

BUREAU OF INDIAN STANDARDS

Program of Work

ETD 44 : Safety Of Machinery- Electrotechnical Aspects

Scope: Standardization in the field of the application of electro-technical equipment and systems to machinery (including a group of machines working together in a coordinated manner, excluding higher-level systems aspects) not portable by hand while working, but which may include mobile equipment. The equipment covered commences at the point of connection of the electrical supply to the machinery. Standardization of interfaces (excluding local area networks and field-bus) between control equipment and the electro-technical equipment of machinery. Standardization of electro-technical equipment and systems relating to the safeguarding of persons from hazards of the machinery, its associated equipment and the environment. To coordinate with ISO/IEC on all matters concerning the safety of machinery.”

Liaison: **IEC TC-44 (P): Safety of machinery - Electrotechnical aspects** **IEC TC-44 (P): Safety of machinery - Electrotechnical aspects**

Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 16501 (Part 1):2020 IEC TR 62061-1 : 2010 IEC TR 62061-1 : 2010	Guidance on the Application of IS 16810 (Part 1)/ISO 13849-1 and IS 16501/IEC 62061 in the Design of Safety-Related Control Systems for Machinery		-	Identical under dual numbering
2	IS 16501:2023 IEC 62061 : 2005 IEC 62061:2021	Safety of Machinery - Functional Safety of Safety-Related Control Systems (First Revision)		-	Identical under dual numbering
3	IS 16502 (Part 1):2023 IEC 61496-1 : 2020 IEC 61496-1 : 2020	Safety of Machinery - ElectroSensitive Protective Equipment Part 1 General Requirements and Tests		-	Identical under dual numbering
4	IS 16502 (Part 4/Sec 3):2024 61496-4-3:2022 61496-4-3:2022	Safety of Machinery “ Electro-Sensitive Protective Equipment Part 4 Particular Requirements for Equipment Using Vision Based Protective Devices (VBPD) Section 3 Additional Requirements When Using Stereo Vision Techniques (VBPDST) (First Revision)		-	Identical under dual numbering
5	IS 16502 (Part 5):2026	Safety of Machinery Electro-Sensitive Protective Equipment Part 5 Particular Requirements for Radar-Based Protective Devices		-	
6	IS 16502 (Part	Safety of Machinery -		-	Identical under dual

	2):2023 IEC 61496-2:2020 IEC 61496-2:2020	ElectroSensitive Protective Equipment Part 2 Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDs) (First Revision)			numbering
7	IS/ISO 16502-3:2020 IEC 61496-3 : 2018 IEC 61496-3 : 2018	Safety of Machinery - ElectroSensitive Protective Equipment Part 3 Particular Requirements for Active Opto-electronic Protective Devices Responsive to Diffuse Reflection (AOPDDR)		-	Identical under dual numbering
8	IS 16502 (Part 4/Sec 2):2024 61496-4-2:2022 61496-4-2:2022	Safety of Machinery-Electro-Sensitive Protective Equipment Part 4 Particular Requirements for Equipment Using Vision Based Protective Devices (VBPD) Section 2 Additional Requirements When Using Reference Pattern Techniques (VBPDP) (First Revision)		-	Identical under dual numbering
9	IS 16503 (Part 2):2017 IEC 61310-2 : 2007 IEC 61310-2 : 2007	Safety of Machinery - Indication, Marking and Actuation Part 2 Requirements for Marking	January, 2022	-	Identical under dual numbering
10	IS 16503 (Part 1):2017 IEC 61310-1 : 2007 IEC 61310-1 : 2007	Safety of Machinery - Indication, Marking and Actuation Part 1 Requirements for Visual, Acoustic and Tactile Signals	May, 2024	-	Identical under dual numbering
11	IS 16503 (Part 3):2017 IEC 61310-3 : 2007 IEC 61310-3 : 2007	Safety of Machinery - Indication, Marking and Actuation Part 3 Requirements for the Location and Operation of Actuators	May, 2024	-	Identical under dual numbering
12	IS 16504 (Part 11):2020 IEC 60204-11 : 2018 IEC 60204-11 : 2018	Safety of Machinery - Electrical Equipment of Machines Part 11 Requirements for Equipment for Voltages above 1 000 V AC or 1 500 V DC and not Exceeding 36 kV		-	Identical under dual numbering
13	IS 16504 (Part 32):2026 IEC 60204-32 : 2008 IEC 60204-32 : 2008	Safety of Machinery - Electrical Equipment of Machines Part 32 Requirements for Hoisting Machines (First Revision)		-	Identical under dual numbering
14	IS 16504 (Part 31):2019 IEC 60204-31 : 2013 IEC 60204-31 : 2013	Safety of Machinery - Electrical Equipment of Machines Part 31 Particular Safety and EMC Requirements for Sewing Machines, Units and Systems	May, 2024	-	Identical under dual numbering
15	IS 16504 (Part 33):2019 IEC 60204-33 : 2009 IEC 60204-33 : 2009	Safety of Machinery - Electrical Equipment of Machines Part 33 Requirements for Semiconductor Fabrication Equipment	May, 2024	-	Identical under dual numbering
16	IS 16504 (Part 34):2019 IEC TS 60204-34 : 2016 IEC 60204-34 :	Safety of Machinery - Electrical Equipment of Machines Part 34 Requirements for Machine Tools	May, 2024	-	Identical under dual numbering

