BUREAU OF INDIAN STANDARDS

AGENDA

Panel for Soils and Foundations, CED 46:P5 : Fifth Meeting

Wednesday, 13 March 2024 : 1030 h

In Hybrid Mode from:

Dr Lal C Verman Conference Hall, Bureau of Indian Standards, Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110 002

Online using:

1) Meeting link: https://bismanak.webex.com/bismanak/j.php?MTID=mcc3defa95930455cd8c6490900ad8589
2) Meeting number: **2516 917 5986**
3) Password: **Nbc@2025**

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Convener: Shri C. Pushpakaran

Member Secretary: Shri Arunkumar S.
NBC Officer: Shri Abhishek Pal

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Item 0 OPENING REMARKS

Item 1 CONFIRMATION OF MINUTES OF THE LAST MEETING

1.1 The Minutes of the fourth meeting of the Panel held on 16 October 2015 in New Delhi, were circulated vide BIS DG letter No. CED 46:P5/A-2.4 dated 27 January 2016. No comments have been received.

The Panel may **CONFIRM** the Minutes.

Item 2 COMPOSITION

2.1 The present composition of the Panel as reconstituted by the National Building Code Sectional Committee, CED 46 is given at **Annex 1 (P-4)**.

The Panel may **CONSIDER**.

2.2 The Panel may also **NOTE** regarding the Structural Reforms in Standardization established by BIS to bring greater efficiency in standards formulation and revision work in BIS addressing speed, skill and scale. The same relates to aspect like:

a) technical committees of BIS having members with widely acknowledged domain area expertise and experience on the subjects
b) optimum size of the technical committee
c) review of membership with focus on continuity of participation including contribution by every member
d) holding periodic meetings (physical/virtual/hybrid)
e) decide on timelines to enable stage-wise development of the documents (draft standards)
f) resource centre to enable share the information and documents associated with the standardization work

2.3 Further, BIS has established in place systems such as action research projects, R&D for standards development and provision for having short-term Consultants for suitable involvement in the standardization activity. Also, focus should be made w.r.t developments on the subject happening world-wide including in technical events, literature, research publications, standards of other national standard bodies, etc. Wherever possible research-based inputs be generated including by associating with the various eminent institutions with whom BIS has entered into MoU with (List of MoU institutions is available at: https://www.bis.gov.in/partnership-with-technical-and-professional-institutions/).

The Panel may **NOTE**.

Item 3 PROJECT OF REVISION OF NBC

3.1 Under the project of Revision of NBC, various Parts/Sections of NBC 2016 [a list of which is given in **Annex 2 (P-6)**] are being comprehensively revised, to bring out a most modern and state-of-the-art revision of the Code.

The Panel may consider revising the chapter (**Part 6/Sec 2** on **Soils and Foundations**) taking into cognizance the latest developments in the field. In the revision exercise, due consideration may be given to ensuring coherence among various chapters of the Code. Where required, suggestions for improvements in the other chapters of the code may also be provided.

The Panel may **NOTE**

3.2 The Panel may therefore engage in a high-level review of the existing chapter namely ‘Soils and Foundations’. The contents of existing Part 6/Sec 2 ‘Soils and Foundations’ is given in **Annex 3 (P-8)**. This review may involve an examination of the structure, content, and alignment of the chapters with current industry standards and practices.

The Panel may **CONSIDER.**

3.3 To facilitate the revision process, the following working draft has been prepared and circulated to the members for their comments vide our email dated 04 March 2024:

Working Draft of National Building Code of India: Part 6/Sec 2 'Soils and Foundations', Doc: ***CED 46 (0276)WD***

While preparing the above draft, references to various standards have been updated by including the latest versions of the specifications and test methods of soil testing and by including reference to new standards formulated on the new draft Standard on Combined Piled-Raft Foundation (*Under print*).

Comments received on the drafts would be circulated (separately) among the members and also discussed during the meeting.

In addition, the following changes are suggested in this revision of the Code:

a) Updated provisions on subsurface geotechnical investigation
b) Updated provisions of ground improvement techniques
c) Updated provisions on shallow and deep foundations including on rocks
d) Testing on piles

The Panel may **CONSIDER.**

3.4 For ready reference, the Programme of Work of the 'Soil and Foundation Engineering Sectional Committee, CED 43' and of the 'Geosynthetics Sectional Committee, TXD 30' are given at **Annex 4 (P-10)** and **Annex 5 (P-19)** respectively for the perusal of the Panel and for suitable use in the revision exercise.

The Panel may **CONSIDER.**

Item 4 COMMENTS RECEIVED ON / INPUTS RELATED TO PART 6/SEC 2 'SOILS AND FOUNDATIONS' OF SP 7 : 2016

4.1 No comments were received on the above Chapter of NBC 2016.

The Panel may **NOTE**.

Item 5 PROJECT OF PROMOTION OF USE OF NBC 2016 IN ALL STATES AND UTs OF INDIA

5.1 An ambitious Project for Promotion of use of National Building Code of India 2016 in all States and UTs of India was earlier taken up by BIS involving a comprehensive study and review of rules and regulations governing land development and building construction in various states and union territories of India. The Project involves preparing draft regulations which are aligned with provisions in National Building Code of India 2016 (NBC 2016), for use by the States and UTs in

revising their existing regulatory documents in line with the revised state-of-the-art NBC 2016. The Project had 09 deliverables as below:

Sl No.	Deliverable
1	Compilation and study of existing processes, rules and regulations as existing in various States and UTs which govern the land development and building construction, and other statutory provisions which have to be complied with currently, etc
2	Classification of the Provisions in various Rules and Regulations as mandatory/recommendatory, identification of commonalities/dissimilarities, conflicts, if any
3	Mapping the existing Rules, Regulations, Processes against provisions given in NBC 2016
4	Identification of other best practices which may currently not be a part of the existing rules or of NBC 2016, which may be aspirational but will help further the Aim/Objective of this project
5	Preparation of a draft revised standardized/model Rules and Regulations aligned with the provisions of NBC 2016, for the consideration of the Bureau
6	Preparing State/UT-wise standardized/model regulatory documents, including such required documents for some metro/mega cities, which can be adopted by various authorities & obtaining approval of the Bureau as per scope of work
7	Creating pamphlets for an awareness campaign for general public
8	Creating a simplified booklet on using NBC which can be used by all stakeholders-academicians, students and professionals
9	Dissemination to designated States/UTs, the knowledge base created and presenting to them advantages of adopting the same through meetings and workshops

With the support of an external consultant, the main deliverable namely Draft Development and Building Regulations for each of the States and UTs of India was prepared. Followed by twenty 2-day workshops covering all the States and UTs, the inputs received as part of such workshops, and the finalized regulations were shared with the respective States & UTs.

