Doc. No: TXD 30 (26989)

November 2024

**AMENDMENT NO. 3 NOVEMBER 2024**

**TO**

**IS 17373 : 2020 GEOSYNTHETICS** — **GEOGRIDS USED IN REINFORCED SOIL RETAINING STRUCTURES** — **SPECIFICATION**

(*Page* 2, *clause* **4**, *see also* Amendment No. 2) — Substitute the following for existing clause:

‘**4 TYPES OF GEOGRIDS**

Geogrids shall be of the following three types based on the tensile strength and aperture size:

1. *Type* 1 — Polyester knitted or woven geogrids having tensile strength in machine direction from 60 kN/m to 400 kN/m with aperture size in machine direction and cross machine direction from 10 mm to 50 mm.
2. *Type* 2 — Polyester bonded geogrids having tensile strength in machine direction from 30 kN/m to 300 kN/m with aperture size in machine direction from 50 mm to 1000 mm and in cross machine direction from 10 mm to 300 mm.
3. *Type* 3 — Polyester bonded geogrids having tensile strength in machine direction from 300 kN/m to 1600 kN/m with aperture size in machine direction from 50 mm to 1000 mm and in cross machine direction from 50 mm to 500 mm.

(*Page* 4, *Table* 2) — Substitute the following for the existing table:

**‘Table 2 Requirements of Uniaxial Polyester Geogrids (Type 2, Bonded)**

(*Clause* 6.2)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl No** | **Characteristic** | **Requirements** | | | | | | | | | | | | | |  |  | **Method of Test, Ref to** |
| **30/5** | **40/5** | **50/5** | **60/5** | **70/5** | **80/5** | **90/5** | **100/5** | **120/5** | **130/5** | **140/5** | **150/5** | **175/5** | **200/5** | **250/5** | **300/5** |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (17) |
| i) | Ultimate tensile strength, kN/m, *Min* (*see* Note 2) |  | | | | | | | | | | | | | |  |  | IS 16635 |
| a) MD | ≥30 | ≥40 | ≥50 | ≥60 | ≥70 | ≥80 | ≥90 | ≥100 | ≥120 | ≥130 | ≥140 | ≥150 | ≥175 | ≥200 | ≥250 | ≥300 |
| b) CD | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 | ≥5 |
| ii) | Elongation at designated load, percent | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | IS 16635 |
| iii) | UV resistance, strength retained after  500 h exposure, percent | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | IS 13162 (Part 2) |
| iv) | Chemical resistance, strength retained  after 72 h immersion, percent | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | IS 17363 |
| v) | Width, m | 1 to 6 (tolerance ± 10 mm ) | | | | | | | | | | | | | | | | - |
| vi) | Roll length, m | 25 to 200 (tolerance + 1 m with no negative tolerance) | | | | | | | | | | | | | | | | - |
| MD : Machine Direction, CD: Cross Direction  NOTES  **1** For weathering and chemical degradation having a range of products identical except for mass per area, it is sufficient to subject only the product with the lowest mass per area to the test. The result of the test may be applied for the other products in the range, unless they have been tested separately.  **2** Geogrids with intermediate ultimate tensile strength in machine direction other than those specified above may also be manufactured, provided they conform to all the requirements specified in this table. | | | | | | | | | | | | | | | | | | |

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(*Page* 5, *Table* 3) — Substitute the following for the existing table:

**‘Table 3 Requirements of Uniaxial Polyester Geogrids (Type 3, Bonded)**

( *Clause* 6.2 )

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl No.** | **Characteristic** | **Requirements** | | | | | | | | | | | | | | | **Method of Test, Ref to** |
| **300** | **350** | **400** | **500** | **600** | **700** | **800** | **900** | **1000** | **1100** | **1200** | **1300** | **1400** | **1500** | **1600** |  |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (20) |
| i) | Ultimate tensile strength (kN/m), *Min* (*See* Notes 2 and 3)  a) MD  b) CD | 300  1 | 350  1 | 400  1 | 500  1 | 600  1 | 700  1 | 800  1 | 900  1 | 1000  1 | 1100  1 | 1200  1 | 1300  1 | 1400  1 | 1500  1 | 1600  1 | IS 16635 |
| ii) | Elongation at designed load in MD and CD, *percent* | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | IS 16635 |
| iii) | UV resistance, strength retained after 500 h exposure, *percent* | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | IS 13162 (Part 2) |
| iv) | Chemical resistance, strength retained after 72 h immersion, *percent* | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | ≥70 | IS 17363 |
| v) | Width, m | 1 to 6 (Tolerance ± 10 mm) | | | | | | | | | | | | | | | |
| vi) | Roll length, m | 25 to 200 (Tolerance +1 m with no negative tolerance) | | | | | | | | | | | | | | | |
| MD : Machine Direction, CD: Cross Direction  NOTES  1) For weathering and chemical degradation having a range of products identical except for mass per area, it is sufficient to subject only the product with the lowest mass per area to the test. The result of the test may be applied for the other products in the range, unless they have been tested separately.  2) Geogrids with intermediate ultimate tensile strength in machine direction other than those specified above may also be manufactured, provided they conform to all the requirements specified in this table.  3) If required by the buyer, geogrids with ultimate tensile strength ≥ 5 kN/m in the cross-machine direction may also be supplied. | | | | | | | | | | | | | | | | | |

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