TENAX **TENDRAIN**

Type: **750/1**

Geocomposite

TENAX **TENDRAIN** geocomposites are a combination of TENAX geonets and nonwoven geotextiles*. The combination of geotextiles (filtering action) and geonet (drainage and protection) offers a complete system of "filter-drainage-protection".

TENAX **TENDRAIN** have an inner core composed of a high profile triangular shaped mesh structures made by three sets of overlaid intersecting strands. The inner strands, thicker and heavier, provide high compressive resistance and transmissivity.

Typical applications

Waste disposals; underground structures; retaining walls; gardens and sport fields; road foundations; ground channels.

PHYSICAL CHARACTERISTICS	TEST METHOD	UNIT	TENDRAIN 750/1	NOTES
GEONET POLYMER			HDPE	
GEOTEXTILE POLYMER			PP	
U.V. STABILIZER			carbon black	

DIMENSIONAL CHARACTERISTICS	TEST METHOD	UNIT	TENDRAIN 750/1	NOTES
THICKNESS at 20 kPa	ISO 9863	mm	5.5	a
THICKNESS at 200 kPa	ISO 9863	mm	5.0	a
UNIT WEIGHT	ISO 9864	g/m²	890	a
ROLL WIDTH		m	3.80	a,d
ROLL LENGTH		m	50.0	a
ROLL DIAMETER		m	0.62	a
ROLL VOLUME		m³	1.50	a
ROLL GROSS WEIGHT		kg	170.0	a

TECHNICAL CHARACTERISTICS	TEST METHOD	UNIT	TENDRAIN 750/1	NOTES
HYDRAULIC FLOW RATE				
i=1 σv = 20 kPa	ISO 12958	m²/s	1.90E-03	a,b,c
i=1 σv = 100 kPa	ISO 12958	m²/s	1.70E-03	a,b,c
i=1 σv = 200 kPa	ISO 12958	m²/s	1.50E-03	a,b,c
i=1 σv = 500 kPa	ISO 12958	m²/s	9.90E-04	a,b,c
TENSILE STRENGTH	ISO 10319	kN/m	15.0	a,b
ELONGATION AT PEAK	ISO 10319	%	50	a,b

GEOTEXTILE CHARACTERISTICS	TEST METHOD	UNIT	TENDRAIN 750/1	NOTES
MASS PER UNIT WEIGHT	ISO 9864	g/m²	140	a
OPENING SIZE	ISO 12956	mm	0.08	a

NOTES:
a) Typical values
b) Longitudinal direction
c) 2mm HDPE liner boundary condition
d) Upon request available 2.00 m wide
(*) Properties may vary upon specific geotextiles used

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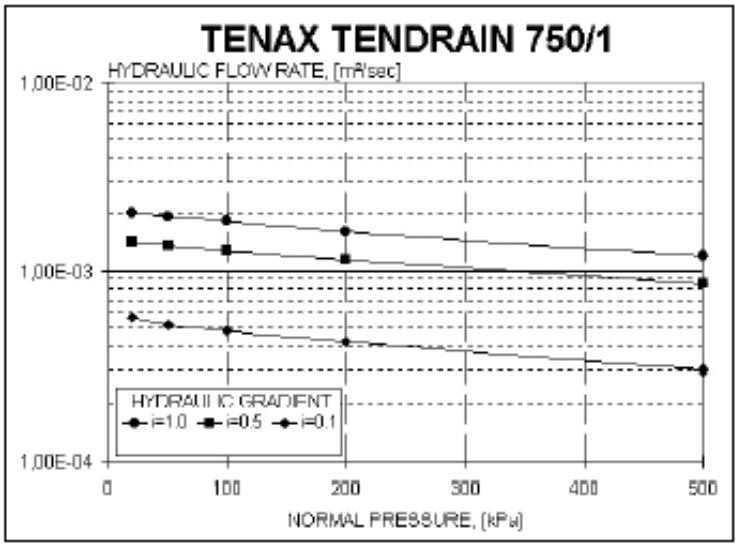
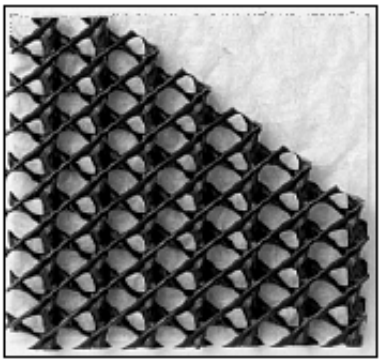
Typical Hydraulic Characteristics





