

BUREAU OF INDIAN STANDARDS

Program of Work

TXD 32 : Textiles Protective Clothing

Scope: To formulate Indian Standards for testing and specification for textile protective clothing for protection from fire and other health/life hazards.

Liaison: **ISO TC-94 (P): Personal safety -- Personal protective equipment ISO TC-94 SC-13 (P): Protective clothing ISO TC-94 SC-14 (P): Firefighters' personal equipment**

Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 10054 : 1996 <i>Reviewed In : 2022</i>	Textiles – High density polyethylene (HDPE) monofilament mosquito netting, round mesh – Specification (first revision)	October, 2022	1	Indigenous
2	IS 1097 : 1979 <i>Reviewed In : 2018</i>	Specification for handloom cotton mosquito netting (first revision)	July, 2018	1	Indigenous
3	IS 1143 : 1973 <i>Reviewed In : 2023</i>	Specification for cotton mosquito netting, square mesh (first revision)	July, 2023	2	Indigenous
4	IS 11871 : 1986 <i>Reviewed In : 2023</i>	Methods for determination of flammability and flame resistance of textile fabrics	January, 2023	-	Indigenous
5	IS 12467 (Part 1) : 2006 <i>Reviewed In : 2023</i>	Textiles – Assessment of the ignitability of upholstered furniture Part 1 Ignition source: smouldering cigarette (first revision)	January, 2023	-	Indigenous
6	IS 12467 (Part 2) : 2006 <i>Reviewed In : 2023</i>	Textiles – Assessment of the ignitability of upholstered furniture Part 2 Ignition source: match flame equivalent (first revision)	January, 2023	-	Indigenous
7	IS 12722 : 1989 <i>Reviewed In : 2023</i>	Textile floor coverings – Determination of flame resistance by tablet test	January, 2023	-	Indigenous
8	IS 13501 : 1992 <i>Reviewed In : 2023</i>	Textiles - Determination of flammability by oxygen index	January, 2023	1	Indigenous
9	IS 1431 : 1973 <i>Reviewed In : 2021</i>	Specification for cotton mosquito netting, round mesh (first revision)	August, 2021	3	Indigenous
10	IS 14744 : 1999 <i>Reviewed In : 2019</i>	Flame retardent protective hoods - Specification	November, 2019	-	Indigenous
11	IS 14953 : 2006 <i>Reviewed In : 2021</i>	Textiles – Polyester or polyamide mosquito nets – Specification (first revision)	August, 2021	1	Indigenous
12	IS 15071 : 2002 <i>Reviewed In : 2019</i> ISO 16602:2007	Chemical protective clothing - Specification	November, 2019	-	Not Equivalent
13	IS 15321 : 2003 <i>Reviewed In : 2019</i>	Molten metal splash protective hoods - Specification	November, 2019	-	Indigenous

