

BUREAU OF INDIAN STANDARDS

Program of Work

TXD 30 : Geosynthetics

Scope: a) To formulate Indian standards on terminology, testing, specifications and codes of practices for identification, handling, storage and installation, etc. of all products made from man-made & natural materials including geo-textiles, geo-membranes, geo-grids, geo-foams, geo-composites, geo-cells, clay liners and other geo-synthetic related products. b) To liaise with the work of ISO/TC 221 Geo-synthetics Technical Committee as a participating member.

Liaison: **ISO TC-221 (P): Geosynthetics**

Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS/ISO 10769 : 2011 ISO 10769:2011 ISO 10769:2011	Clay geosynthetic barriers Determination of water absorption of bentonite		-	Identical under dual numbering
2	IS/ISO 10773 : 2011 ISO 10773:2011 ISO 10773:2011	Clay geosynthetic barriers Determination of permeability to gases		-	Identical under dual numbering
3	IS 13162 (Part 2) : 1991 Reviewed In : 2024	Geotextiles – Methods of test Part 2 Determination of resistance to exposure of ultraviolet light and water (Xenon-arc type apparatus)	March, 2024	-	Indigenous
4	IS 13162 (Part 3) : 2021 ISO 9863-1:2016 ISO 9863-1:2016	Geosynthetics - Determination of thickness at specified pressures (Part 3) : Single layers	-	-	Identical under dual numbering
5	IS 13162 (Part 4) : 1992 Reviewed In : 2024	Geotextiles – Methods of test Part 4 Determination of puncture resistance by falling cone method	March, 2024	-	Indigenous
6	IS 13321 (Part 1) : 2022 ISO 10318-1:2015 ISO 10318-1:2015	Geosynthetics - (Part 1) : Terms and definitions		-	Identical under dual numbering
7	IS 13321 (Part 2) : 2022 ISO 10318-2:2015 ISO 10318-2:2015	Geosynthetics - (Part 2) : Symbols and pictograms		-	Identical under dual numbering
8	IS 13325 : 1992 Reviewed In : 2019	Determination of tensile properties of extruded polymer geogrids using the wide strip - Test method	February, 2019	-	Indigenous
9	IS 13326 (Part 1) : 1992 Reviewed In : 2024	Evaluation of interface friction between geosynthetics and soil method of test: Part 1 modified direct shear technique	March, 2024	-	Indigenous
10	IS 14293 : 1995 Reviewed In : 2024	Geotextiles - Method of test for trapezoid tearing strength	March, 2024	-	Indigenous