In addition, a new special publication, **SP 73 : 2023 'Standardized Development and Building Regulations, 2023'** was also published and released, which is available for access (free download) from the BIS' website and from: https://standardsbis.bsbedge.com/

The Panel may **NOTE.**

Item 6 DATE & PLACE OF THE NEXT MEETING

Item 7 ANY OTHER BUSINESS

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ANNEX 1
(*Item* 2.1)

COMPOSITION OF THE PANEL FOR SOILS AND FOUNDATIONS, CED 46:P5

	NAME OF THE ORGANISATION	REPRESENTED BY
1.	In Personal Capacity, Kolkata	Shri C. Pushpakaran (***Convener***)
2.	Afcons Infrastructure Limited, Mumbai	Shri P. S. Bansod Shri V. Ramamurty (*Alternate*)
3.	Bharat Heavy Electricals Ltd., Noida	Shri Hitesh Kumar
4.	Cengrs Geotechnica Pvt Ltd, Noida	Shri Sanjay Gupta Shri Ravi Sundaram (*Alternate*)
5.	Central Building Research Institute (CSIR), Roorkee	Shri Manojit Samanta Dr Anindya Pain (*Alternate* I) Ms. Aswathy M.S. (*Alternate* II)
6.	Central Public Works Department, New Delhi	Shri Nagendra Prasad Shri A. K. Jalan (*Alternate*)
7.	Creative Consultants & Engineers Pvt Ltd, Ghaziabad	Shri Aman Deep
8.	Delhi Development Authority, New Delhi	Shri Arun Kumar Shri A. K. Singhal (*Alternate*)
9.	Indian Institute of Technology Delhi, New Delhi	Dr. J. T. Shahu Dr. R. Ayothiraman (*Alternate*)
10.	Indian Institute of Technology Madras, Chennai	**Nominations are awaited**
11.	Indian Association of Structural Engineers, New Delhi	Shri Sushil K. Dhawan Dr Abhay Gupta (*Alternate*)
12.	Indian Geotechnical Society, New Delhi	Dr. A. P. Singh Dr. Anil Joseph (*Alternate*)
13.	ITD Cementation Pvt Ltd, Mumbai	Shri Hemendra Chaudhary
14.	Military Engineer Services, Engineer-in-Chief's Branch, Army HQ, New Delhi	Shri P. K. Jain Col. N. Chakraborty (*Alternate*)
15.	NTPC Ltd, New Delhi	**Revised Nominations are awaited**
16.	National Council for Cement and Building Materials, Ballabgarh	Shri P. N. Ojha Shri Amit Trivedi (*Alternate*)
17.	National Institute of Disaster Management, New Delhi	Dr Chandan Ghosh Dr Amir Ali Khan (*Alternate*)
18.	The Institution of Engineers (India), Kolkata	Dr G.B. Choudhari Dr S.S. Basarkar (*Alternate*)
19.	In Personal Capacity, Chennai	Shri A. Vijayaraman

ANNEX 2
(*Item* **3.1**)

Details of Chapters of NBC 2016

Part/Section	*Title*
1 **PART 0**	**INTEGRATED APPROACH – A PRE-REQUISITE FOR APPLYING THE PROVISIONS OF THE CODE**
2……. **PART 1**	**DEFINITIONS**
3……..**PART 2**	**ADMINISTRATION**
4……..**PART 3**	**DEVELOPMENT CONTROL RULES AND GENERAL BUILDING REQUIREMENTS**
5……..**PART 4**	**FIRE AND LIFE SAFETY**
6……..**PART 5**	**BUILDING MATERIALS**
PART 6	**STRUCTURAL DESIGN**
7……	Section 1 Loads, Forces and Effects
8……	Section 2 Soils and Foundations
	Section 3 Timber and Bamboo
9……	3A Timber
10……	3B Bamboo
11……	Section 4 Masonry
	Section 5 Concrete
12…… ……	5A Plain and Reinforced Concrete
13…… ……	5B Prestressed Concrete
14…….....	Section 6 Steel
	Section 7 Prefabrication and Systems Building and Mixed/Composite Construction
15……7A	Prefabricated Concrete
16……7B	Systems Building and Mixed/Composite Construction
17.....	Section 8 Glass and Glazing
18…… **PART 7**	**CONSTRUCTIONAL PRACTICES AND SAFETY**
PART 8	**BUILDING SERVICES**
19……	Section 1 Lighting and Ventilation
20……	Section 2 Electrical and Allied Installations
21……	Section 3 Air-conditioning, Heating and Mechanical Ventilation
22……	Section 4 Acoustics, Sound Insulation and Noise Control
	Section 5 Installation of Lifts and Escalators and Moving Walks
23……..	5A Lifts
24…….	5B Escalators and Moving Walks
25.....	Section 6 Information and Communication Enabled Installations

PART 9 PLUMBING SERVICES
26…… Section 1 Water Supply
27…… Section 2 Drainage and Sanitation
28…… Section 3 Solid Waste Management
29…… Section 4 Gas Supply