14	IS 15589 : 2005 ISO 6940 Reviewed In : 2023 ISO 6940:2004	Textiles fabrics – Burning behaviour – Determination of ease of ignition of vertically oriented specimens	January, 2023	-	Identical under dual numbering
15	IS 15590 : 2005 ISO 6941 Reviewed In : 2023 ISO 6941:2003	Textile fabrics - Burning behaviour - Measurement of flame spread properties of vertically oriented specimens	January, 2023	-	Identical under dual numbering
16	IS 15612 (Part 1) : 2005 Reviewed In : 2023	Textiles – Burning behaviour of curtains and drapes Part 1 Classification scheme	January, 2023	-	Indigenous
17	IS 15612 (Part 2) : 2006 Reviewed In : 2023	Textiles – Burning behaviour of curtains and drapes Part 2 Measurement of flame spread of vertically oriented specimens with large ignition source	January, 2023	-	Indigenous
18	IS 15612 (Part 3) : 2005 Reviewed In : 2023	Textiles – Burning behaviour of curtains and drapes Part 3 Method for determining the ignitability of vertically oriented specimens (Small flame)	January, 2023	-	Indigenous
19	IS 15612 (Part 4) : 2005 Reviewed In : 2023	Textiles – Burning behaviour of curtains and drapes Part 4 Method for determining the flame spread of vertically oriented specimens	January, 2023	-	Indigenous
20	IS 15727 (Part 1) : 2020 ISO 12952-1 : 2010 ISO 12952-1:2010	Textiles – Assessment of the ignitability of bedding items Part 1 Ignition source: Smouldering cigarette (first revision)	-	-	Identical under single numbering
21	IS 15727 (Part 2) : 2020 ISO 12952-2 : 2010 ISO 12952-2:2010	Textiles – Assessment of the ignitability of bedding items Part 2 Ignition source: Match-flame equivalent (first revision)	-	-	Identical under single numbering
22	IS 15741 : 2007 Reviewed In : 2023	Textiles - Resistance to ignition of curtains and drapes - Specification	January, 2023	1	Indigenous
23	IS 15742 : 2007 Reviewed In : 2023	Textiles - Requirements for clothing made of limited flame spread materials and material assemblies affording protection against heat and flame - Specification	January, 2023	1	Indigenous
24	IS 15748 : 2022 ISO 11612:2015 ISO 11612:2015	Protective clothing - Clothing to protect against heat and flame - Minimum performance requirements (first revision)		-	Identical under dual numbering
25	IS 15758 (Part 1) : 2020 ISO 9151 : 2016 ISO 9151:2016	Textiles – Protective clothing Part 1 Determination of heat transmission on exposure to flame (first revision)	-	-	Identical under dual numbering
26	IS 15758 (Part 2) : 2007 ISO ISO 6942 Reviewed In : 2023 ISO 6942:2002	Textiles – Protective clothing Part 2 Assessment of material assemblies when exposed to source of radiant heat	January, 2023	-	Identical under dual numbering
27	IS 15758 (Part 3) : 2007 ISO 6530 Reviewed In : 2023 ISO 6530:2005	Textiles – Protective clothing Part 3 Test methods for resistance of materials to penetration by liquids	January, 2023	-	Identical under dual numbering

28	IS 15758 (Part 4) : 2020 ISO 15025 : 2016 ISO 15025:2016	Textiles – Protective clothing Part 4 Method of test for limited flame spread (first revision)	-	-	Identical under dual numbering
29	IS 15758 (Part 5) : 2020 ISO 9185 : 2007 ISO 9185:2007	Textiles – Protective clothing Part 5 Assessment of resistance of materials to molten metal splash (first revision)	-	-	Identical under dual numbering
30	IS 15764 : 2008 Reviewed In : 2023	Textiles - Determination of burning behaviour of textile floor coverings	January, 2023	-	Indigenous
31	IS 15768 : 2008 Reviewed In : 2023	Textiles – Resistance to ignition of upholstered composites used for non-domestic furniture – Specification	January, 2023	1	Indigenous
32	IS 15781 : 2008 Reviewed In : 2023	Textiles - Method for determination of flammability of blankets	January, 2023	-	Indigenous
33	IS 15782 : 2008 Reviewed In : 2023	Textiles - Method for determining deterioration of visibility due to smoke released on combustion of materials	January, 2023	-	Indigenous
34	IS 15809 : 2017 Reviewed In : 2022 ISO 20471:2013	High visibility warning clothes – Specification (first revision)	March, 2022	-	Not Equivalent
35	IS 16655 : 2017 ISO 11611 : 2015 Reviewed In : 2022 ISO 11611:2015	Textiles - Protective clothing for use in welding and allied processes	April, 2022	1	Identical under dual numbering
36	IS 16725 : 2018 Reviewed In : 2023	Textiles - Tactical 3 points sling universal - Specification	March, 2023	-	Indigenous
37	IS 16726 : 2018 Reviewed In : 2023	Textiles – Pouch for ammunition and grenades made of disruptive pattern nylon 6 6 – Specification	March, 2023	-	Indigenous
38	IS 16874 : 2018 Reviewed In : 2023	Textiles - Protective gloves for firefighters - Specification	March, 2023	-	Indigenous
39	IS 16890 : 2018 Reviewed In : 2023	Textiles - Protective clothing for firefighters - Specification	March, 2023	1	Indigenous
40	IS 17051 : 2018 Reviewed In : 2023	Textiles - Bullet resistant jackets - Performance requirements	March, 2023	3	Indigenous
41	IS 17286 : 2019	Textiles – Water-proof multipurpose rain poncho with convertibility as bivouac – Specification		-	Indigenous
42	IS 17291 : 2019	Textiles – Flame retardant jute based decorative and cover fabric for temporary structure – Specification		-	Indigenous
43	IS 17377 (Part 1) : 2020	Textiles – Nuclear Biological Chemical (NBC) permeable protective clothing Part 1 Qualitative method of determining breakthrough time on exposure to chemical warfare agent – Sulfur		-	Indigenous

