 IEC 60300-3-11 : 2009 Reviewed In : 2023 IEC 60300-3-11 : 2009	Dependability Management Part 3 Application Guide Section 11 Reliability Centred Maintenance	September, 2023	-	Identical under dual numbering
12	IS 15474 (Part 3/Sec 14) : 2019 IEC 60300-3-14 : 2004 Reviewed In : 2022 IEC 60300-3-14: 2004	Dependability Management Part 3 Application Guide Section 14 Maintenance and maintenance support	October, 2022	-	Identical under dual numbering
13	IS 15474 (Part 3/Sec 15) : 2021 IEC 60300-3-15 : 200 IEC 60300-3-15 : 200	Dependability Management Part 3 Application guide Section 1 Engineering of system dependability Superseding IS 15613 :2005		-	Identical under dual numbering
14	IS 16957 : 2018 IEC 61882 : 2016 Reviewed In : 2021 IEC 61882 : 2016	Hazard and operability studies (Hazop Studies) - Application guide	June, 2021	-	Identical under dual numbering
15	IS 16958 : 2018 IEC 61882 : 2016 Reviewed In : 2019 IEC 62402: 2007	Obsolescence management - Application guide	October, 2019	-	Identical under dual numbering

16	IS 1885 (Part 192) : 2021 IEC 60050-192: 2015 IEC 60050-192: 2015	Electrotechnical Vocabulary Part 192 Dependability (Superseding IS 1885 Part 39 :1999)		-	Identical under dual numbering
17	IS/IEC 60605-6 : 2007 IEC 60605-6 : 2007 Reviewed In : 2022 IEC 60605-6: 2007	Equipment Reliability Testing Part 6 Tests for the Validity and Estimation of the Constant Failure Rate and Constant Failure Intensity	August, 2022	-	Identical under single numbering
18	IS/IEC 60706-2 : 2006 IEC 60706-2: 2006 Reviewed In : 2022 IEC 60706-2: 2006	Maintainability of equipment Part 2 Maintainability requirements and studies during the design and development phase	August, 2022	-	Identical under single numbering
19	IS/IEC 60706-3 : 2006 IEC 60706-3 : 2006 Reviewed In : 2022 IEC 60706-3: 2006	Maintainability of Equipment Part 3 Verification and Collection, Analysis and Presentation of Data	August, 2022	-	Identical under single numbering
20	IS/IEC 60706-5 : 2007 IEC 60706-5 : 2007 Reviewed In : 2022 IEC 60706-5: 2007	Maintainability of Equipment Part 5 Testability and Diagnostic Testing	August, 2022	-	Identical under single numbering
21	IS/IEC 60812 : 2018 IEC 60812 : 2018 Reviewed In : 2023 IEC 60812: 2018	Failure Modes and Effects Analysis (FMEA and FMECA)	November, 2023	-	Identical under single numbering
22	IS/IEC 61025 : 2006 IEC 61025 : 2006 Reviewed In : 2023 IEC 61025: 2006	Fault Tree Analysis (FTA)	November, 2023	-	Identical under single numbering
23	IS/IEC 61123 : 2019 61123: 2019 61123: 2019	Reliability testing - Compliance test plans for success ratio Superseding IS 8161 Part 5: 2011		-	Identical under single numbering
24	IS/IEC 61124 : 2012 Reviewed In : 2022 IEC 61124: 2012	Reliability Testing - Compliance Tests for Constant Failure Rate and Constant Failure Intensity	October, 2022	-	Identical under dual numbering
25	IS/IEC 62506 : 2013 IEC 62506: 2013 IEC 62506: 2013	Product Accelerated Testing $t_L^{1/2}$ Methods		-	Identical under single numbering
26	IS/IEC 62508 : 2010 IEC 62508 : 2010 IEC 62508 : 2010	Guidance on human aspects of dependability Superseding IS 11743:1986		-	Identical under single numbering
27	IS/IEC 62628 : 2012 IEC 62628 : 2012 IEC 62628 : 2012	Guidance on software aspects of dependability		-	Identical under single numbering
28	IS 7354 (Part 3) : 2011 IEC 60319: 1999 Reviewed In : 2023 IEC 60319: 1999	Guide on reliability of electronic and electrical items: Part 3 presentation and specification of reliability data for electronic components (Second Revision)	November, 2023	-	Identical under dual numbering
29	IS 8161 (Part 2) : 2018 IEC 60605-2 : 1994 Reviewed In : 2021	Equipment reliability testing: Part 2 design of test cycles (First Revision)	June, 2021	-	Identical under dual numbering

