

# 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*

## Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 16501 : 2023 IEC 62061 : 2005 <span style="color: green;">IEC 62061:2021</span>	Safety of Machinery - Functional Safety of Safety-Related Control Systems ( First Revision )		-	Identical under dual numbering
2	IS 16501 (Part 1) : 2020 IEC TR 62061-1 : 2010 <span style="color: green;">IEC TR 62061-1 : 2010</span>	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
3	IS 16502 (Part 1) : 2023 IEC 61496-1 : 2020 <span style="color: green;">IEC 61496-1 : 2020</span>	Safety of Machinery - ElectroSensitive Protective Equipment Part 1 General Requirements and Tests		-	Identical under dual numbering
4	IS 16502 (Part 2) : 2023 IEC 61496-2:2020 <span style="color: green;">IEC 61496-2:2020</span>	Safety of Machinery - ElectroSensitive Protective Equipment Part 2 Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDs) ( First Revision )		-	Identical under dual numbering
5	IS/ISO 16502-3 : 2020 IEC 61496-3 : 2018 <span style="color: green;">IEC 61496-3 : 2018</span>	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
6	IS 16502 (Part 4) :	Safety of Machinery - Electro-		-	Identical under dual

	2021 IEC TS 61496-4-2 : 2014 61496-4-2:2022	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 )			numbering
7	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 (VBPDPP) ( First Revision )		-	Identical under dual numbering
8	IS 16502 (Part 11) : 2021 IEC TS 61496-4-3 : 2015 61496-4-3:2022	Safety of Machinery - ElectroSensitive Protective Equipment - Particular Requirements for Equipment Using Vision Based Protective Devices (VBPD) - Additional Requirements when Using Stereo Vision Techniques ( VBPDST )		-	Identical under dual numbering
9	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
10	IS 16503 (Part 1) : 2017 IEC 61310-1 : 2007 Reviewed In : 2024 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 2) : 2017 IEC 61310-2 : 2007 Reviewed In : 2022 IEC 61310-2 : 2007	Safety of Machinery - Indication, Marking and Actuation Part 2 Requirements for Marking	January, 2022	-	Identical under dual numbering
12	IS 16503 (Part 3) : 2017 IEC 61310-3 : 2007 Reviewed In : 2024 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
13	IS 16504 (Part 1) : 2019 IEC 60204-1 : 2016 Reviewed In : 2024 IEC 60204-1 : 2016	Safety of Machinery — Electrical Equipment of Machines Part 1 General Requirements ( First Revision )	May, 2024	-	Identical under dual numbering
14	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

15	IS 16504 (Part 31) : 2019 IEC 60204-31 : 2013 Reviewed In : 2024 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
16	IS 16504 (Part 32) : 2017 IEC 60204-32 : 2008 Reviewed In : 2024 IEC 60204-32 : 2008	Safety of Machinery - Electrical Equipment of Machines Part 32 Requirements for Hoisting Machines	May, 2024	-	Identical under dual numbering
17	IS 16504 (Part 33) : 2019 Reviewed In : 2024 IEC 60204-33 : 2009	Safety of Machinery - Electrical Equipment of Machines Part 33 Requirements for Semiconductor Fabrication Equipment	May, 2024	-	Identical under dual numbering
18	IS 16504 (Part 34) : 2019 IEC TS 60204-34 : 2016 Reviewed In : 2024 IEC 60204-34 : 2016	Safety of Machinery - Electrical Equipment of Machines Part 34 Requirements for Machine Tools	May, 2024	-	Identical under dual numbering
19	IS 16936 : 2018 IEC TR 62513 : 2008 Reviewed In : 2024 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 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

### Standards under Development

#### Projects Approved

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

#### Preliminary Draft Standards

SI. No.	Doc No.	Title
1	ETD 44 (25936) <span style="color: green;">Revision of: IS 16504:2017</span>	Safety of Machinery - Electrical Equipment of Machines Part 32 Requirements for Hoisting Machines First Revision
2	ETD 44 (25950) <span style="color: green;">Revision of: IS 17521:2021</span>	Safety of Machinery Security Aspects Related to Functional Safety of Safety Related Control Systems First Revision

3	ETD 44 (25966)	Safety of Machinery Electro-Sensitive Protective Equipment Part 5 Particular Requirements for Radar-Based Protective Devices
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### Drafts Standards in WC Stage

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

### Draft Standards Completed WC Stage

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

### Finalized Draft Indian Standard

Sl. No.	Doc No.	Title
1	ETD 44 (24766)	SAFETY OF MACHINERY PART 2 EXAMPLES OF APPLICATION
2	ETD 44 (24767)	SAFETY OF MACHINERY SAFETY-RELATED SENSORS USED FOR THE PROTECTION OF PERSONS PART 3 SENSOR TECHNOLOGIES AND ALGORITHMS
3	ETD 44 (24808)	SAFETY OF MACHINERY GUIDELINES ON FUNCTIONAL SAFETY OF SAFETY-RELATED CONTROL SYSTEM

### Finalized Draft Indian Standards under Print

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

**Total Published Standards:21 Total Standards Under development:6**

### 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 : 0

### Annexure-I :List of Indian Standards Withdrawn/Superseded

Sl. No.	IS No. & Year	Title
1	IS 1356 (Part 1) : 1972 Reviewed In : 2021 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 Reviewed In : 2022 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 1) : 2023	Safety of Machinery - ElectroSensitive Protective Equipment Part 1 General Requirements and

	IEC 61496-1 : 2020	Tests
2	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
3	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