		mustard (HD)			
44	IS 17377 (Part 2) : 2020	Textiles – Nuclear Biological Chemical (NBC) permeable protective clothing Part 2 Quantitative method of determining permeation resistance on exposure to chemical warfare agent – Sulfur mustard (HD)		-	Indigenous
45	IS 17380 : 2020	Textiles – Test method for permeation testing of protective ensembles with nerve agents or simulants		-	Indigenous
46	IS 17462 (Part 1) : 2020 ISO 12127-1 : 2015 ISO 12127-1:2015	Clothing for Protection against Heat and Flame - Determination of Contact Heat Transmission through Protective Clothing or Constituent Materials Part 1 Contact Heat Produced by Heating Cylinder		-	Identical under dual numbering
47	IS 17462 (Part 2) : 2020 ISO 12127-2 : 2007 ISO 12127-2:2007	Clothing for Protection against Heat and Flame – Determination of Contact Heat Transmission through Protective Clothing or Constituent Materials Part 2 Test Method using Contact Heat Produced by Dropping Small Cylinders		-	Identical under dual numbering
48	IS 17463 : 2020 ISO 13994:2005 ISO 13994:2005	Clothing for protection against liquid chemicals Determination of the resistance of protective clothing materials to penetration by liquids under pressure		-	Identical under dual numbering
49	IS 17464 : 2020 ISO 13995 : 2000 ISO 13995:2000	Protective Clothing - Mechanical Properties - Test Method for the Determination of the Resistance to Puncture and Dynamic		-	Identical under dual numbering
50	IS 17465 : 2020 ISO 13996 : 1999 ISO 13996:1999	Protective Clothing - Mechanical Properties - Determination of Resistance to Puncture		-	Identical under dual numbering
51	IS 17466 : 2020 ISO 13997 : 1999 ISO 13997:1999	Protective Clothing - Mechanical Properties - Determination of Resistance to Cutting by Sharp Objects		-	Identical under dual numbering
52	IS 17467 (Part 1) : 2020 ISO 17491-1:2012 ISO 17491-1:2012	Protective clothing Test methods for clothing providing protection against chemicals Part 1: Determination of resistance to outward leakage of gases internal pressure test		-	Identical under dual numbering
53	IS 17467 (Part 2) : 2020 ISO 17491-2 : 2012 ISO 17491-2:2012	Protective Clothing - Test Methods for Clothing Providing Protection against Chemicals Part 2 Determination of Resistance to Inward Leakage of Aerosols and Gases (Inward Leakage Test)		-	Identical under dual numbering
54	IS 17467 (Part 3) : 2020 ISO 17491-4 : 2008 ISO 17491-3:2008	Protective Clothing - Test Methods for Clothing Providing Protection against Chemicals Part 4 Determination of Resistance to Penetration by a Spray of Liquid (-	Identical under dual numbering