	2016				
17	IS 16504 (Part 1):2019 IEC 60204-1 : 2016 IEC 60204-1 : 2016	Safety of Machinery — Electrical Equipment of Machines Part 1 General Requirements (First Revision)	May, 2024	1	Identical under dual numbering
18	IS 16504 (Part 32):2017 IEC 60204-32 : 2008 IEC 60204-32 : 2008	Safety of Machinery - Electrical Equipment of Machines Part 32 Requirements for Hoisting Machines	May, 2024	-	Identical under dual numbering
19	IS 16936:2018 IEC TR 62513 : 2008 IEC TR 62513 : 2008	Safety of Machinery - Guidelines for the Use of Communication Systems in Safety Related Applications	May, 2024	-	Identical under dual numbering
20	IS 17332:2020 IEC 62046 : 2018 IEC 62046 : 2018	Safety of Machinery - Application of Protective Equipment to Detect the Presence of Persons		-	Identical under dual numbering
21	IS 17519:2021 IEC 62745:2017 IEC 62745:2017	Safety of machinery - Requirements for cableless control systems of machinery		-	Identical under dual numbering
22	IS 17520:2021 IEC TS 62998-1 : 2019 IEC TS 62998-1 : 2019	Safety of Machinery - Safety-related Sensors Used for the Protection of Persons		-	Identical under dual numbering
23	IS 17520 (Part 3):2025	Safety of Machinery - Safety-Related Sensors Used for the Protection of Persons Part 3 Sensor Technologies and Algorithms		-	
24	IS 17521:2026 IEC TR 63074 : 2019 IEC TR 63074 : 2019	Safety of Machinery Security Aspects Related to Functional Safety of Safety Related Control Systems (First Revision)		-	Identical under dual numbering
25	IS 17521:2021 IEC TR 63074 : 2019 IEC TR 63074 : 2019	Safety of Machinery - Security Aspects Related to Functional Safety of Safety Related Control Systems		-	Identical under dual numbering
26	IS 19118:2025	Safety of Machinery - Guidelines on Functional Safety of Safety-Related Control System		-	

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
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No Records Found

Draft Standards Completed WC Stage

SI. No.	Doc No.	Title
No Records Found		

Finalized Draft Indian Standard

SI. No.	Doc No.	Title
No Records Found		

Finalized Draft Indian Standards under Print

SI. No.	Doc No.	Title
1	ETD 44 (06774)	Safety of Machinery Indication Marking and Actuation Part 2 Requirements for Marking
2	ETD 44 (06773)	SAFETY OF MACHINERY FUNCTIONAL SAFETY OF SAFETY-RELATED ELECTRICAL ELECTRONIC AND PROGRAMMABLE ELECTRONIC CONTROL SYSTEMS
3	ETD 44 (06772)	Safety of Machinery Electro-Sensitive Protective Equipment Part 2 Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices AOPDs
4	ETD 44 (06771)	Safety of machinery - Electrosensitive protective equipment Part 1 General Requirements and Tests
5	ETD 44 (06770)	Safety of Machinery Indication Marking and Actuation Part 3 Requirements for the Location and Operation of Actuators
6	ETD 44 (06769)	Safety of machinery - Indication marking and actuation - part 1 Requirements for visual acoustic and tactile signals
7	ETD 44 (06768)	Safety of Machinery Electrical Equipment of Machines Part 32 Requirements for Hoisting Machines
8	ETD 44 (06766)	SAFETY OF MACHINERY ELECTRICAL EQUIPMENT OF MACHINES PART 1 GENERAL REQUIREMENTS
9	ETD 44 (10918)	IECTS 61496-4-3 2015 Safety of Machinery - Electro-sensitive protective equipment - Particular requirements for equipment using vision based protective devices VBPD Additional requirements when using stereo vision techniques VBPDST
10	ETD 44 (10924)	IEC TR 62513 2008 Safety of Machinery - Guidelines for use of communication systems in safety related applications
11	ETD 44 (12365) Revision of: IS 16504:2019	Safety of machinery Electrical equipment of machines Part 1 General requirements first revision
12	ETD 44 (12385)	Safety of machinery Electrical equipment of machines Part 31 Particular safety and EMC requirements for sewing machines units and systems
13	ETD 44 (12386)	Safety of machinery Electrical equipment of machines Part 33 Requirements for semiconductor fabrication equipment
14	ETD 44 (12387)	Safety of machinery Electrical equipment of machines Part 34 Requirements for machine tools
15	ETD 44 (13529)	Guidance on the application of ISO 13849-1 and IEC 62061 in the design of safety-related control systems for machinery
16	ETD 44 (13533)	Safety of machinery - Electro-sensitive protective equipment - Part 4-2 Particular requirements for equipment using vision based protective devices VBPD - Additional requirements when using reference pattern techniques VBPDPP
17	ETD 44 (13668)	Safety of machinery - Application of protective equipment to detect the presence of persons
18	ETD 44 (13669)	Safety of machinery Electro-sensitive protective equipment Part 3 Particular requirements for active optoelectronic protective devices responsive to diffuse reflection AOPDDR
19	ETD 44 (14958)	Safety of machinery Electrical equipment of machines Part 11 Requirements for equipment for voltages above 1 000 V AC or 1 500 V DC and not exceeding 36 kV
20	ETD 44 (15771)	Safety of machinery - Requirements for cableless control systems of machinery
21	ETD 44 (15772)	Safety of machinery - Safety-related sensors used for the protection of persons
22	ETD 44 (15773)	Safety of machinery Security aspects related to functional safety of safety-related control systems
23	ETD 44 (18095)	Safety of machinery Electro-sensitive protective equipment Part 1 General requirements and tests
24	ETD 44 (18097) Revision of: IS 16502:2017	Safety of machinery Electro-sensitive protective equipment Part 2 Particular requirements for equipment using active opto-electronic protective devices AOPDs first revision
		Safety of machinery Functional safety of safety-related control systems

