

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 ISO TC-38 (P): Textiles**

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> <i>ISO 16602:2007</i>	Chemical protective clothing - Specification	November, 2019	-	Not Equivalent

13	IS 15321 : 2003 Reviewed In : 2019	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)		2	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	Textiles – Protective clothing Part 3 Test methods for resistance of materials to penetration by liquids	January, 2023	-	Identical under dual numbering

	Reviewed In : 2023 ISO 6530:2005				
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	2	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	2	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	2	Identical under dual numbering
36	IS 16725 : 2018 Reviewed In : 2023	Textiles - Tactical 3 points sling universal - Specification	March, 2023	1	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	1	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 Reviewed In : 2024	Textiles – Water-proof multipurpose rain poncho with convertibility as bivouac – Specification	March, 2024	-	Indigenous
42	IS 17291 : 2019 Reviewed In : 2024	Textiles – Flame retardant jute based decorative and cover fabric for temporary structure – Specification	March, 2024	-	Indigenous
43	IS 17377 (Part 1) : 2020	Textiles – Nuclear Biological Chemical (NBC) permeable protective clothing Part 1 Qualitative method of determining		-	Indigenous

		breakthrough time on exposure to chemical warfare agent – Sulfur 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	Protective Clothing - Test Methods for Clothing Providing Protection against Chemicals Part 4		-	Identical under dual numbering

	ISO 17491-3:2008	Determination of Resistance to Penetration by a Spray of Liquid (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 18589 (Part 3) : 2024 ISO 16073-3:2019 ISO 16073-3:2019	Wildland firefighting personal protective equipment - Requirements and test methods part 3: Clothing		-	Identical under dual numbering
61	IS 18589 (Part 4) : 2024 ISO 16073-4 : 2019 ISO 16073-4 : 2019	Wildland firefighting personal protective equipment Requirements and test methods Part 4: Gloves		-	Identical under dual numbering
62	IS 18804 : 2024 ISO 23616 : 2022 ISO 23616 : 2022	Cleaning Inspection and Repair of Firefighters Personal Protective Equipment PPE		-	Identical under dual numbering
63	IS 18849 : 2024	Textiles - Workwear for cement workers - Specification		-	Indigenous
64	IS 18931 : 2024	Textiles - Fire resistant fabric made of Cotton Man-made fibres/filaments and their blends - General and Performance Requirements		-	Indigenous
65	IS 4355 : 1977 Reviewed In : 2022	Specification for fire-resistant brattice cloth (first revision)	July, 2022	1	Indigenous
66	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
67	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		-	Identical under dual numbering

		resistance to penetration			
68	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
69	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
70	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
71	IS 6994 (Part 7) : 2021 ISO 21420 : 2020 ISO 21420 : 2020	Protection of Arms and Hands Part 7 Protective Gloves – General requirements and test methods		-	Identical under single numbering
72	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
73	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
74	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
75	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
76	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
77	IS 8990 : 1978 Reviewed In : 2023	Code of practice for maintenance and care of industrial safety clothing	May, 2023	-	Indigenous
78	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
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No Records Found

Preliminary Draft Standards

SI. No.	Doc No.	Title
No Records Found		

Drafts Standards in WC Stage

SI. No.	Doc No.	Title
No Records Found		

Draft Standards Completed WC Stage

SI. No.	Doc No.	Title
1	TXD 32 (26570)	TEXTILES - RESISTANCE TO IGNITION OF FIRE-RESISTANT UPHOLSTERY FABRICS SPECIFICATION FIRST REVISION
2	TXD 32 (26571)	Textiles - Requirements for Clothing Made of Limited Flame Spread Materials for Protection against Heat and Flame - Specification First Revision

Finalized Draft Indian Standard

SI. No.	Doc No.	Title
No Records Found		

Finalized Draft Indian Standards under Print

SI. No.	Doc No.	Title
1	TXD 32 (25486) Revision of: IS 10054:1996	Textiles - High Density Polyethylene HDPE Monofilament Mosquito Netting Round Mesh - Specification Second revision
2	TXD 32 (25487) Revision of: IS 13501:1992	Textiles - Determination of Flammability by Oxygen Index First revision
3	TXD 32 (25492) Revision of: IS 12722:1989	Textile Floor Coverings - Determination of Flame Resistance by Tablet Test First revision
4	TXD 32 (25852) Revision of: IS 16890:2018	Textiles - Protective Clothing for Firefighters - Specification First revision
5	TXD 32 (26574)	Protective clothing - Clothing to protect against heat and flame - Minimum performance requirements first revision Amendment - 3

Total Published Standards:73 Total Standards Under development:7

Aspect Wise Report

Product : 35
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

SI. No.	IS No. & Year	Title
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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 Reviewed In : 2022	Textiles High density polyethylene HDPE monofilament mosquito netting round mesh 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 Reviewed In : 2024	Textiles Water-proof multipurpose rain poncho with convertibility as bivouac Specification
20	IS 17291 : 2019 Reviewed In : 2024	Textiles Flame retardant jute based decorative and cover fabric for temporary structure Specification
21	IS 18589 (Part 3) : 2024 ISO 16073-3:2019	Wildland firefighting personal protective equipment - Requirements and test methods part 3 Clothing
22	IS 18589 (Part 4) : 2024 ISO 16073-4 : 2019	Wildland firefighting personal protective equipment Requirements and test methods Part 4 Gloves
23	IS 18804 : 2024 ISO 23616 : 2022	Cleaning Inspection and Repair of Firefighters Personal Protective Equipment PPE
24	IS 18849 : 2024	Textiles - Workwear for cement workers - Specification
25	IS 18931 : 2024	Textiles - Fire resistant fabric made of Cotton Man-made fibres filaments and their blends - General and Performance Requirements
26	IS 4355 : 1977 Reviewed In : 2022	Specification for fire-resistant brattice cloth first revision
27	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
28	IS 6994 (Part 5) : 2021 ISO 374-5 : 2016 IEC 62680-1-5 :2019	Protection of Arms and Hands Part 5 Protective Gloves against Dangerous Chemicals and Micro-organisms - Terminology and performance requirements for micro-organisms risks
29	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
30	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
31	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
32	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
33	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
34	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
35	IS 9886 : 1990 Reviewed In : 2019	Mosquito nets Specification first revision