		Spray Test)			
55	IS 17467 (Part 4) : 2020 ISO 17491-4 : 2008 ISO 17491-4:2008	Protective Clothing - Test Methods for Clothing Providing Protection against Chemicals Part 4 Determination of Resistance to Penetration by a Spray of Liquid (Spray Test)		-	Identical under dual numbering
56	IS 17467 (Part 5) : 2020 ISO 17491-5 : 2013 ISO 17491-5:2013	Protective Clothing - Test Methods for Clothing Providing Protection against Chemicals Part 5 Determination of Resistance to Penetration by a Spray of Liquid (Manikin Spray Test)		-	Identical under dual numbering
57	IS 17468 : 2020 ISO 17493:2016	Clothing and Equipment for Protection against Heat - Test Method for Convective Heat Resistance using a Hot Air Circulating Oven		-	Identical under dual numbering
58	IS 17881 (Part 1) : 2022 ISO 13506-1:2017	Protective clothing against heat and flame - Part 1 Test method for complete garments - Measurement of transferred energy using an instrumented manikin		-	
59	IS 17881 (Part 2) : 2022 ISO 13506-2:2017	Protective clothing against heat and flame - Part 2 Skin burn injury prediction - Calculation requirements and test cases		-	
60	IS 4355 : 1977 Reviewed In : 2022	Specification for fire-resistant brattice cloth (first revision)	July, 2022	1	Indigenous
61	IS 6994 (Part 1) : 2021 ISO 374-1 : 2016 ISO 374-1 : 2016	Protection of Arms and Hands Part 1 Protective Gloves against Dangerous Chemicals and Micro- organisms-Terminology and performance requirements for chemical risks (First revision)		-	Identical under dual numbering
62	IS 6994 (Part 2) : 2021 ISO 374-2 : 2019 ISO 374-2 : 2019	Protection of Arms and Hands Part 2 Protective Gloves against Dangerous Chemicals and Micro- organisms- Determination of resistance to penetration		-	Identical under dual numbering
63	IS 6994 (Part 4) : 2021 ISO 374-4 : 2019 ISO 374-4 : 2019	Protection of Arms and Hands Part 4 Protective Gloves against Dangerous Chemicals and Micro- organisms- Determination of resistance to degradation by chemicals		-	Identical under dual numbering
64	IS 6994 (Part 5) : 2021 ISO 374-5 : 2016 ISO 374-5 : 2016	Protection of Arms and Hands Part 5 Protective Gloves against Dangerous Chemicals and Micro- organisms - Terminology and performance requirements for micro-organisms risks		-	Identical under dual numbering
65	IS 6994 (Part 6) : 2021 ISO 23388 : 2018 ISO 23388 : 2018	Protection of Arms and Hands Part 6 Protective gloves against mechanical risks		-	Identical under dual numbering
66	IS 6994 (Part 7) : 2021 ISO 21420 : 2020	Protection of Arms and Hands Part 7 Protective Gloves – General requirements and test methods		-	Identical under single numbering

	ISO 21420 : 2020				
67	IS 6994 (Part 8) : 2021 ISO 18889 : 2019 ISO 18889 : 2019	Protection of Arms and Hands Part 8 Protective Gloves for Pesticide Operators and Re-entry Workers — Performance Requirements		-	Identical under dual numbering
68	IS 6994 (Part 9) : 2021 ISO 13999-1 :1999 ISO 13999-1 :1999	Protection of Arms and Hands Part 9 Protective clothing - Gloves and arm guards protecting against cuts and stabs by hand knives- Chain-mail gloves and arm guards		-	Identical under single numbering
69	IS 6994 (Part 10) : 2021 ISO 13999-2 : 2003 ISO 13999-2 : 2003	Protection of Arms and Hands Part 10 Protective clothing- Gloves and arm guards protecting against cuts and stabs by hand knives - Gloves and arm guards made of material other than chain mail		-	Identical under single numbering
70	IS 6994 (Part 11) : 2021 ISO 13999-3 : 2002 ISO 13999-3 : 2002	Protection of Arms and Hands Part 11 Protective clothing – Gloves and arm guards protecting against cuts and stabs by hand knives - Impact cut test for fabric, leather and other materials		-	Identical under single numbering
71	IS 6994 (Part 12) : 2021 ISO 11393-4 : 2018 ISO 11393-4 : 2018	Protection of Arms and Hands Part 12 Protective clothing for users of handheld chainsaws — Performance requirements and test methods for protective gloves		-	Identical under dual numbering
72	IS 8990 : 1978 Reviewed In : 2023	Code of practice for maintenance and care of industrial safety clothing	May, 2023	-	Indigenous
73	IS 9886 : 1990 Reviewed In : 2019	Mosquito nets – Specification (first revision)	December, 2019	1	Indigenous