25	ETD 44 (18099) Revision of: IS 16501:2017	
26	ETD 44 (23807) Revision of: IS 16502:2021	Safety of Machinery-Electro-Sensitive Protective Equipment Part 4 Particular Requirements for Equipment Using Vision Based Protective Devices VBPD Section 2 Additional Requirements When Using Reference Pattern Techniques VBPDPP First Revision
27	ETD 44 (23808) Revision of: IS 16502:2021	Safety of Machinery-Electro-Sensitive Protective Equipment Part 4 Particular Requirements for Equipment Using Vision Based Protective Devices VBPD Section 3 Additional Requirements When Using Stereo Vision Techniques VBPDST First Revision
28	ETD 44 (24767)	Safety of Machinery - Safety-Related Sensors Used for the Protection of Persons Part 3 Sensor Technologies and Algorithms
29	ETD 44 (24808)	Safety of Machinery - Guidelines on Functional Safety of Safety-Related Control System
30	ETD 44 (25936) Revision of: IS 16504:2017	Safety of Machinery - Electrical Equipment of Machines Part 32 Requirements for Hoisting Machines First Revision
31	ETD 44 (25950) Revision of: IS 17521:2021	Safety of Machinery Security Aspects Related to Functional Safety of Safety Related Control Systems First Revision
32	ETD 44 (25966)	Safety of Machinery Electro-Sensitive Protective Equipment Part 5 Particular Requirements for Radar-Based Protective Devices
33	ETD 44 (27543)	Safety of Machinery - Electrical Equipment of Machines Part 1 General Requirements First Revision Amendment - 1

Total Published Standards:24 Total Standards Under development:33

Aspect Wise Report

Product : 3
Code of Practices : 4
Methods of Test : 0
Terminology : 0
Dimensions : 0
System Standard : 0
Safety Standard : 6
Others : 8
Service Specification : 0
Process Specification : 0
Unclassified : 3

Annexure-I :List of Indian Standards Withdrawn/Superseded

Sl. No.	IS No. & Year	Title
1	IS 1356 (Part 1):1972 IEC Pub 204-1	Specification for electrical equipment of machine tools Part 1 electrical equipment of machines for general use Second Revision
2	IS 16594 (Part 1):2017 IEC 61496-1 : 2012 IEC 61496-1 : 2012	Safety of machinery - ElectroSensitive protective equipment Part 1 general requirements and tests

Annexure-II :List of Indian Product Standards

Sl. No.	IS No. & Year	Title
1	IS 16502 (Part 4/Sec 3):2024 61496-4-3:2022	Safety of Machinery Electro-Sensitive Protective Equipment Part 4 Particular Requirements for Equipment Using Vision Based Protective Devices VBPD Section 3 Additional Requirements When Using Stereo Vision Techniques VBPDST First Revision
2	IS 16502 (Part 1):2023 IEC 61496-1 : 2020 ISO 14045: 2012	Safety of Machinery - ElectroSensitive Protective Equipment Part 1 General Requirements and Tests
3	IS 16502 (Part 2):2023 IEC 61496-2:2020	Safety of Machinery - ElectroSensitive Protective Equipment Part 2 Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices AOPDs First Revision