PART 10 LANDSCAPING, SIGNS AND OUTDOOR DISPLAY STRUCTURES
30…… Section 1 Landscape Planning, Design and Development
31…… Section 2 Signs and Outdoor Display Structures

32…… **PART 11 APPROACH TO SUSTAINABILITY**

33……**PART 12 ASSET AND FACILITY MANAGEMENT**

ANNEX 3
(*Item* **3.2**)

CONTENTS OF PART 6 'STRUCTURAL DESIGN'/ SEC 2 SOILS AND FOUNDATION OF NBC

CONTENTS

FOREWORD

1 SCOPE

2 TERMINOLOGY

3 SITE INVESTIGATION

4 CLASSIFICATION AND IDENTIFICATION OF SOILS

5 MATERIALS

6 GENERAL REQUIREMENTS FOR FOUNDATIONS/SUBSTRUCTURES FOR BUILDINGS

7 SHALLOW FOUNDATIONS

8 DRIVEN/BORED CAST IN—SITU CONCRETE PILES

9 DRIVEN PRECAST CONCRETE PILES

10 PRECAST CONCRETE PILES IN PREBORED HOLES

11 UNDER-REAMEDPILES

12 TIMBER PILES

13 OTHER FOUNDATIONS, SUBSTRUCTURES AND FOUNDATIONS FOR SPECIAL STRUCTURES

14 GROUND IMPROVEMENT

ANNEX A DETERMINATION OF MODULUS OF ELASTICITY (ES) AND POISSON'S RATIO

ANNEX B DETERMINATION OF MODULUS OF SUBGRADE REACTION

ANNEX C RIGIDITY OF SUPERSTRUCTURE AND FOUNDATION

ANNEX D CALCULATION OF PRESSURE DISTRIBUTION BY CONVENTIONAL METHOD

ANNEX E CONTACT PRESSURE DISTRIBUTION AND MOMENTS BELOW FLEXIBLE FOUNDATION

ANNEX F FLEXIBLE FOUNDATION — GENERAL CONDITION

ANNEX G LOAD CARRYING CAPACITY OF PILES —STATIC ANALYSIS

ANNEX H ANALYSIS OF LATERALLY LOADED PILES

ANNEX J LOAD CARRYING CAPACITY OF UINDER-REAMED PILES FROM SOIL PROPERTIES

ANNEX K SOIL IMPROVEMENT METHODS

LIST OF STANDARDS

ANNEX 4
(Item 3.4)

PROGRAMME OF WORK OF SOIL AND FOUNDATION ENGINEERING SECTIONAL COMMITTEE, CED 43

CED 43 SCOPE	SOIL AND FOUNDATION ENGINEERING FORMULATION OF INDIAN STANDARDS IN THE FIELD OF SOIL AND SOIL ENGINEERING COVERING: I) SUB-SURFACE EXPLORATION (OTHER THAN RIVER VALLEY PROJECTS); II) SOIL SAMPLING AND TESTING INCLUDING STABILZED SOILS; III) SOIL CLASSIFICATION FOR ENGINEERING PURPOSES; IV) LOAD BEARING CAPACITIES OF SOILS; AND V) GROUND IMPROVEMENT TECHNIQUES. STANDARDIZATION IN THE FIELD OF FOUNDATION ENGINEERING IN PARTICULAR DESIGN REQUIREMENTS AND CONSTRUCTION PRACTICES FOR VARIOUS TYPES OF FOUNDATIONS AND SPECIAL LOAD TESTS ON FOUNDATIONS
LIAISON	ISO/TC 182 (O) GEOTECHNICS

Sl No.	IS Number/ DOC Number	Title	Reaffirm Date	No. of Amd.	Aspect
		STANDARDS PUBLISHED			
1	IS 1080:1985	Code of practice for design and construction of shallow foundations in soils (other than raft, ring and shell) (*second revision)*	Dec 2021		C
2	IS 1498:1970	Classification and identification of soils for general engineering purposes (*first revision*)	Dec 2021	2	M
3	IS 1888:1982	Method of load test on soils (*second revision)*	Dec 2021		M
4	IS 1892:2021 (Dec 2021)	Subsurface investigation for foundations — Code of practice (*second revision)*	-		C
5	IS 1904:2021 (Sep 2021)	General requirements for design and construction of foundations in soils — Code of practice (*fourth revision*)	-		C
6	*IS 2131:1981	Method for standard penetration test for soils (*first revision*)	Dec 2021		M
7	IS 2132:1986	Code of practice for thin walled tube sampling of soils (*second revision)*	Dec 2021		M
8	*IS 2720 (Part 1):1983	Methods of test for soils: Part 1 Preparation of dry soil samples for various tests (*second revision)*	May 2020		M
9	*IS 2720 (Part 2):1973	Methods of test for soils: Part 2 Determination of water content (*second revision)*	May 2020	1	M
10	IS 2720 (Part 3/Sec 1): 1980	Methods of test for soils: Part 3 Determination of specific gravity: Section 1 Fine grained soils (*first revision*)	Dec 2021		M
11	IS 2720 (Part 3/Sec 2): 1980	Methods of test for soils: Part 3 Determination of specific gravity: Section 2 Fine, medium and coarse grained soils (*first revision*)	Dec 2021		M