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	TXD 32 (25486)	Textiles - High Density Polyethylene HDPE Monofilament Mosquito Netting Round Mesh - Specification First revision
2	TXD 32 (25487)	Textiles - Determination of Flammability by Oxygen Index
3	TXD 32 (25492)	Textile Floor Coverings Determination of Flame Resistance by Tablet Test
4	TXD 32 (25824)	Textiles Fire resistant fabric made of Cotton Man-made fibresfilaments and their blends General

		and Performance Requirements
5	TXD 32 (25852)	Textiles - Protective Clothing for Firefighters - Specification First revision

Finalized Draft Indian Standard

Sl. No.	Doc No.	Title
1	TXD 32 (25883)	Protective clothing - Clothing to protect against heat and flame - Minimum performance requirements first revision Amendment - 2

Finalized Draft Indian Standards under Print

Sl. No.	Doc No.	Title
1	TXD 32 (22344)	Textiles Workwear for cement workers Specification
2	TXD 32 (24726)	Cleaning Inspection and Repair of Firefighters Personal Protective Equipment PPE
3	TXD 32 (24727)	Wildland firefighting personal protective equipment Requirements and test methods Part 4 Gloves
4	TXD 32 (24728)	Wildland firefighting personal protective equipment Requirements and test methods part 3 Clothing
5	TXD 32 (25496)	Textiles - Tactical 3 points sling universal - Specification Amendment - 1
6	TXD 32 (25500)	Textiles - Protective gloves for firefighters - Specification Amendment - 1
7	TXD 32 (25716)	Protective clothing - Clothing to protect against heat and flame - Minimum performance requirements first revision Amendment - 1
8	TXD 32 (25889)	High visibility warning clothes Specification first revision Amendment - 1
9	TXD 32 (25892)	Textiles Protective clothing for use in welding and allied processes Amendment - 2
10	TXD 32 (26172)	Textiles Resistance to Ignition of Upholstery Fabrics used for Non-Domestic Furniture Amendment - 2

Total Published Standards:73 Total Standards Under development:16

Aspect Wise Report

Product : 30
Code of Practices : 1
Methods of Test : 39
Terminology : 0
Dimensions : 0
System Standard : 0
Safety Standard : 0
Others : 1
Service Specification : 0
Process Specification : 0
Unclassified : 2

Annexure-I :List of Indian Standards Withdrawn/Superseded

Sl. No.	IS No. & Year	Title
1	IS 15727 (Part 3) : 2007 ISO 12952-3 Reviewed In : 2018 ISO 12952-3:1998	Textiles - Burning behaviour of bedding items Part 3 general test methods for the ignitability by a small open flame
2	IS 15727 (Part 4) : 2007 ISO 12952-4 Reviewed In : 2018 ISO 12952-4:1998	Textiles - Burning behaviour of bedding items Part 4 specific test methods for the ignitability by a small open flame

Annexure-II :List of Indian Product Standards

Sl. No.	IS No. & Year	Title
1	IS 10054 : 1996	Textiles High density polyethylene HDPE monofilament mosquito netting round mesh