11	IS 14294 : 1995 Reviewed In : 2024	Geotextiles - Method for determination of apparent opening size by dry sieving technique	March, 2024	1	Indigenous
12	IS 14324 : 1995 Reviewed In : 2024	Geotextiles – Methods of test for determination of water permeability – Permittivity	March, 2024	-	Indigenous
13	IS 14706 : 1999 Reviewed In : 2024	Geotextiles - Sampling and preparation of test specimens	March, 2024	-	Indigenous
14	IS 14714 : 1999 Reviewed In : 2024	Geotextiles - Determination of abrasion resistance	March, 2024	-	Indigenous
15	IS 14715 (Part 1) : 2016 Reviewed In : 2020	Jute geotextiles - (Part 1) Strengthening of sub-grade in roads - Specification (second revision)	May, 2020	-	Indigenous
16	IS 14715 (Part 2) : 2016 Reviewed In : 2020	Jute geotextiles - (Part 2) Control of bank erosion in rivers and waterways - Specification (second revision)	May, 2020	-	Indigenous
17	IS 14716 : 2021 ISO 9864:2005	Geosynthetics - Test method for the determination of mass per unit area of geotextiles and geotextile-related products	-	-	Modified/Technically Equivalent
18	IS 14739 : 2021 ISO 13431:1999 ISO 13431:1999	Geotextiles and geotextile-related products Determination of tensile creep and creep rupture behaviour		-	Identical under dual numbering
19	IS 14986 : 2001 Reviewed In : 2023	Guidelines for application of jute geotextile for rain water erosion control in road and railway embankments and hill slopes	March, 2023	-	Indigenous
20	IS 15060 : 2018 ISO 10321:2008 Reviewed In : 2024 ISO 10321:2008	Geosynthetics – Tensile test for joint seams by wide-width strip method (first revision)	March, 2024	-	Identical under dual numbering
21	IS 15868 (Part 16) : 2008 Reviewed In : 2023	Natural fibre geotextiles (Jute geotextile and coir BHOOVASTRA) – Methods of test	January, 2023	-	Indigenous
22	IS 15869 : 2020	Textiles – Open weave coir Bhoovastra – Specification (first revision)	-	-	Indigenous
23	IS 15871 : 2009 Reviewed In : 2024	Use of coir geotextiles (Coir BHOOVASTRA) in unpaved roads – Guidelines	March, 2024	-	Indigenous
24	IS 15872 : 2009 Reviewed In : 2019	Application of coir geotextiles (Coir woven BHOOVASTRA) for rain water erosion control in roads, railway embankments and hill slopes – Guidelines	December, 2019	-	Indigenous
25	IS 15909 : 2020	PVC Geomembranes for Lining - Specification (Second Revision)	-	-	Indigenous
26	IS 15910 : 2010 Reviewed In : 2024	Geosynthetics for highways - Specification	March, 2024	-	Indigenous
27	IS 16078 : 2013 ISO 12236 Reviewed In : 2023 ISO 12236:2006	Geosynthetics - Static puncture test (CBR Test)	January, 2023	-	Identical under dual numbering
28	IS 16090 : 2013 Reviewed In : 2023	Geo-synthetics - Geo-textiles used as protection (or cushioning)	January, 2023	1	Indigenous

		materials - Specification			
29	IS 16237 : 2014 Reviewed In : 2024	Geo-synthetics – Method for determination of apparent opening size by wet sieving	March, 2024	-	Indigenous
30	IS 16341 : 2015 Reviewed In : 2019	Geosynthetics - Standard practice for exposure and retrieval of samples to evaluate installation damage of geosynthetics	December, 2019	-	Indigenous
31	IS 16342 : 2015 Reviewed In : 2019	Geosynthetics - Method of test for grab breaking load and elongation of geotextiles	December, 2019	-	Indigenous
32	IS 16343 : 2015 Reviewed In : 2019	Geosynthetics - Guidelines for installation of geotextiles as pavement fabric	December, 2019	-	Indigenous
33	IS 16344 : 2015 Reviewed In : 2019	Geosynthetics - Guidelines for installation of geotextile for permanent erosion control in hard armor systems	December, 2019	-	Indigenous
34	IS 16345 : 2020	Geosynthetics – Guidelines for installation of geotextile used in subgrade separation in pavement structures (first revision)	-	-	Indigenous
35	IS 16346 : 2015 Reviewed In : 2019	Geosynthetics - Method of test for evaluation of stress crack resistance of polyolefin geomembranes using notched constant tensile load test	December, 2019	-	Indigenous
36	IS 16347 : 2015 Reviewed In : 2019	Geosynthetics - Method of test for effects of temperature on stability of geotextile	December, 2019	-	Indigenous
37	IS 16348 : 2015 Reviewed In : 2019	Geosynthetics - Method of test for index puncture resistance of geomembranes and related products	December, 2019	-	Indigenous
38	IS 16349 : 2015 Reviewed In : 2019	Geosynthetics – Guidelines for installation of geogrids used as reinforcement of base and sub-base layers in pavement structures	December, 2019	-	Indigenous
39	IS 16351 : 2015 Reviewed In : 2019	Geosynthetics - Standard practice for laboratory immersion procedures for evaluating the chemical resistance of geosynthetics to liquids	December, 2019	-	Indigenous
40	IS 16352 : 2020	Geosynthetics – High density polyethylene (HDPE) geomembranes for lining – Specification (first revision)	-	-	Indigenous
41	IS 16355 : 2015 Reviewed In : 2019	Geosynthetics - Guidelines for installation of geogrids used as soil reinforcement in mechanically stabilised earth (MSE) retaining structures	December, 2019	-	Indigenous
42	IS 16356 : 2015 Reviewed In : 2019	Geosynthetics - Method of test for pore size characteristics of geotextiles by capillary flow test	December, 2019	-	Indigenous
43	IS 16362 : 2020	Geosynthetics - Geotextiles used in subgrade stabilization in pavement structures - Specification (first revision)	-	1	Indigenous