	IEC 60605:1994				
30	IS 8161 (Part 4) : 2018 NULL Reviewed In : 2021 IEC 60605-4: 2001	Equipment reliability testing: Part 4 statistical procedures for exponential distribution - Point estimates, confidence intervals, prediction intervals and tolerance intervals (First Revision)	October, 2021	-	Identical under dual numbering

Standards under Development

Projects Approved

SI. No.	Doc No.	Title
<i>No Records Found</i>		

Preliminary Draft Standards

SI. No.	Doc No.	Title
<i>No Records Found</i>		

Drafts Standards in WC Stage

SI. No.	Doc No.	Title
<i>No Records Found</i>		

Draft Standards Completed WC Stage

SI. No.	Doc No.	Title
1	LITD 2 (23128)	Weibull Analysis
2	LITD 2 (23129)	Equipment Reliability Reliability assessment methods
3	LITD 2 (23130)	Obsolescence management Superseding IS 16958 2018
4	LITD 2 (23131)	Electric components Reliability Reference conditions for failure rates and stress models for conversion Superseding IS 7354 Part 3 2011
5	LITD 2 (23165)	Mathematical expressions for reliability availability maintainability and maintenance support terms
6	LITD 2 (23166)	Reliability growth Stress testing for early failures in unique complex systems
7	LITD 2 (23167)	Spare Parts Provisioning
8	LITD 2 (23168)	Root cause analysis RCA

Finalized Draft Indian Standard

SI. No.	Doc No.	Title
<i>No Records Found</i>		

Finalized Draft Indian Standards under Print

SI. No.	Doc No.	Title
<i>No Records Found</i>		

Total Published Standards:26 Total Standards Under development:8

Aspect Wise Report

Product : 0
Code of Practices : 20
Methods of Test : 8
Terminology : 1

Dimensions : 0
System Standard : 1
Safety Standard : 0
Others : 0
Service Specification : 0
Process Specification : 0
Unclassified : 0