SI No.	IS Number/ DOC Number	Title	Reaffirm Date	No. of Amd.	Aspect
12	IS 2720 (Part 4):1985	Methods of test for soils: Part 4 Grain size analysis (*second revision)*	May 2020		M
13	IS 2720 (Part 5):1985	Methods of test for soils: Part 5 Determination of liquid and plastic limit (*second revision)*	May 2020		M
14	IS 2720 (Part 6):1972	Methods of test for soils: Part 6 Determination of shrinkage factors (*first revision*)	Dec 2021	1	M
15	IS 2720 (Part 7):1980	Methods of test for soils: Part 7 Determination of water content-dry density relation using light compaction (*second revision)*	Dec 2021	2	M
16	IS 2720 (Part 8):1983	Methods of test for soils: Part 8 Determination of water content-dry density relation using heavy compaction (*second revision)*	May 2020		M
17	IS 2720 (Part 9):1992	Methods of test for soils: Part 9 Determination of dry density-moisture content relation by constant mass of soil method (*first revision*)	Dec 2021		M
18	IS 2720 (Part 10):1991	Methods of test for soils: Part 10 Determination of unconfined compressive strength (*second revision)*	May 2020		M
19	IS 2720 (Part 11):1993	Methods of test for soils: Part 11 Determination of the shear strength parameters of a specimen tested in unconsolidated undrained triaxial compression without the measurement of pore water pressure (*first revision*)	Dec 2021		M
20	IS 2720 (Part 12):1981	Methods of test for soils: Part 12 Determination of shear strength parameters of soil from consolidated undrained triaxial compression test with measurement of pore water pressure (*first revision*)	Dec 2021		M
21	IS 2720 (Part 13):1986	Methods of test for soils: Part 13 Direct shear test (*second revision)*	Dec 2021	1	M
22	IS 2720 (Part 14):1983	Methods of test for soils: Part 14 Determination of density index (relative density) of cohesionless soils (*first revision*)	May 2020		M
23	IS 2720 (Part 15):1986	Methods of test for soils: Part 15 Determination of consolidation properties (*first revision*)	Dec 2021		M
24	IS 2720 (Part 16):1987	Methods of test for soils: Part 16 Laboratory determination of CBR (*second revision)*	Dec 2021		M
25	IS 2720 (Part 17):1986	Methods of test for soils: Part 17 Laboratory determination of permeability (*first revision*)	Dec 2021		M
26	IS 2720 (Part 18):1992	Methods of test for soils: Part 18 Determination of field moisture equivalent (*first revision*)	Dec 2021		M
27	IS 2720 (Part 19):1992	Methods of test for soils: Part 19 Determination of centrifuge moisture equivalent (*first revision*)	Dec 2021		M
28	IS 2720 (Part 20):1992	Methods of test for soils: Part 20 Determination of linear shrinkage (*first revision*)	Dec 2021		M
29	IS 2720 (Part 21):1977	Methods of test for soils: Part 21 Determination of total soluble solids (*first revision*)	May 2020	1	M

SI No.	IS Number/ DOC Number	Title	Reaffirm Date	No. of Amd.	Aspect
30	IS 2720 (Part 22):1972	Methods of test for soils: Part 22 Determination of organic matter (*first revision*)	May 2020	1	M
31	IS 2720 (Part 23):1976	Methods of test for soils: Part 23 Determination of calcium carbonate (*first revision*)	May 2020		M
32	IS 2720 (Part 24):1976	Methods of test for soils: Part 24 Determination of cation exchange capacity (*first revision*)	May 2020	1	M
33	IS 2720 (Part 25):1982	Methods of test for soils: Part 25 Determination of silica sesquioxide ratio (*first revision*)	May 2020		M
34	IS 2720 (Part 26):1987	Methods of test for soils: Part 26 Determination of pH value (*second revision)*	Dec 2021		M
35	IS 2720 (Part 27):1977	Methods of test for soils: Part 27 Determination of total soluble sulphates (*first revision*)	May 2020		M
36	IS 2720 (Part 28):1974	Methods of test for soils: Part 28 Determination of dry density of soils, in-place, by the sand replacement method (*first revision*)	May 2020	1	M
37	IS 2720 (Part 29):1975	Methods of test for soils: Part 29 Determination of dry density of soils in-place, by the core-cutter method (*first revision*)	May 2020		M
38	IS 2720 (Part 30):1980	Methods of test for soils: Part 30 Laboratory vane shear test (*first revision*)	Dec 2021	1	M
39	IS 2720 (Part 31):1990	Methods of test for soils: Part 31 Field determination of California bearing ratio (*first revision*)	May 2020		M
40	IS 2720 (Part 33):1971	Methods of test for soils: Part 33 Determination of the density in place by the ring and water replacement method	May 2020	1	M
41	IS 2720 (Part 34):1972	Methods of test for soils: Part 34 Determination of density of soil in place by rubber balloon method	May 2020	1	M
42	IS 2720 (Part 35):1974	Methods of test for soils: Part 35 Measurement of negative pore water pressure	May 2020		M
43	IS 2720 (Part 36):1987	Methods of test for soils: Part 36 Laboratory determination of permeability of granular soil (constant head) (*first revision*)	Dec 2021		M
44	IS 2720 (Part 37):1976	Methods of test for soils: Part 37 Determination of sand equivalent value of soils and fine aggregates	Dec 2021		M
45	IS 2720 (Part 38):1976	Methods of test for soils: Part 38 Compaction control test (Hilf method)	Dec 2021		M
46	IS 2720 (Part 39/Sec 1): 1977	Methods of test for soils: Part 39 Direct shear test for soils containing gravel: Section 1 Laboratory test	Dec 2021	2	M
47	IS 2720 (Part 39/Sec 2): 1979	Methods of test for soils: Part 39 Direct shear test for soils containing gravel: Section 2 In-situ shear test	Dec 2021		M
48	IS 2720 (Part 40):1977	Methods of test for soils: Part 40 Determination	Dec 2021		M

