



राष्ट्रीय
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NATIONAL
JUTE BOARD

National Jute Board | Ministry of Textiles | Govt. of India

JUTE GEOTEXTILES (JGT)

Source, Sample & Specification Book



Jute Geotextiles as Sustainable and Eco-Friendly Materials -
Green Technology Used In Different Civil Engineering Applications

NATIONAL JUTE BOARD

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INTRODUCTION

Jute geotextile (JGT) is an emerging engineering product with application-potential in many areas of civil engineering faced with soil related problems. The products have already been successfully tried in protection of banks of rivers and canals, management of slopes, strengthening of roads, controlling of subsidence of railway tracks, stabilising embankments & overburden dumps in mines. Continuing research on JGT is opening up potential the product in new areas like pond ash stabilisation.

The biggest advantage of JGT is its easy availability, economic price-range (much lower than the synthetic and other natural varieties) and eco-compatibility. Besides, JGT can be tailor-made as per end-users' technical requirements like porometry, permittivity, tensile strength and other parameters.

This literature provides the interested end-users, engineers and consultants with technical specifications of JGT standard as per BIS specification. This will enable the users to select the right type of JGT for a particular job or to decide on a non-standard type of JGT if warranted.

JUTE GEOTEXTILES FOR CONTROL OF SURFACE SOIL EROSION BY RAIN AND WIND

Open Weave Jute Geotextile

Indicative Specifications (IS 14986:2001)

TYPE / PROPERTIES	1	2	3	Test Method
(GSM)Weight (g/m ²) at 20% M.R.	730	500	292	ASTM D5261
Threads/dm (MD x CD)*	7 x 7	6.5 x 4.5	12 x 12	IS 1963
Thickness (mm)	6	5	3	ASTM D5199
Width (cm)	122	122	122	IS 1954
Open area (%)	40	50	60	-
Strength (kN/m) [MD x CD]	12 x 12	10 x 7.5	10 x 10	ASTM D459

*MD x CD - Machine Direction & Cross Direction



Type 1: 730 GSM



Type 2: 500 GSM



Type 3: 292 GSM

APPLICATION AREAS:

- Slopes of road, railway track and hill
- Bridge approach, slope of reservoirs and embankments
- Stabilisation of sand dunes on sea beach, over burden dumps of open cast mines and fly ash dumps of Power Plants
- Afforestation in semi-arid zones

APPLICATION PHOTO



Destabilized hill slope



JGT Laid over the prepared slope



Slope covered with vegetation

JUTE GEOTEXTILES FOR SEPARATION AND FILTRATION

WOVEN JUTE GEOTEXTILES

Indicative Specifications

Properties	D.W. Plain (IS 14715 Part I : 2016)	Water repellant & durable (IS 14715 Part II : 2016)	Test Method
(GSM) Weight (g/m ²)	724	627	ASTM D5261
Threads/dm (MD x CD)	94 x 39	85 x 32	IS 1963
Thickness (mm)	1.85	1.7	ASTM D5199
Width (cm) min	100	100	IS 1954
Strength (kN/m)(MD x CD), Minimum	25 x 25	20 x 20	ASTM D4595
Elongation at break (%) (MD x CD)	10 x 10	8 x 8	ASTM D4595
Pore size (O ₉₀) Micron	150 - 400	150 - 400	ASTM D4751
Permittivity at 50 cm water head (sec-1)	350 x 10 ⁻³	350 x 10 ⁻³	ASTM D4491
Puncture resistance (kN)	0.500	0.400	ASTM D4833



724 GSM



627 GSM

APPLICATION AREAS:

- › Strengthening road pavement
- › River and canal bank protection
- › Construction of road & railway embankments on soft soil

APPLICATION PHOTO



Laying of jute geotextile
on road sub-grade



Road constructed with jute geotextile



Laying of jute geotextile on eroded
river bank



Jute geotextile treated
stabilized river bank

JUTE GEOTEXTILES FOR FILTRATION AND DRAINAGE

NON –WOVEN GEOTEXTILES

Indicative Specifications (IS 17070-2018):

PROPERTIES	1	2	Test Method
(GSM) Weight (g/m ²) at 20% M.R.	500	1000	ASTM D5261
Thickness (mm)	4	8	ASTM D5199
Width (cm)	150	150	IS 1954
Strength (kN/m) [MD x CD]	4 x 5	6 x 7	ASTM D4595
Elongation at break (%) (MD x CD)	20 x 25	20 x 25	ASTM D4595
Pore size (O ₉₀) Micron	500	300	ASTM D4751
Co-eff. of water permittivity (m/s)	3.4×10^{-3}	3.4×10^{-4}	ASTM D4491



500 GSM



1000 GSM

APPLICATION AREAS:

- › Construction of concealed rubble drains by the side of roads and railways
- › As mulching fabric

APPLICATION PHOTO



Non woven jute geotextile as trench drain



Jute Non woven as mulching fabric



Nonwoven jute agrotextile is an ideal agromulching material for growth of plant

SAND DUNE STABILIZATION WITH JGT



Formation of Sand Dune



Type of JGT



Laying of JGT



Sprouting of Grass



Greenery in Desert

JUTE GEOCELLS FOR SLOPE STABILIZATION AND PAVEMENT APPLICATIONS

Indicative Specifications:

FABRIC QUALITY	129CM - 51X51/DM-270GSM			
TEST METHOD	ASTM D 5034 (GRAB METHOD) ;[G.L = 75MM, WIDTH - 25MM, TRAVEL SPEED- 300MM/MIN			
	WARP		WEFT	
Average	STRENGTH (Kgf)	ELONGATION (mm)	STRENGTH (Kgf)	ELONGATION (mm)
	44.27	1.33	34.97	4.67
CV%	5.365	43.410	11.133	12.363
TEST METHOD	IS 1969(PART -I) - STRIP METHOD ;[G.L = 200MM, WIDTH - 50MM, TRAVEL SPEED- 100MM/MIN			
	WARP		WEFT	
Average	STRENGTH (Kgf)	ELONGATION (mm)	STRENGTH (Kgf)	ELONGATION (mm)
	77.6	6.67	59.72	23.33
CV%	8.16	8.66	3.34	2.47



APPLICATION AREAS:

- Slopes of road, hill and pavement applications

Manufacturers of Jute Geotextiles in India

Sl. No	Mill Name and Address	Name	Contact No.	Email	Type of Fabric	Fabric GSM	IS Code
1	Hooghly Infrastructure Pvt.Ltd Unit-HukumChand Jute Mills	Mr.B.Sarkar Mr.P.Banerjee	9903905010 9903905029	edp.hipl@hooghlygroup.com	Woven	724	IS-14715 Part-1 2016
						627	IS-14715 Part-2 2016
2	The Naihati jute Mill Co.Ltd	Mr. K.K Sonthalia	9831037979	kksonthalia@naihatijute.com	Woven	724	IS-14715 Part-1 2016
3	Aditya Trans Link Private.Limited, Unit Shyamnagar Jute Mill Co.Ltd 33 JL Nehru Road,Chatterjee International, 6 th floor,Kolkata-71	Dr. Sumant Poddar	9830083626	sumant.poddar@gmail.com	Woven	724	IS-14715 Part-1 2016
						627	IS-14715 Part-2 2016
4	Gloster Limited 21 Strand Road, Kolkata-700001	Mr. D.C. Baheti Mr. B.L. Atal	9830020786 9674175751	marketing@glosterjute.com	Woven	724	IS-14715 Part-1 2016
					Non Woven	500	IS-17070 2018
						1000	
					Open Weave	292	IS-14986 2001
						500	
730							
5	Reliance Jute Mills (International) Limited 13/C Kashinath Mallik Lane, 1st Floor,Kolkata-73	Mr. Mukesh Suhasaria	9830053094	mktgho@reliancejute.com	Woven	724	IS-14715 Part-1 2016
					Open Weave	292	IS-14986 2001
						500	
730							
6	Birla Corporation Ltd,Unit- Birla Jute Mills,Birla Building,4 th Floor,9/1 R.N Mukherjee Road,Kolkata-700001	Mr.G.R.Verma Mr.Deepak Kumar Gupta	9339734696 9903538990	grverma@birlacorp.com deepakkumar.gupta@birlacorp. com	Woven	724	IS-14715 Part-1 2016
					Non Woven	627	IS-14715 Part-2 2016
						500	IS-17070 2018
					1000		
					Open Weave	292	IS-14986 2001
						500	
730							
7	Auckland Jute Mills,P.O- Jagaddal,North 24 Pargana,Pin-743125	Mr.H.S.Bayed Mr.S.C.Bhutoria	9831000453 9831000469	ail@aucklandjute.com	All Types of Jute Geo Textiles as per market demand.		
8	Anglo India Jute & Textile Industries Pvt.Ltd	Mr.O.P.Sharma	9831631614	anglo@gayatrigroup.co	Open Weave	500	IS-14986 2001
						730	
9	Ludlow Jute & Specialities Limited 23C Ashutosh Choudhary Avenue Kolkata 700019	Mr.Anand Saraff Mr.Amit Somani	9831225662 9830213627	anand.saraff@ludlowjute.com amit.somani@ludlowjute.com	Woven	724	IS-14715 Part-1 2016
					Non Woven	627	IS-14715 Part-2 2016
						500	IS-17070 2018
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					Open Weave	292	IS-14986 2001
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