Annexure-I :List of Indian Standards Withdrawn/Superseded

SI. No.	IS No. & Year	Title
1	IS 10052 (Part 3) : 1983 SEC 3 CISPR 16 Reviewed In : 1994	Electromagnetic Interference Measuring Apparatus And Measuring Methods Part 3 Radiation Measurement Of Electromagnetic Interference
2	IS 10052 (Part 4) : 1984 SEC 5 CISPR 16 Reviewed In : 1996	Electromagnetic Interference Measuring Apparatus And Measuring Methods Part 4 Electromagnetic Interference Measuring Apparatus Having Detectors Other Than Quasi-Peak
3	IS 10052 (Part 5) : 1986 SEC 9 CISPR 16 Reviewed In : 1996	Electromagnetic Interference Measuring Apparatus And Measuring methods Part 5 Statistical Considerations In The Determination Of Limits Of Electromagnetic Interference
4	IS 10052 (Part 6) : 1992	Electromagnetic Interference measuring apparatus and measurement methods Part 6 Measurement of the shielding efficiency of the coaxial cables having one or two braids in the metric wavelength range
5	IS 10052 (Part 7) : 1993	Electromagnetic Interference Measuring Apparatus And Measuring Methods Part 7 Audio Frequency Interference Measurement
6	IS 10139 : 1982 Reviewed In : 2019	Presentation of reliABility maintainABility and availABility predictions
7	IS 10673 : 1983 IEC Pub 410 Reviewed In : 2019	Sampling plans and procedures for inspection by attributes for electronic items
8	IS 11137 (Part 2) : 2012 IEC 60812: 2006 Reviewed In : 2019 IEC 60812: 2006	Analysis techniques for system reliABility Part 2 procedure for failure mode and effects analysis Fmea First Revision
9	IS 11743 : 1986 Reviewed In : 2019	Guide on human safety in design manufacture use and maintenance of electronic equipment
10	IS 12708 : 1988 CISPR 20 Reviewed In : 1993	Measurement of the Immunity of Sound And Television Broadcast Receivers and Associated Equipment from Radio-sources Operating in the Frequency Range 1 5 Mhz to 30 Mhz by the Current Injection Method
11	IS 13140 (Part 1) : 1991	Disturbances in supply systems caused by household appliances and similar electrical equipment Part 1 Definitions
12	IS 13140 (Part 3) : 1993	Disturbances in supply systems caused by household appliances and similar electrical equipment Part 3 Voltage fluctuations
13	IS 13149 : 1991	Flickermeter Functional and design specifications
14	IS 15036 : 2001 Reviewed In : 2016	Dependability Management - Application Guide Analysis Techniques for Dependability - Guide on Methodology
15	IS 15474 : 2004 Reviewed In : 2019 IEC 60300-3-3: 2003	DependABility management - Application guide - Life cycle costing
16	IS 15474 (Part 3/Sec 6) : 2005 IEC 60300-3-6: 1997 Reviewed In : 2016 IEC 60300-3-6: 1997	DependABility management - Part 3 application guide - Sec 6 software aspects of dependABility
17	IS 15474 (Part 3/Sec 7) : 2005 IEC 60300-3-7: 1999 Reviewed In : 2019 IEC	DependABility management Part 3 application guide Sec 7 reliABility stress screening of electronic hardware

	60300-3-7: 1999	
18	IS 15613 : 2005 IEC 61713: 2000 Reviewed In : 2019 IEC 61713: 2000	Software dependability through the software life - Cycle processes - Application guide
19	IS 1885 (Part 3/Sec 3) : 1967	Electrotechnical vocabulary Part 3 - Acoustics Sec 3 - Sound recording and reproduction
20	IS 1885 (Part 39) : 1999 Reviewed In : 2019 IEC 60050-191:1990	Electrotechnical vocabulary Part 39 dependability of electronic and electrical items Second Revision
21	IS 1885 (Part 64/Sec 1) : 1987 IEC 50(704)	Electrotechnical vocabulary Part 64 Electromagnetic compatibility Sec 1 General terms
22	IS 1885 (Part 64/Sec 2) : 1987	Electrotechnical vocabulary Part 64 Electromagnetic compatibility Sec 2 Specific terms
23	IS 2106 (Part 1) : 1962	Environmental tests for electronic and electrical equipment Part 1 - General
24	IS 2106 (Part 2) : 1962	Environmental tests for electronic and electrical equipment Part 2 - Damp heat cycling test
25	IS 2106 (Part 3) : 1963	Environmental tests for electronic and electrical equipment Part 3 - Cold test
26	IS 2106 (Part 4) : 1963	Environmental tests for electronic and electrical equipment Part 4 - Dry heat test
27	IS 2106 (Part 5) : 1964	Environmental tests for electronic and electrical equipment Part 5 - Low air pressure test
28	IS 2106 (Part 6) : 1965	Environmental tests for electronic and electrical equipment Part 6 - Rapid change of temperature
29	IS 2106 (Part 7) : 1964	Environmental tests for electronic and electrical equipment Part 7 - Bump test
30	IS 2106 (Part 8) : 1964	Environmental tests for electronic and electrical equipment Part 8 - Impact or shock test
31	IS 2106 (Part 9) : 1964	Environmental tests for electronic and electrical equipment Part 9 - Drop test
32	IS 2106 (Part 10) : 1965	Environmental tests for electronic and electrical equipment Part 10 - Water immersion test
33	IS 2106 (Part 11) : 1965	Environmental tests for electronic and electrical equipment Part 11 - Water spray test
34	IS 2106 (Part 12) : 1965	Environmental tests for electronic and electrical equipment Part 12 - Dust test
35	IS 2106 (Part 13) : 1973	Environmental tests for electronic and electrical equipment Part 13 - Mould growth test
36	IS 2106 (Part 14) : 1966	Environmental tests for electronic and electrical equipment Part 14 - Constant acceleration test
37	IS 2106 (Part 15) : 1966	Environmental tests for electronic and electrical equipment Part 15 - Gas-tightness test
38	IS 2106 (Part 16) : 1971	Environmental tests for electronic and electrical equipment Part 16 - Vibration test
39	IS 2106 (Part 17) : 1973	Environmental tests for electronic and electrical equipment Part 17 - Stimulated solar radiation at ground level
40	IS 2106 (Part 18) : 1973	Environmental tests for electronic and electrical equipment Part 18 - Salt mist test
41	IS 589 : 1961	Basic climatic and mechanical durability tests for components for electronic and electrical equipment
42	IS 6842 : 1997	Limits for electromagnetic Interference
43	IS 6872 : 1972	Radio interference measuring apparatus for the frequency range 0.15 MHz to 1000 MHz