Sl No.	IS Number/ DOC Number	Title	Reaffirm Date	No. of Amd.	Aspect
		of free swell index of soils			
49	IS 2720 (Part 41):1977	Methods of test for soils: Part 41 Measurement of swelling pressure of soils	Dec 2021		M
50	IS 2809:1972	Glossary of terms and symbols relating to soil engineering (*first revision*)	May 2020		T
51	IS 2810:1979	Glossary of terms relating to soil dynamics (*first revision*)	Dec 2021		T
52	IS 2911 (Part 1/Sec 1): 2010	Design and construction of pile foundations — Code of practice: Part 1 Concrete piles: Section 1 Driven cast in-situ concrete piles (*second revision)*	May 2020		C
53	IS 2911 (Part 1/Sec 2): 2010	Design and construction of pile foundations — Code of practice: Part 1 Concrete piles: Section 2 Bored cast in-situ concrete piles (*second revision)*	May 2020		C
54	IS 2911 (Part 1/Sec 3): 2010	Design and construction of pile foundations — Code of practice: Part 1 Concrete piles: Section 3 Driven precast concrete piles (*second revision)*	May 2020		C
55	IS 2911 (Part 1/Sec 4): 2010	Design and construction of pile foundations — Code of practice: Part 1 Concrete piles: Section 4 Precast concrete piles in prebored holes (*first revision*)	May 2020		C
56	IS 2911 (Part 2):2021 (Sep 2021)	Design and construction of pile foundations — Code of practice: Part 2 Timber piles (*second revision)*	-		C
57	IS 2911 (Part 3):2021 (Dec 2021)	Design and construction of pile foundations — Code of practice: Part 3 Under-reamed piles (*second revision)*	-		C
58	IS 2911 (Part 4):2013	Design and construction of pile foundations — Code of practice: Part 4 Load test on piles (*second revision)*	Nov 2018		M
59	IS 2950 (Part 1):1981	Code of practice for design and construction of raft foundations: Part 1 Design (*second revision)*	Nov 2018		C
60	*IS 2974 (Part 1):1982	Code of practice for design and construction of machine foundations: Part 1 Foundations for reciprocating type machines (*second revision)*	Nov 2018	1	C
61	*IS 2974 (Part 2):1980	Code of practice for design and construction of machine foundations: Part 2 Foundation for impact type machines (hammer foundations) (*first revision*)	Nov 2018	1	C
62	*IS 2974 (Part 3):1992	Design and construction of machine foundations — Code of practice: Part 3 Foundations for rotary type machines (medium and high frequency) (*second revision)*	May 2020		C
63	*IS 2974 (Part 4):1979	Code of practice for design and construction of machine foundations: Part 4 Foundations for rotary type machines of low frequency (*first revision*)	May 2020	1	C

SI No.	IS Number/ DOC Number	Title	Reaffirm Date	No. of Amd.	Aspect
64	*IS 2974 (Part 5):1987	Code of practice for design and construction of machine foundations: Part 5 Foundations for impact machines other than hammer (forging and stamping press, pig breaker, drop crusher and jolter) (*first revision*)	Nov 2018		C
65	*IS 4091:1979	Code of practice for design and construction of foundations for transmission line towers and poles (*first revision*)	May 2020		C
66	IS 4332 (Part 1):1967	Methods of test for stabilized soils: Part 1 Method of sampling and preparation of stabilized soils for testing	May 2020	1	M
67	IS 4332 (Part 2):1967	Methods of test for stabilized soils: Part 2 Determination of moisture content of stabilized soil mixtures	May 2020	1	M
68	IS 4332 (Part 3):1967	Methods of test for stabilized soils: Part 3 Test for determination of moisture content-dry density relation for stabilized soil mixtures	May 2020	1	M
69	IS 4332 (Part 4):1968	Methods of test for stabilized soils: Part 4 Wetting and drying and freezing and thawing tests for compacted soil-cement mixtures	May 2020	1	M
70	IS 4332 (Part 5):1970	Methods of test for stabilized soils: Part 5 Determination of unconfined compressive strength of stabilized soils	May 2020		M
71	IS 4332 (Part 6):1972	Methods of test for stabilized soils: Part 6 Flexural strength of soil cement using simple beam with third-point loading	May 2020	1	M
72	IS 4332 (Part 7):1973	Methods of test for stabilized soils: Part 7 Determination of cement content of cement stabilized soils	May 2020	1	M
73	IS 4332 (Part 8):1969	Methods of test for stabilized soils: Part 8 Determination of lime content of lime stabilized soils	May 2020	1	M
74	IS 4332 (Part 9):1970	Methods of test for stabilized soils: Part 9 Determination of bituminous stabilizer content of bitumen and tar stabilized soils	May 2020	1	M
75	IS 4332 (Part 10):1969	Methods of test for stabilized soils: Part 10 Test for soil-bituminous mixtures	May 2020	1	M
76	IS 4434:1978	Code of practice for in-situ vane shear test for soils (*first revision*)	Dec 2021		C
77	IS 4968 (Part 1):1976	Method for subsurface sounding for soils: Part 1 Dynamic method using 50 mm cone without bentonite slurry (*first revision*)	Dec 2021	1	M
78	IS 4968 (Part 2):1976	Method for subsurface sounding for soils: Part 2 Dynamic method using cone and bentonite slurry (*first revision*)	Dec 2021	1	M
79	IS 4968 (Part 3):1976	Method for subsurface sounding for soils: Part 3 Static cone penetration test (*first revision*)	Dec 2021		M

