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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 OF 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 STANDARD JGT. 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.

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

Open Weave Geo-textiles

Indicative Specifications

TYPES / PROPERTIES	1	2	3	Test Method
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

APPLICATION AREAS

- ❖ SLOPES OF ROAD, RAILWAY AND HILL
- ❖ BRIDGE APPROACH, SLOPE OF RESERVOIRS AND EMABANKMENTS
- ❖ STABILISATION OF SAND DUNES ON SEA BEACH, OVER BURDEN DUMPS OF OPEN CAST MINES AND POND ASH DUMPS OF POWER PLANTS.
- ❖ AFFORESTATION IN SEMI-ARID ZONES

**JUTE GEOTEXTILS FOR CONTROL OF SURFACE SOIL EROSION
BY RAIN AND WIND**



Type-1 – 730 gsm



Type-2 – 500 gsm



Type-3 – 292 gsm

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



Type-1-730 gsm



Type-2-500 gsm



Type-3-292 gsm

APPLICATION PHOTO



Destabilised hill slope, Sahashradhara



JGT laid over the prepared slope, Shahasradhara



Condition of the JGT treated Mine Spoil, Shahasradhara

JUTE GEOTEXTILES FOR SEPARATION AND FILTRATION

TYPICAL WOVEN GEOTEXTILES

Indicative Specifications

TYPES / PROPERTIES	D.W. Plain	D.W. Plain Water repellent & durable	Test Method
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
Tensile Strength (kN/m) (MD × CD),min	25 x 25	20 x 20	ASTM D4595
Elongation at break (%) (MD × 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

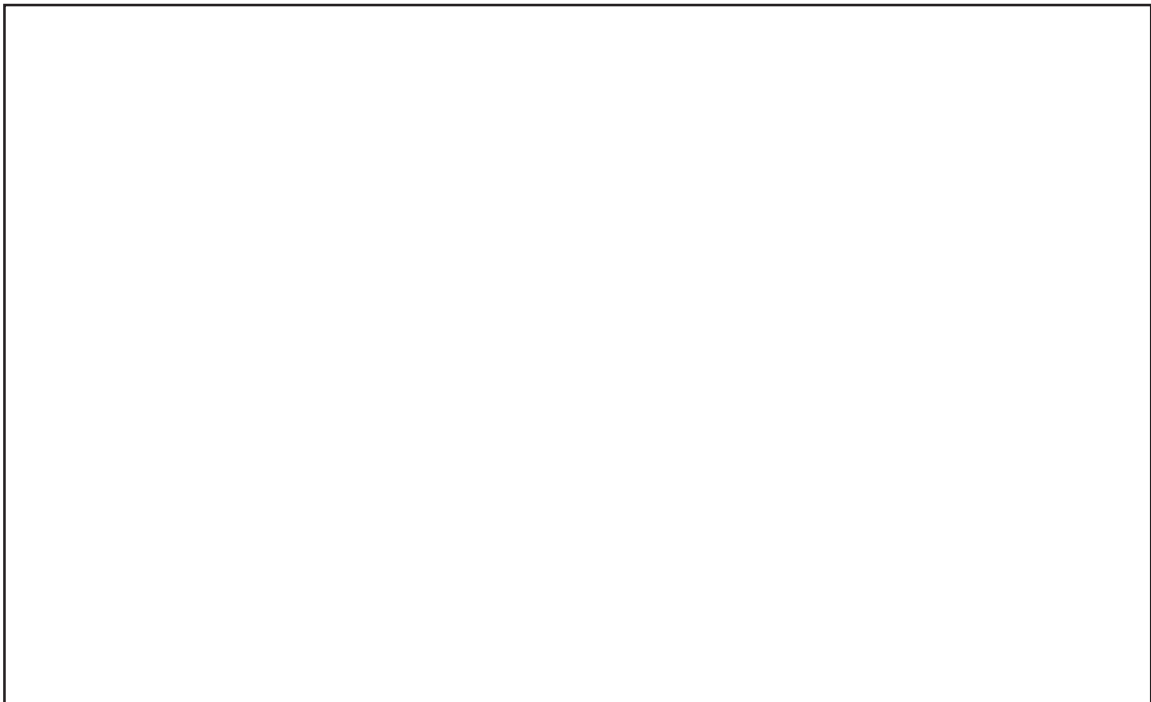
APPLICATION AREAS

- ❖ CONSTRUCTION OF ROAD & RAILWAY EMBANKMENTS ON SOFT SOIL
- ❖ STRENGTHENING ROAD PAVEMENT
- ❖ RIVER AND CANAL BANK PROTECTION