44	IS 6873 (Part 6) : 1983 CISPR 16 Reviewed In : 1989	Methods of Measurement of Electromagnetic Interference - Part 6 From High Voltage Transmission Systems
45	IS 7025 : 1973	Guidance On Solar Radiation Testing
46	IS 7354 (Part 1) : 1975 Reviewed In : 2019 IEC 60272: 1968	Guide on reliability of electronic and electrical items Part 1 Preliminary reliability considerations
47	IS 7354 (Part 2) : 1984 Reviewed In : 2019 IEC 60300	Guide on Reliability of Electronic and Electrical Items - Part 2 Reliability and Maintainability Management
48	IS 7354 (Part 4) : 1974 Reviewed In : 2019	Guide on reliABility of electronic and electrical items Part 4 collection of reliABility availABility and maintainABility data from performance
49	IS 7354 (Part 5) : 1975 Reviewed In : 2019 IEC 60419: 1973	Guide on reliability of electronic and electrical items Part 5 Inclusion of lot-by-lot and periodic inspection procedures in specifications electronic and electrical components or parts
50	IS 7354 (Part 6) : 1983 Reviewed In : 2019 IEC 60409	Guide on reliability of electronic and electrical items Part 6 Inclusion of reliability clauses into specifications for components or parts
51	IS 7690 : 1975 Reviewed In : 2019	Mathematical guide to the terms and definitions for reliABility of electronic equipment and components Or Parts used therein
52	IS 7805 : 1975	Guidance on mould growth testing redesignated as IS 9001 Part 10
53	IS 8145 : 1976	Test chambers of non-injection type for constant relative humidity
54	IS 8161 (Part 1) : 1999 Reviewed In : 2019 IEC 60605-1: 1978	Guide for equipment reliABility testing Part 1 principles and procedures First Revision
55	IS 8161 (Part 3/Sec 1) : 1986 Reviewed In : 2019 IECIEC 60605-3	Guide for Equipment Reliability Testing - Part 3 Preferred Test Conditions for Equipment Reliability Testing - Section 1 Indoor Portable Equipment Low Degree of Simulation
56	IS 8161 (Part 3/Sec 2) : 1986 Reviewed In : 2019 IEC 60605-3	Guide for Equipment Reliability Testing - Part 3 Preferred Test Conditions for Equipment Reliability Testing - Section 2 Equipment for Stationery Use in Weather Protected Locations High Degree of Simulation
57	IS 8161 (Part 5) : 2011 IEC 61123: 1991 Reviewed In : 2022 IEC 61123: 1991	Guide for equipment reliability testing Part 5 compliance test plans for success ratio First Revision
58	IS 8161 (Part 6) : 1983 Reviewed In : 2015 IEC Doc 56 (Secretaries) 144	Guide for equipment reliability testing Part 6 tests for validity of a constant failure rate assumption
59	IS 8161 (Part 6/Sec 1) : 1983 Reviewed In : 2016	Guide for equipment reliABility testing Part 6 tests for validity of a constant failure rate assumption Sec 1 chi - Square test
60	IS 8161 (Part 6/Sec 2) : 1987 Reviewed In : 2016	Guide for equipment reliABility testing Part 6 tests for validity of a constant failure rate assumption Sec 2 kolmogorov - Smirnov test
61	IS 8161 (Part 7) : 2012 IEC 61124: 2006 Reviewed In : 2015 IEC 61124: 2006	Guide for equipment reliABility testing Part 7 compliance tests for constant failure rate and constant failure intensity First Revision
62	IS 8161 (Part 11) : 1983 Reviewed In : 2019	Guide for equipment reliability testing Part 11 flow chart describing preparations for and execution of reliability tests
63	IS 8456 : 1977	Guidance on method of mounting of electronic and electrical items for dynamic tests
64	IS 9185 (Part 1) : 1979	Endurance Life test for electronic and electrical components Part 1 thermal endurance