44	IS 16363 : 2015 Reviewed In : 2019	Geosynthetics - Guidelines for installation of geotextile used in subsurface drainage application	December, 2019	-	Indigenous
45	IS 16380 : 2020	Geosynthetics – Method of test for measuring pullout resistance of geosynthetics in soil (first revision)		-	Indigenous
46	IS 16389 : 2015 Reviewed In : 2019	Geosynthetics - Method of test for biological clogging of geotextile or soil/geotextile filters	December, 2019	-	Indigenous
47	IS 16391 : 2015 Reviewed In : 2019	Geosynthetics - Geotextiles used in sub-grade separation in pavement structures - Specification	December, 2019	1	Indigenous
48	IS 16392 : 2015 Reviewed In : 2019	Geosynthetics - Geotextiles for permanent erosion control in hard armor systems - Specification	December, 2019	1	Indigenous
49	IS 16393 : 2015 Reviewed In : 2019	Geosynthetics - Geotextiles used in subsurface drainage application - Specification	December, 2019	1	Indigenous
50	IS 16474 : 2015 Reviewed In : 2019	Geosynthetics – Method of test for tensile properties of geogrids by the single or multi-rib tensile method	December, 2019	-	Indigenous
51	IS 16475 : 2015 Reviewed In : 2019	Geosynthetics - Method of test for determination of 2 percent secant modulus for polyethylene geomembranes	December, 2019	-	Indigenous
52	IS 16477 : 2015 Reviewed In : 2019	Geosynthetics - Method of test for determination of 2 performance strenght of geomemberanes by the wide strip tensil method	December, 2019	-	Indigenous
53	IS 16483 : 2017 Reviewed In : 2023	Geosynthetics - Method for microscopic evaluation of the dispersion of carbon black in polyolefin geosynthetics	January, 2023	-	Indigenous
54	IS 16493 : 2017 Reviewed In : 2023	Geosynthetics – Method of test for determination of pyramid puncture resistance of unprotected and protected geomembranes	January, 2023	-	Indigenous
55	IS 16635 : 2017 ISO 10319 : 2015 Reviewed In : 2023 ISO 10319:2015	Geosynthetics - Wide - Width tensile test	January, 2023	-	Identical under dual numbering
56	IS 16653 : 2017 Reviewed In : 2023	Geosynthetics - Needle punched nonwoven geobags for coastal and waterways protection - Specification	January, 2023	1	Not Equivalent
57	IS 16654 : 2017 Reviewed In : 2023	Geosynthetics - Polypropylene multifilament woven geobags for coastal and waterways protection - Specification	January, 2023	-	Indigenous
58	IS 17179 : 2019 ISO 12958 : 2010 Reviewed In : 2024 ISO 12958 : 2010	Geotextiles and geotextile-related products – Determination of water flow capacity in their plane	March, 2024	-	Identical under dual numbering
59	IS 17360 : 2020 ISO 13438 : 2018 ISO 13438:2018	Geosynthetics – Screening test method for determining the resistance of geotextiles and geotextile-related products to oxidation		-	Identical under single numbering