SI No.	IS Number/ DOC Number	Title	Reaffirm Date	No. of Amd.	Aspect
80	IS 5249:1992	Determination of dynamic properties of soil — Method of test (*second revision)*	May 2020	1	M
81	IS 6403:1981	Code of practice for determination of breaking capacity of shallow foundations (*first revision*)	Dec 2021	2	C
82	IS 8009 (Part 1):1976	Code of practice for calculation of settlements of foundations: Part 1 Shallow foundations subjected to symmetrical static vertical loads	Nov 2018	3	C
83	IS 8009 (Part 2):1980	Code of practice for calculation of settlement of foundations: Part 2 Deep foundations subjected to symmetrical static vertical loading	May 2020	1	C
84	IS 8763:1978	Guide for undisturbed sampling of sands	Dec 2021		M
85	*IS 9198:1979	Specification for compaction rammer for soil testing	Dec 2021	1	S
86	IS 9214:1979	Method for determination of modulus of subgrade reaction (k-value) of soils in field	Dec 2021	1	M
87	*IS 9259:1979	Specification for liquid limit apparatus for soils	Dec 2021	1	S
88	IS 9456:1980	Code of practice for design and construction of conical and hyperbolic paraboloidal types of shell foundations	Nov 2018	1	C
89	IS 9556:1980	Code of practice for design and construction of diaphragm walls	Nov 2018	1	C
90	*IS 9640:1980	Specification for split spoon sampler	Dec 2021	2	S
91	*IS 9669:1980	Specification for CBR moulds and its accessories	Dec 2021	2	S
92	IS 9716:1981	Guide for lateral dynamic load test on piles	Nov 2021		M
93	IS 9759:1981	Guidelines for dewatering during construction	Nov 2021	1	C
94	IS 10042:1981	Code of practice for site investigations for foundation in gravel-boulder deposit	Dec 2021		C
95	*IS 10074:1982	Specification for compaction mould assembly for light and heavy compaction test for soils	May 2020		S
96	*IS 10077:1982	Specification for equipment for determination of shrinkage factors	May 2020		S
97	IS 10108:1982	Code of practice for sampling of soils by thin wall sampler with stationary piston	May 2020		C
98	IS 10270:1982	Guidelines for design and construction of prestressed rock anchors	Nov 2018	2	C
99	IS 10379:1982	Code of practice for field control of moisture and compaction of soils of embankment and subgrade	May 2020		C
100	*IS 10442:1983	Specification for earth augers (spiral type)	May 2020		S
101	IS 10589:1983	Specification for equipment for subsurface sounding of soils	May 2020		S

SI No.	IS Number/ DOC Number	Title	Reaffirm Date	No. of Amd.	Aspect
102	*IS 10837:1984	Specification for moulds and accessories for determination of density index (relative density) of cohesionless soils	May 2020		S
103	IS 11089:1984	Code of practice for design and construction of ring foundation	Dec 2021	1	C
104	*IS 11196:1985	Specification for equipment for determination of liquid limit of soils cone penetration method	May 2020	1	S
105	*IS 11209:1985	Specification for mould assembly for determination of permeability of soils	May 2020		S
106	*IS 11229:1985	Specification for shear box for testing of soils	May 2020		S
107	*IS 11233:1985	Code of practice for design and construction of radar antenna, microwave and TV tower foundations	Dec 2021		C
108	IS 11550:1985	Code of practice for field instrumentation of swelling pressure in expansive soils	Dec 2021		C
109	*IS 11593:1986	Specification for shear box (large) for testing of soils	May 2020		S
110	*IS 11594:1985	Specification for mild steel thin walled sampling tubes and sampler heads	May 2020		S
111	IS 11629:1986	Code of practice for installation and operation of single point hydraulic over-flow setting gauge	Dec 2021		C
112	IS 12023:1987	Code of practice for field monitoring of movement of structures using tape extensometer	May 2020		C
113	IS 12070:1987	Code of practice for design and construction of shallow foundations on rocks	May 2020	1	C
114	*IS 12175:1987	Specification for rapid moisture meter for rapid determination of water content for soil	Dec 2021		S
115	IS 12208:1987	Method for measurement of earth pressure by hydraulic pressure cell	May 2020		M
116	*IS 12287:1988	Specification for consolidometer for determination of consolidation properties	May 2020		S
117	*IS 12979:1990	Mould for determination of linear shrinkage — Specification	May 2020		S
118	IS 13094:2021	Selection of ground improvement techniques for weak soils — Guidelines (*first revision*)	-		C
119	IS 13301:1992	Vibration isolation for machine foundations — Guidelines	Dec 2021		C
120	*IS 13468:1992	Apparatus for determination of dry density of soil by core cutter method — Specification	Dec 2021		S
121	IS 14593:1998	Design and construction of bored cast-in-situ piles founded on rocks — Guidelines	Jun 2018	1	C
122	IS 14893:2021	Low strain non-destructive integrity testing of piles — Guidelines (*first revision*)	-		M
123	IS 15284 (Part 1):2003	Design and construction for ground improvement	Jun 2018		C

Sl No.	IS Number/ DOC Number	Title	Reaffirm Date	No. of Amd.	Aspect
		— Guidelines: Part 1 Stone columns			
124	IS 15284 (Part 2):2004	Design and construction for ground improvement — Guidelines: Part 2 Pre consolidation using vertical drains	May 2020		C
125	SP 36 (Part 1):1987	Compendium of Indian standards on soil engineering: Part 1 Laboratory testing of soils for civil engineering purposes			O
126	SP 36 (Part 2):1988	Compendium of Indian standards on soil engineering: Part 2 Field testing of soils for civil engineering purposes			O

DRAFT STANDARDS COMPLETED WIDE CIRCULATION		
1	DOC: CED 43 (*12408*)	Draft Indian Standard Design and construction of machine foundations — Code of practice: Part 1 General provision [*third revision* of IS 2974 (Parts 1 to 5)]
2	DOC: CED 43 (*13116*)	Draft Indian Standard Design and construction of machine foundations — Code of practice: Part 2 Block foundation [*second revision* of IS 2974 (Parts 1 to 5)]
3	DOC: CED 43 (*13264*)	Draft Indian Standard Design and construction of machine foundations — Code of practice: Part 3 Frame foundation [*third revision* of IS 2974 (Parts 1 to 5)]
4	DOC: CED 43 (14796)	Draft Indian Standard Methods of test for soils: Part 1 Preparation of dry soil samples for various tests [*third revision* of IS 2720 (Part 1)]
5	DOC: CED 43 (14797)	Draft Indian Standard Methods of test for soils: Part 2 Determination of water content [*third revision* of IS 2720 (Part 2)]
6	DOC: CED 43 (14121)	Draft Indian Standard Design and construction of foundations for transmission line towers and poles — Code of practice (*second revision* of IS 4091)
7	DOC: CED 43 (14226)	Draft Indian Standard Design and construction of machine foundation — Code of practice: Part 5 Foundation for machines (excluding hammers & presses) supported on vibration isolation system [*second revision* of IS 2974 (Part 1 to 5)]
8	DOC: CED 43 (18748)	Draft Indian Standard Design and construction of machine foundations — Code of Practice: Part 4 Foundation for hammers and presses [*first revision* of IS 2974 (Parts 1 to 5)]
9	DOC: CED 43 (18859)	Draft Indian Standard Design and construction of radar and satellite tracking antennas microwave mobile and television tower foundations – *Code* of Practice (*first revision* of IS 11233)
10	DOC: CED 43 (20668)	Equipment for determination of shrinkage factors – Specification (*first revision* of IS 10077)
11	DOC: CED 43 (20670)	Draft Indian Standard CBR mould and its accessories – *S*pecification (*first revision* of IS 9669)
12	DOC: CED 43 (20693)	Draft Indian Standard Earth augers spiral type – *S*pecification (*first revision* of IS 10442)
13	DOC: CED 43 (20812)	Draft Indian Standard Casagrande apparatus for determination of liquid limit of soils by impact – *Method* Specification (*first revision* of IS 9259:1979)
14	DOC: CED 43 (21048)	Draft Indian Standard Mould assembly for determination of permeability of soils – *S*pecification (*first revision* of IS 11209)
15	DOC: CED 43 (21049)	Draft Indian Standard Shear box for testing of soils – *S*pecification (*first revision*