	Reviewed In : 2019	
65	IS 9185 (Part 2) : 1979 Reviewed In : 2019	Endurance Life Test for electronic and electrical components Part 2 mechanical endurance
66	IS 9186 : 1979 Reviewed In : 2019	Guide for screening of electronic and electrical items
67	IS 9513 : 1979 CISPR 6	Audio frequency interference voltmeter
68	IS 9615 : 1980	Guide on General Aspects of electromagnetic interference suppression
69	IS 9692 (Part 1) : 1980 Reviewed In : 2019	Guide on maintainABility of equipment Part 1 introduction to maintainABility
70	IS 9692 (Part 2) : 1980 Reviewed In : 2019	Guide on maintainABility of equipment Part 2 maintainABility requirements in specifications and contracts
71	IS 9692 (Part 3) : 1981 Reviewed In : 2019	Guide on maintainABility of equipment Part 3 maintainABility programme
72	IS 9692 (Part 4) : 1987 Reviewed In : 2016	Guide on maintainABility of equipment Part 4 test and diagnostic procedures
73	IS 9692 (Part 5) : 1985 Reviewed In : 2019	Guide on maintainABility of equipment Part 5 maintainABility studies during the design phase
74	IS 9692 (Part 6) : 1983 Reviewed In : 2019	Guide on maintainABility of equipment Part 6 maintainABility verification
75	IS 9692 (Part 7) : 1984 Reviewed In : 2019	Guide on maintainABility of equipment Part 7 collection analysis and presentation of data related to maintainABility
76	IS 9692 (Part 8/Sec 1) : 1988 Reviewed In : 2016	Guide on maintainABility of equipment Part 8 maintenance and maintenance support planning Sec 1 general
77	IS 9692 (Part 8/Sec 2) : 1988 Reviewed In : 2016	Guide on maintainABility of equipment Part 8 maintenance and maintenance support planning Sec 2 maintenance support analysis
78	IS 9692 (Part 8/Sec 3) : 1988 Reviewed In : 2016	Guide on maintainABility of equipment Part 8 maintenance and maintenance support planning Sec 3 maintenance planning analysis
79	IS 9692 (Part 8/Sec 4) : 1988 Reviewed In : 2016	Guide on maintainABility of equipment Part 8 maintenance and maintenance supporting planning Sec 4 maintenance support resources requirements

Annexure-II :List of Indian Product Standards

Sl. No.	IS No. & Year	Title
<i>No Records Found</i>		