	Reviewed In : 2022	Specification first revision
2	IS 1097 : 1979 Reviewed In : 2018	Specification for handloom cotton mosquito netting first revision
3	IS 1143 : 1973 Reviewed In : 2023	Specification for cotton mosquito netting square mesh first revision
4	IS 1431 : 1973 Reviewed In : 2021	Specification for cotton mosquito netting round mesh first revision
5	IS 14744 : 1999 Reviewed In : 2019	Flame retardent protective hoods - Specification
6	IS 15071 : 2002 Reviewed In : 2019 ISO 16602:2007	Chemical protective clothing - Specification
7	IS 15321 : 2003 Reviewed In : 2019	Molten metal splash protective hoods - Specification
8	IS 15741 : 2007 Reviewed In : 2023	Textiles - Resistance to ignition of curtains and drapes - Specification
9	IS 15742 : 2007 Reviewed In : 2023	Textiles - Requirements for clothing made of limited flame spread materials and material assemblies affording protection against heat and flame - Specification
10	IS 15748 : 2022 ISO 11612:2015	Protective clothing - Clothing to protect against heat and flame - Minimum performance requirements first revision
11	IS 15768 : 2008 Reviewed In : 2023	Textiles Resistance to ignition of upholstered composites used for non-domestic furniture Specification
12	IS 15809 : 2017 Reviewed In : 2022 ISO 20471:2013	High visibility warning clothes Specification first revision
13	IS 16655 : 2017 ISO 11611 : 2015 Reviewed In : 2022 ISO 11611:2015	Textiles - Protective clothing for use in welding and allied processes
14	IS 16725 : 2018 Reviewed In : 2023	Textiles - Tactical 3 points sling universal - Specification
15	IS 16726 : 2018 Reviewed In : 2023	Textiles Pouch for ammunition and grenades made of disruptive pattern nylon 6 6 Specification
16	IS 16874 : 2018 Reviewed In : 2023	Textiles - Protective gloves for firefighters - Specification
17	IS 16890 : 2018 Reviewed In : 2023	Textiles - Protective clothing for firefighters - Specification
18	IS 17051 : 2018 Reviewed In : 2023	Textiles - Bullet resistant jackets - Performance requirements
19	IS 17286 : 2019	Textiles Water-proof multipurpose rain poncho with convertibility as bivouac Specification
20	IS 17291 : 2019	Textiles Flame retardant jute based decorative and cover fabric for temporary structure Specification
21	IS 4355 : 1977 Reviewed In : 2022	Specification for fire-resistant brattice cloth first revision
22	IS 6994 (Part 1) : 2021 ISO 374-1 : 2016	Protection of Arms and Hands Part 1 Protective Gloves against Dangerous Chemicals and Micro-organisms-Terminology and performance requirements for chemical risks First revision
23	IS 6994 (Part 5) : 2021 ISO 374-5 : 2016	Protection of Arms and Hands Part 5 Protective Gloves against Dangerous Chemicals and Micro-organisms - Terminology and performance requirements for micro-organisms risks

	IEC 62680-1-5 :2019	
24	IS 6994 (Part 6) : 2021 ISO 23388 : 2018 IEC 62680-1-6:2019	Protection of Arms and Hands Part 6 Protective gloves against mechanical risks
25	IS 6994 (Part 7) : 2021 ISO 21420 : 2020 IEC 62680-1-7:2019	Protection of Arms and Hands Part 7 Protective Gloves General requirements and test methods
26	IS 6994 (Part 8) : 2021 ISO 18889 : 2019 IEC 62680-1-8:2019	Protection of Arms and Hands Part 8 Protective Gloves for Pesticide Operators and Re-entry Workers Performance Requirements
27	IS 6994 (Part 9) : 2021 ISO 13999-1 :1999 IEC 62680-2-2:2015	Protection of Arms and Hands Part 9 Protective clothing - Gloves and arm guards protecting against cuts and stabs by hand knives- Chain-mail gloves and arm guards
28	IS 6994 (Part 10) : 2021 ISO 13999-2 : 2003 IEC 62680-2-3:2015	Protection of Arms and Hands Part 10 Protective clothing- Gloves and arm guards protecting against cuts and stabs by hand knives - Gloves and arm guards made of material other than chain mail
29	IS 6994 (Part 12) : 2021 ISO 11393-4 : 2018	Protection of Arms and Hands Part 12 Protective clothing for users of handheld chainsaws Performance requirements and test methods for protective gloves
30	IS 9886 : 1990 Reviewed In : 2019	Mosquito nets Specification first revision