		of IS 11229)
16	DOC: CED 43 (21050)	Draft Indian Standard Rapid moisture meter for rapid determination of water content for soil – *S*pecification (*first revision* of 12175)
17	DOC: CED 43 (21115)	Draft Indian Standard Penetration Test of Soil — Method of Test (*second revision* of IS 2131)
18	DOC:CED 43 (20669)	Draft Indian Standard Equipment for determination of liquid limit of soils by cone penetration – *Method* Specification (*first revision* of IS 11196)
19	DOC: CED 43 (21137)	Draft Indian Standard Compaction rammers for soil testing – *S*pecification (*first revision* of IS 9198)
20	DOC: CED 43 (21138)	Draft Indian Standard Mild steel thin walled sampling tubes and sampler heads – *S*pecification (*first revision* of IS 11594)
21	DOC: CED 43 (21162)	Draft Indian Standard Mould for determination of linear shrinkage of soil – *S*pecification (*first revision* of IS 12979)
22	DOC: CED 43 (21226)	Draft Indian Standard Apparatus for determination of dry density of soil by core cutter – *Method* Specification (*first revision* of IS 13468)
23	DOC: CED 43 (21227)	Draft Indian Standard Compaction mould assembly for light and heavy compaction test of soil – *S*pecification (*first revision* of IS 10074)
24	DOC: CED 43 (21409)	Draft Indian Standard Design and construction of combined piled raft foundations – *Code* of practice
25	DOC: CED 43 (21297)	Draft Indian Standard Moulds and accessories for determination of density index relative density of cohesionless soils – Specification (*first revision* of IS 10837)
26	DOC: CED 43 (21232)	Draft Indian Standard Shear box large for testing of soils – Specification (*first revision* of IS 11593)
27	DOC: CED 43 (21298)	Draft Indian Standard Consolidometer for determination of consolidation properties of soil – Specification (*first revision* of IS 12287)
28	DOC: CED 43 (22265)	Draft Indian Standard Split spoon sampler for standard penetration test of soil – Specification (*first revision* of IS 9640)
29	DOC: CED 43 (24470)	Draft Indian Standard Design and construction for ground improvement — Code of practice : Part 1 Stone columns [first revision of IS 15284 (Part 1)]
30	DOC: CED 43 (24471)	Draft Indian Standard Design and construction for ground improvement – Code of practice : Part 2 Preconsolidation using vertical drains [first revision of IS 15284 (Part 2)]

*** INDICATES STANDARDS UNDER REVISION** **/ INDICATES ADOPTION OF ISO STANDARD**

ANNEX 5

(*Clause* 3.4)

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	Geotextiles – Methods of test Part 2 Determination of resistance to exposure of ultraviolet light and water (Xenon-arc type apparatus)	December, 2019	-	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	Geotextiles – Methods of test Part 4 Determination of puncture resistance by falling cone method	December, 2019	-	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	Determination of tensile properties of extruded polymer geogrids using the wide strip - Test method	February, 2019	-	Indigenous
9	IS 13326 (Part 1) : 1992	Evaluation of interface friction between geosynthetics and soil method of test: Part 1 modified direct shear technique	March, 2024	-	Indigenous
10	IS 14293 : 1995	Geotextiles - Method of test for trapezoid tearing strength	March, 2024	-	Indigenous

11	IS 14294 : 1995	Geotextiles - Method for determination of apparent opening size by dry sieving technique	March, 2024	1	Indigenous
12	IS 14324 : 1995	Geotextiles – Methods of test for determination of water permeability – Permittivity	March, 2024	-	Indigenous
13	IS 14706 : 1999	Geotextiles - Sampling and preparation of test specimens	March, 2024	-	Indigenous
14	IS 14714 : 1999	Geotextiles - Determination of abrasion resistance	February, 2019	-	Indigenous
15	IS 14715 (Part 1) : 2016	Jute geotextiles - (Part 1) Strengthening of sub-grade in roads - Specification (second revision)	May, 2020	-	Indigenous
16	IS 14715 (Part 2) : 2016	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	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 ISO 10321:2008	Geosynthetics – Tensile test for joint seams by wide-width strip method (first revision)	-	-	Identical under dual numbering
21	IS 15868 (Part 16) : 2008	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	Use of coir geotextiles (Coir BHOOVASTRA) in unpaved roads – Guidelines	February, 2019	-	Indigenous
24	IS 15872 : 2009	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	Geosynthetics - for highways - Specification	February, 2019	-	Indigenous
27	IS 16078 : 2013 ISO 12236:2006 ISO 12236:2006	Geosynthetics - Static puncture test (CBR Test)	January, 2023	-	Identical under dual numbering
28	IS 16090 : 2013	Geo-synthetics - Geo-textiles used as protection (or cushioning) materials - Specification	January, 2023	1	Indigenous
29	IS 16237 : 2014	Geo-synthetics – Method for determination of apparent opening size by wet sieving	February, 2019	-	Indigenous