**JUTE GEOTEXTILS FOR SEPARATION
AND FILTRATION**



25 kN/m, 724 gsm



20 kN/m, 627 gsm (Water repellent & durable)

JUTE GEOTEXTILS FOR SEPARATION AND FILTRATION



25 kn/m, 724 gsm



20 kN/m, 627 gsm (Water repellent & durable)

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

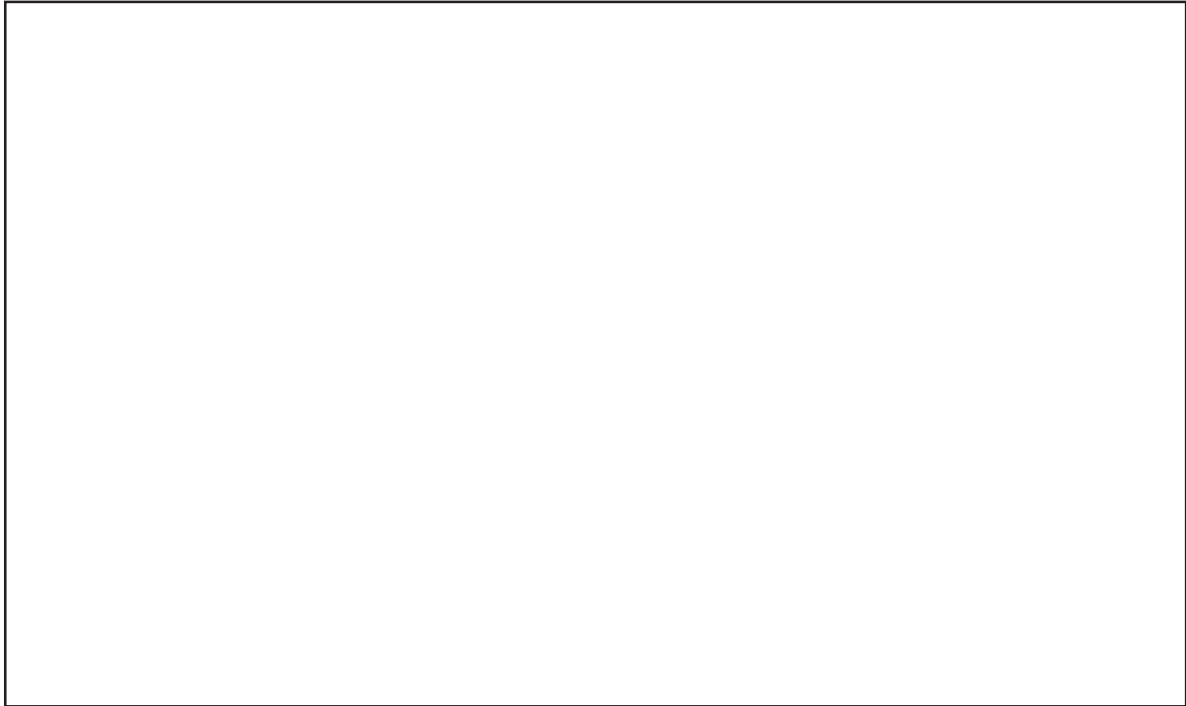
Indicative Specifications

TYPES / PROPERTIES	1	2	Test Method
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
Co-eff. of water permittivity (m/s)	3.4 x 10 ⁻³	3.4 x 10 ⁻⁴	ASTM D4491