60	IS 17363 : 2020 ISO TR 12960 : 1998 ISO/TR 12960	Geotextiles and geotextile-related products – Screening test method for determining the resistance to liquids		-	Identical under single numbering
61	IS 17365 : 2020 ISO TR 20432 : 2007 ISO/TR 20432:2007	Guidelines for the determination of the long-term strength of geosynthetics for soil reinforcement		-	Identical under single numbering
62	IS 17368 : 2020	Geosynthetics – Determination of damage to geosynthetic caused during installation		-	Indigenous
63	IS 17369 (Part 1) : 2020 ISO 13426-1 : 2019 ISO 13426-1:2019	Geotextiles and geotextile-related products – Strength of internal structural junctions Part 1 Geocells		-	Identical under dual numbering
64	IS 17369 (Part 2) : 2020 ISO 13426-2 : 2005 ISO 13426-2:2005	Geotextiles and geotextile-related products – Strength of internal structural junctions Part 2 Geocomposites		-	Identical under single numbering
65	IS 17371 : 2020	Geosynthetics – Geogrids for flexible pavements – Specification		1	Indigenous
66	IS 17372 : 2020	Geosynthetics – Polymeric strip/geostrip used as soil reinforcement in retaining structures – Specification		-	Indigenous
67	IS 17373 : 2020	Geosynthetics - Geogrids used in reinforced soil retaining structures - Specification		2	Indigenous
68	IS 17374 : 2020	Geosynthetics – Reinforced HDPE membrane for effluents and chemical resistance lining – Specification		-	Indigenous
69	IS 17420 : 2020 ISO 10722 : 2019 ISO 10722:2019	Geosynthetics – Index test procedure for the evaluation of mechanical damage under repeated loading – Damage caused by granular materials (Laboratory test method)		-	Identical under dual numbering
70	IS 17421 : 2020 ISO 10320 : 2019 ISO 10320:2019	Geosynthetics – Identification on site		-	Identical under single numbering
71	IS 17483 (Part 1) : 2020	Geosynthetics - Geocells - Specification (Part 1) Load Bearing Application		2	Indigenous
72	IS 17483 (Part 2) : 2020	Geosynthetics - Geocells - Specification (Part 2) Slope Erosion Protection Application		2	Indigenous
73	IS 17880 : 2022	Geosynthetics - Synthetics Polymer Rope Gabions for Coastal and Waterways Protection - Specification		-	Indigenous
74	IS 18309 : 2023	Geosynthetics- Prefabricated Vertical Drains for Quick Consolidation for Very Soft Plastic Soil - Specification		-	Indigenous
75	IS 18591 : 2024	Geosynthetic Reinforced Soil		-	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 30 (22876)	Geosynthetics-Geotextile Tubes for Coastal and Waterways Protection - Specification
2	TXD 30 (25076)	Geosynthetics - Geotextiles for Drainage Separation Filtration Erosion Control and Stabilization Applications - Specification
3	TXD 30 (25136)	Geotextiles - Methods of Test Part 2 Determination of Resistance to the Exposure of Ultraviolet Light Moisture and Heat Xenon-Arc Type Apparatus
4	TXD 30 (25137)	Geosynthetics - Method for Determination of Trapezoid Tearing Strength
5	TXD 30 (25138)	Geosynthetics - Method for Determination of Apparent Opening Size by Dry Sieving Technique
6	TXD 30 (25139)	Geotextiles - Determination of Abrasion Resistance
7	TXD 30 (25140)	Geosynthetics - Sampling and Preparation of Test Specimens
8	TXD 30 (25141)	Geotextiles and Geotextile Related Products - Determination of Water Permeability Characteristics Normal to the Plane Without Load
9	TXD 30 (25142)	Geosynthetics - Determination of Friction Characteristics Part 1 Direct Shear Test
10	TXD 30 (25143)	Geosynthetics - Dynamic Perforation Test Cone Drop Test
11	TXD 30 (25914)	Textiles - Coir Non-woven Stitched Composite Geotextiles for Erosion Control Applications - Specification

