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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

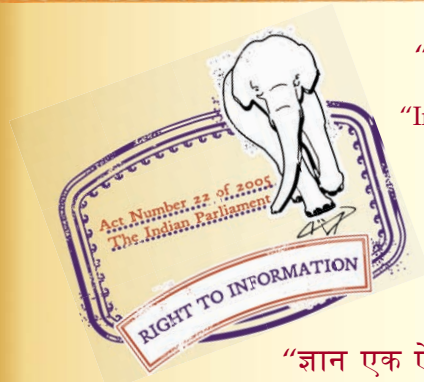
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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 14715 (2000): Woven Jute Geotextiles [TXD 30:
Geotextiles and Industrial Fabrics]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS 14715 : 2000

भारतीय मानक

बुने हुए जूट के भूवस्त्र — विशिष्टि

Indian Standard

WOVEN JUTE GEOTEXTILES —
SPECIFICATION

ICS 59.080.70

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Price Group 2

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Geotextiles and Industrial Fabrics Sectional Committee had been approved by the Textile Division Council.

Woven jute geotextiles are used for stabilization of soil through vegetation against erosion of landscape and soil slopes as well as protection of river bank against erosion and similar applications involving separation and filtration. The standard is based on work done by Indian Jute Industry's Research Association, Calcutta in this field.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

WOVEN JUTE GEOTEXTILES — SPECIFICATION

1 SCOPE

This standard prescribes constructional details and other particulars of woven jute geotextiles.

2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards given in Annex A.

3 TERMINOLOGY

For the purpose of this standard the definitions given in IS 13321 (Part 1), IS 4744 and SP 45 along with the following shall apply.

3.1 Geo-Jute Textiles

Geotextiles made from jute fibre is termed as jute geotextiles or geo-jute textiles.

3.2 Rot Proofed Jute Geotextiles

Woven jute fabric treated with admixture of minimum 20 percent bitumen and suitable rot proofing agent is termed as rot-proofed jute geotextile.

4 TYPES

The jute geotextile shall be of the following types:

Type I — For soil slop protection at hill side, road side and railway tracks.

Type II — For river embankment protection and other applications involving filtration and separation functions.

5 REQUIREMENTS

Jute geotextiles shall conform to the requirements given in Table 1.

Table 1 Requirements of Jute Geotextiles
(Clause 5)

Characteristic	Requirement		Method of Test
	Type I	Type II (Rot Proofed)	
Construction	Plain weave (1 × 1)	Twill weave (2 × 1)	Visual
Open area as percent of total	65	2	
Corrected mass, <i>Min.</i> g/m ² (see Notes 1 & 2)	500	760 (untreated) 1 200 (treated)	IS 2387

Length, m	70 or as required	50 or as required	IS 1954
Width, <i>Min.</i> , cm	122	76	do
Ends/dm	6.5	102	IS 1963
Picks/dm	4.5	39	do
Thickness, <i>Min.</i> , mm (at 200 kPa)	4.5	2.8	IS 13162 (Part 3)
Breaking load <i>Min.</i> , (N) 20 cm × 10 cm strip (see Note 3)			IS 1969
Warpway	750	2 000	
Weftway	520	2 000	
Elongation at break <i>Max.</i> , percent	7	10	do
Puncture resistance <i>Min.</i> , N/Sq.cm	—	300	IS 13162 (Part 4)
Water permeability at 10 cm water column, <i>Min.</i> , l/sq.m/s	—	20	IS 14324
Copper content, <i>Min.</i> , percent, (for rot-proofed geotextiles)	—	0.8	IS 1039
Bitumen content <i>Min.</i> , percent, (for rot-proofed geotextiles)	—	20	IS 8477

NOTES

1 Jute geotextiles of different weights may be used depending upon degree of soil protection required.

2 The corrected mass per square metre shall be calculated on roll mass basis. The corrected mass of roll (M_R) shall be calculated as under:

$$M_R = \frac{\text{Net mass of roll (kg)} \times (100 + \text{Contract moisture regain}^*)}{(100 + \text{Observed moisture regain})}$$

Mass of fabric (g/m²) shall be calculated as under:

$$\text{Mass of fabric (g/m}^2\text{)} = \frac{M_R \times 100 \times 1\,000}{\text{Width (cm)} \times \text{Length of roll (m)}}$$

* Contract moisture regain is 20 percent.