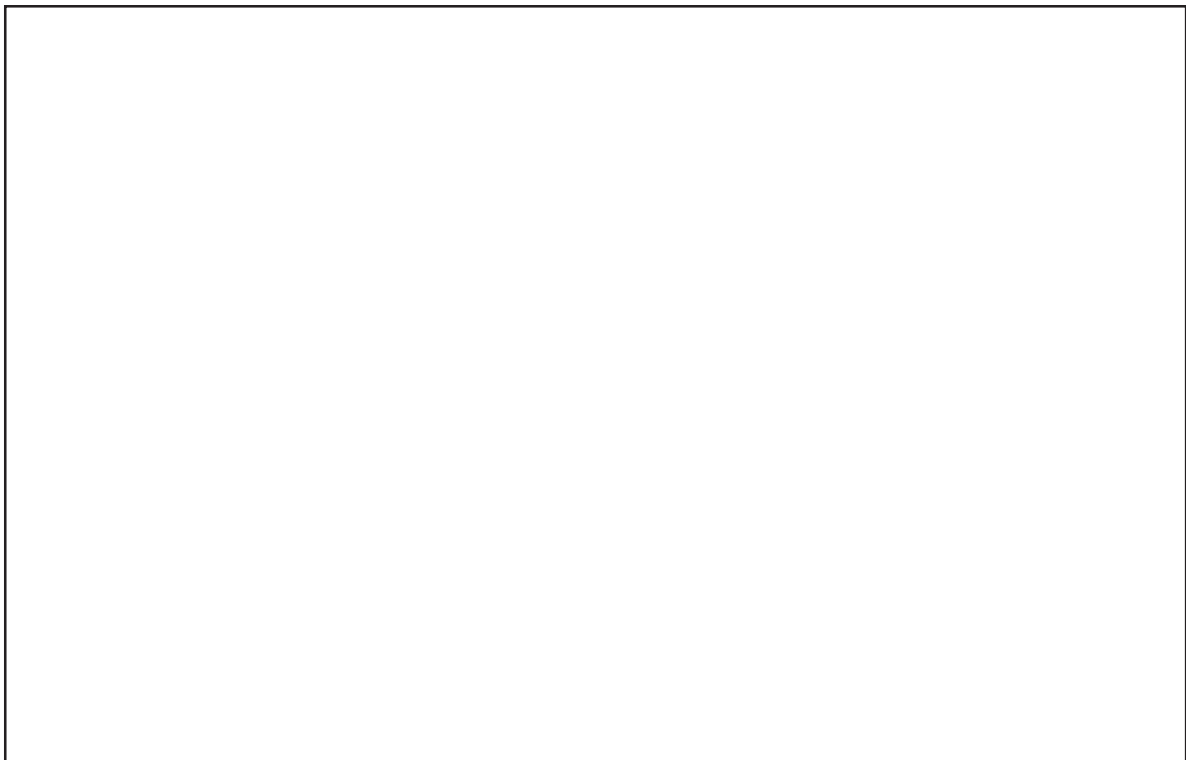
APPLICATION AREAS

- CONSTRUCTION OF CONCEALED RUBBLE DRAINS BY THE SIDE OF ROADS AND RAILWAYS
- DRAINAGE FOR FILL MATERIALS IN FLYOVERS

JUTE GEOTEXTILES FOR FILTRATION AND DRAINAGE



Type - 1 : 500 gsm



Type - 2 : 1000 gsm

JUTE GEOTEXTILES FOR FILTRATION AND DRAINAGE



Type - 1 : 500 gsm



Type - 2 : 1000 gsm

APPLICATION PHOTO



NON WOVEN
JUTE
◀ GEOTEXTILE
AS TRENCH
DRAIN

NONWOVEN
JUTE
GEOTEXTILE
LAID ON THE
▶ FORMATION OF
RAILWAY TRACK



JUTE
NONWOVEN AS
▶ MULCHING
FABRIC

**PRE-FABRICATED JUTE DRAIN
FOR ACCELARATED CONSOLIDATION OF SOFT SOIL**

Indicative Specification

<i>Material</i>	<i>Coir-wicks within jute sheath</i>
<i>Width (mm)</i>	100
<i>Thickness (mm)</i>	5
<i>Tensile Strength (kN/100 mm)</i>	45
<i>Pore size (O_{90}) [micron]</i>	300
<i>Discharge Capacity at 50 kPa (ml/s)</i>	13

APPLICATION AREAS

- AIRPORTS, WIREHOUSE, CAR PARKS
- REPAIRING OF ROAD & RAILWAY EMBANKMENT MADE OF COMPRESSIBLE FILL MATERIAL

**PRE-FAB JUTE DRAINS FOR
ACCELARATED CONSOLIDATION OF SOFT SOIL**



Pre- Fabricated Vertical Jute Drain

**PRE-FAB JUTE DRAINS FOR
ACCELARATED CONSOLIDATION OF SOFT SOIL**



Pre- Fabricated Vertical Jute Drain

APPLICATION PHOTO



PRE- FABRICATED VERTICAL JUTE DRAIN FOR
ACCELERATED CONSOLIDATION OF SOFT SOIL