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:73 Total Standards Under development:11

Aspect Wise Report

Product : 21
Code of Practices : 10
Methods of Test : 37
Terminology : 1
Dimensions : 0

System Standard : 0
 Safety Standard : 0
 Others : 5
 Service Specification : 0
 Process Specification : 0
 Unclassified : 0

Annexure-I :List of Indian Standards Withdrawn/Superseded

SI. No.	IS No. & Year	Title
1	IS 13162 (Part 5) : 1992 Reviewed In : 2016	Geotextiles - Methods of Test - Part 5 Determination of Tensile Properties Using a Wide Width Strip
2	IS 14715 : 2000 Reviewed In : 2019	Woven jute geotextiles - Specificatton
3	IS 15909 : 2015 ISO 7240-29	PVC Geomembranes for Lining - Specification Second Revision

Annexure-II :List of Indian Product Standards

SI. No.	IS No. & Year	Title
1	IS 14715 (Part 1) : 2016 Reviewed In : 2020	Jute geotextiles - Part 1 Strengthening of sub-grade in roads - Specification second revision
2	IS 14715 (Part 2) : 2016 Reviewed In : 2020	Jute geotextiles - Part 2 Control of bank erosion in rivers and waterways - Specification second revision
3	IS 14986 : 2001 Reviewed In : 2023	Guidelines for application of jute geotextile for rain water erosion control in road and railway embankments and hill slopes
4	IS 15869 : 2020	Textiles Open weave coir Bhoovastra Specification first revision
5	IS 15910 : 2010 Reviewed In : 2024	Geosynthetics for highways - Specification
6	IS 16090 : 2013 Reviewed In : 2023	Geo-synthetics - Geo-textiles used as protection or cushioning materials - Specification
7	IS 16352 : 2020	Geosynthetics High density polyethylene HDPE geomembranes for lining Specification first revision
8	IS 16362 : 2020	Geosynthetics - Geotextiles used in subgrade stabilization in pavement structures - Specification first revision
9	IS 16391 : 2015 Reviewed In : 2019	Geosynthetics - Geotextiles used in sub-grade separation in pavement structures - Specification
10	IS 16392 : 2015 Reviewed In : 2019	Geosynthetics - Geotextiles for permanent erosion control in hard armor systems - Specification
11	IS 16393 : 2015 Reviewed In : 2019	Geosynthetics - Geotextiles used in subsurface drainage application - Specification
12	IS 16653 : 2017 Reviewed In : 2023	Geosynthetics - Needle punched nonwoven geobags for coastal and waterways protection - Specification
13	IS 16654 : 2017 Reviewed In : 2023	Geosynthetics - Polypropylene multifilament woven geobags for coastal and waterways protection - Specification
14	IS 17371 : 2020	Geosynthetics Geogrids for flexible pavements Specification

15	IS 17372 : 2020	Geosynthetics Polymeric strip geostrip used as soil reinforcement in retaining structures Specification
16	IS 17373 : 2020	Geosynthetics - Geogrids used in reinforced soil retaining structures - Specification
17	IS 17374 : 2020	Geosynthetics Reinforced HDPE membrane for effluents and chemical resistance lining Specification
18	IS 17483 (Part 1) : 2020	Geosynthetics - Geocells - Specification Part 1 Load Bearing Application
19	IS 17483 (Part 2) : 2020	Geosynthetics - Geocells - Specification Part 2 Slope Erosion Protection Application
20	IS 17880 : 2022	Geosynthetics - Synthetics Polymer Rope Gabions for Coastal and Waterways Protection - Specification
21	IS 18309 : 2023	Geosynthetics- Prefabricated Vertical Drains for Quick Consolidation for Very Soft Plastic Soil - Specification