3 As Type I fabric is open mesh, the strength assessment tests shall be conducted on 20 specimens at random on constant rate of traverse machine at rate of 300 ± 15 mm/min.

6 FIXATION

6.1 The open mesh fabrics (Type I) are laid with side by side overlapping of 10 cm while end-to-end overlapping is 15 cm. The overlapping edges are fixed with the ground with the help of 'J'-shape hooks made of iron. The sides, top and bottom are anchored in trenches of 15 cm × 15 cm size.

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6.2 Type II fabrics are laid with side by side overlapping of 10-15 cm while end to end overlapping is 30 cm. The fabrics are anchored at top, bottom and side in trenches of 1 m x 1 m size. The trenches are covered by heavy materials like boulders, brick/concrete blocks, etc.

7 PACKING

The fabric shall be packed in accordance with procedure prescribed in IS 4744.

8 MARKING

8.1 Unless otherwise agreed to between the buyer and the seller, the rolls shall be stencilled with an indelible ink of any colour with the following information:

- Roll number;
- Type;
- Length in metres;
- Indication of the source of manufacture;
- Month and year of packing; and
- Other declaration required as per law in force.

8.2 BIS Certification Marking

The rolls may also be marked with the Standard Mark.

8.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from Bureau of Indian Standards.

9 SAMPLING AND CRITERION FOR CONFORMITY

9.1 Lot

9.1.1 The quantity of geo-jute fabric purported to be of one definite type and width, packed in bales containing definite length and delivered to a buyer against one despatch note shall constitute the lot.

9.2 Sampling Procedure

9.2.1 For assessing the conformity of a lot to the requirements of this standard, the number of rolls to be selected from the lot shall be in accordance with Table 2.

Table 2 Selection of Rolls for Testing

Sl No. (1)	No. of Rolls in the Lot (2)	No. of Rolls to be Selected (3)
i)	1 to 20	1
ii)	21 " 50	2
iii)	51 " 100	3
iv)	101 " 200	4
v)	201 and above	4 + 1 for every 100 rolls or part thereof above 200 rolls

9.2.2 From the rolls selected as per Table 2, the test sample shall be drawn as follows:

Sl No.	Test	Test Sample
i)	Ends and picks	3 specimens from different locations per selected roll
ii)	Width	
iii)	Thickness	
iv)	Breaking load and elongation	
v)	Length	One specimen from roll selected
vi)	Corrected mass	
vii)	Puncture resistance	
viii)	Water permeability	
ix)	Bitumen content	
x)	Copper content	
xi)	Open-area, percent	

9.3 Criterion for Conformity

9.3.1 The lot shall be considered as conforming to the requirements of the standard, if the following conditions are satisfied:

- The average warpway and weftway breaking load values and elongation are not less than the corresponding specified requirements.
- The average mass per square metre (on roll mass basis), and the average ends and picks per dm are in accordance with the requirements specified.
- The average width of the rolls under test is in accordance with the requirements specified.

ANNEX A
(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
1039 : 1989	Textiles — Estimation of small quantities of copper, iron, manganese, chromium and zinc (<i>first revision</i>)	8477 : 1985	Methods for determination of bitumen content in laminated jute bags (<i>first revision</i>)
1954 : 1990	Methods for determination of length and width of woven fabrics (<i>second revision</i>)	13162 (Part 3) : 1992	Geotextiles — Methods of test: Part 3 Determination of thickness at specified pressure
1963 : 1981	Methods for determination of threads per unit length in woven fabrics (<i>second revision</i>)	13162 (Part 4) : 1992	Geotextiles — Methods of test: Part 4 Determination of puncture resistance by falling cone method
1969 : 1985	Methods for determination of breaking load and elongation of woven textile fabrics (<i>second revision</i>)	13321 (Part 1) : 1992	Glossary of terms for geosynthetics: Part 1 Terms used in materials and properties
2387 : 1969	Method for determination of weight of jute fabrics (<i>first revision</i>)	14324 : 1995	Geotextiles — Method of test for determination of water permeability — Permittivity
4744 : 1991	Textiles — Packaging of jute products in rolls — Specification (<i>first revision</i>)	SP 45 : 1988	Handbook on glossary of textile terms

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Amendments Issued Since Publication

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