30	IS 16341 : 2015	Geosynthetics - Standard practice for exposure and retrieval of samples to evaluate installation damage of geosynthetics	December, 2019	-	Indigenous
31	IS 16342 : 2015	Geosynthetics - Method of test for grab breaking load and elongation of geotextiles	December, 2019	-	Indigenous
32	IS 16343 : 2015	Geosynthetics - Guidelines for installation of geotexiles as pavement fabric	December, 2019	-	Indigenous
33	IS 16344 : 2015	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	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	Geosynthetics - Method of test for effects of temperature on stability of geotextile	December, 2019	-	Indigenous
37	IS 16348 : 2015	Geosynthetics - Method of test for index puncture resistance of geomembranes and related products	December, 2019	-	Indigenous
38	IS 16349 : 2015	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	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	Geosynthetics - Guidelines for installation of geogrids used as soil reinforcement in mechanically stabilised earth (MSE) retaining structures	December, 2019	-	Indigenous
42	IS 16356 : 2015	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	Geosynthetics - Guidelines for installation of geotextile used in subsurface drainage application	December, 2019	-	Indigenous
45	IS 16380 : 2020	Geosynthetics – Method of test for		-	Indigenous

		measuring pullout resistance of geosynthetics in soil (first revision)			
46	IS 16389 : 2015	Geosynthetics - Method of test for biological clogging of geotextile or soil/geotextile filters	December, 2019	-	Indigenous
47	IS 16391 : 2015	Geosynthetics - Geotextiles used in sub-grade separation in pavement structures - Specification	December, 2019	1	Indigenous
48	IS 16392 : 2015	Geosynthetics - Geotextiles for permanent erosion control in hard armor systems - Specification	December, 2019	1	Indigenous
49	IS 16393 : 2015	Geosynthetics - Geotextiles used in subsurface drainage application - Specification	December, 2019	1	Indigenous
50	IS 16474 : 2015	Geosynthetics – Method of test for tensile properties of geogrids by the single or multi-rib tensile method	December, 2019	-	Indigenous
51	IS 16475 : 2015	Geosynthetics - Method of test for determination of 2 percent secant modulus for polyethylene geomembranes	December, 2019	-	Indigenous
52	IS 16477 : 2015	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	Geosynthetics - Method for microscopic evaluation of the dispersion of carbon black in polyolefin geosynthetics	January, 2023	-	Indigenous
54	IS 16493 : 2017	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 ISO 10319:2015	Geosynthetics - Wide - Width tensile test	January, 2023	-	Identical under dual numbering
56	IS 16653 : 2017	Geosynthetics - Needle punched nonwoven geobags for coastal and waterways protection - Specification	January, 2023	1	Not Equivalent
57	IS 16654 : 2017	Geosynthetics - Polypropylene multifilament woven geobags for coastal and waterways protection - Specification	January, 2023	-	Indigenous
58	IS 17179 : 2019 ISO 12958 : 2010 ISO 12958 : 2010	Geotextiles and geotextile-related products – Determination of water flow capacity in their plane		-	Identical under dual numbering
59	IS 17360 : 2020 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	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	Guidelines for the determination of the long-term strength of		-	Identical under single numbering

		geosynthetics for soil reinforcement			
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	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		1	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	Geosynthetics – Identification on site		-	Identical under single numbering
71	IS 17483 (Part 1) : 2020	Geosynthetics - Geocells - Specification (Part 1) Load Bearing Application		1	Indigenous
72	IS 17483 (Part 2) : 2020	Geosynthetics - Geocells - Specification (Part 2) Slope Erosion Protection Application		1	Indigenous
73	IS 17880 : 2022	Geosynthetics Polymer 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

Standards under Development

Projects Approved

SI. No.	Doc No.	Title
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 30 (22876)	Geosynthetics-Geotextile Tubes for Coastal and Waterways Protection - Specification

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 30 (20465)	Geosynthetic Reinforced Soil Structures - Code of Practice
2	TXD 30 (23160)	Geosynthetics - Geogrids used in reinforced soil retaining structures - Specification Amendment - 2
3	TXD 30 (24916)	Geosynthetics - Geocells - Specification Part 1 Load Bearing Application Amendment - 2
4	TXD 30 (24918)	Geosynthetics - Geocells - Specification Part 2 Slope Erosion Protection Application Amendment - 2

Total Published Standards:73 Total Standards Under development:5

Aspect Wise Report

Product : 21
Code of Practices : 9
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	Geotextiles - Methods of Test - Part 5 Determination of Tensile Properties Using a Wide Width Strip
2	IS 14715 : 2000	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	Jute geotextiles - Part 1 Strengthening of sub-grade in roads - Specification second revision

2	IS 14715 (Part 2) : 2016	Jute geotextiles - Part 2 Control of bank erosion in rivers and waterways - Specification second revision
3	IS 14986 : 2001	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	Geosynthetics - for highways - Specification
6	IS 16090 : 2013	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	Geosynthetics - Geotextiles used in sub-grade separation in pavement structures - Specification
10	IS 16392 : 2015	Geosynthetics - Geotextiles for permanent erosion control in hard armor systems - Specification
11	IS 16393 : 2015	Geosynthetics - Geotextiles used in subsurface drainage application - Specification
12	IS 16653 : 2017	Geosynthetics - Needle punched nonwoven geobags for coastal and waterways protection - Specification
13	IS 16654 : 2017	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 Polymer Gabions for Coastal and Waterways Protection Specification
21	IS 18309 : 2023	Geosynthetics- Prefabricated Vertical Drains for Quick Consolidation for Very Soft Plastic Soil - Specification