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TENAX TENDRAIN DRAINAGE BLANKET

HDPE TRI-PLANAR GEONET WITH GEOTEXTILE ON BOTH FACES

TENAX **TENDRAIN** geocomposites are a combination of TENAX geonets and nonwoven geotextiles. The combination of geotextiles (filtering action) and geonet (drainage and protection) offers a complete system of "filter-drainage-protection".
TENAX **TENDRAIN** have an inner core composed of a high profile triangular shaped mesh structures made by three sets of overlaid intersecting strands. The inner strands, thicker and heavier, provide high compressive resistance and transmissivity.

Typical applications

Waste disposals; underground structures; retaining walls; gardens and sport fields; road foundations; ground channels.

GEONET CORE CHARACTERISTICS	TEST METHOD	UNIT	TENDRAIN 750-2	TENDRAIN 1000-2	TENDRAIN 1300-2	NOTES
THICKNESS at 20 kPa	ASTM D5199		5.2	6.0	7.0	a,g
POLYMER			HDPE	HDPE	HDPE	
POLYMER DENSITY	ASTM D1505	g/cm³	0.94—0.96	0.94—0.96	0.94—0.96	g
CARBON BLACK CONTENT	ASTM D4218	%	2—3	2—3	2—3	
MELT FLOW INDEX	ASTM D1238	g/10min	0.4	0.4	0.4	e
CREEP REDUCTION FACTOR	GRI GC8		1.30	1.15	1.30	a,f,g

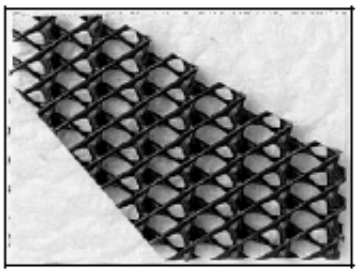
GEOCOMPOSITE DIMENSIONAL CHARACTERISTICS	TEST METHOD	UNIT	TENDRAIN 750-2	TENDRAIN 1000-2	TENDRAIN 1300-2	NOTES
ROLL WIDTH		m	2.00	2.00	2.00	a
ROLL LENGTH		m	30.0	30.0	30.0	a
ROLL DIAMETER		m	0.59	0.62	0.67	a
ROLL VOLUME		m³	0.70	0.77	0.90	a

GEOCOMPOSITE TECHNICAL CHARACTERISTICS	TEST METHOD	UNIT	TENDRAIN 750-2	TENDRAIN 1000-2	TENDRAIN 1300-2	NOTES
TRANSMISSIVITY						
i=0.1 σ_v = 20 kPa	ASTM D4716	m²/s	1.15E-03	2.00E-03	3.50E-03	a,b,c,d
i=0.1 σ_v = 100 kPa	ASTM D4716	m²/s	1.00E-03	1.80E-03	3.00E-03	a,b,c,d
i=0.1 σ_v = 200 kPa	ASTM D4716	m²/s	9.00E-04	1.50E-03	2.50E-03	a,b,c,d
i=0.1 σ_v = 500 kPa	ASTM D4716	m²/s	8.50E-04	1.20E-03	1.50E-03	a,b,c,d
TENSILE STRENGTH	ASTM D4595	kN/m	20.0	25.0	30.0	a,b,d

GEOTEXTILE CHARACTERISTICS	TEST METHOD	UNIT		NOTES
GEOTEXTILE POLYMER AND TYPE			PET CONTINUOUS FILAMENT	
UNIT WEIGHT	GB/T 13762	g/m²	200	a,g
AOS, O_{90}	GB/T 14799	mm	0.07÷0.20	a,g

NOTES:
a) Typical values
b) Longitudinal direction
c) 2mm HDPE Smooth Membrane boundary condition
d) Geocomposite transmissivity and tensile strength properties measured by manufacturer every 25.000 m²
e) Maximum Value
f) Determined from 10,000 hour compressive creep test under 100kPa normal stresses, at 20°C temperature, and extrapolated to 30 year design life
g) Geotextile and geonet properties listed are prior to lamination.

TENDRAIN



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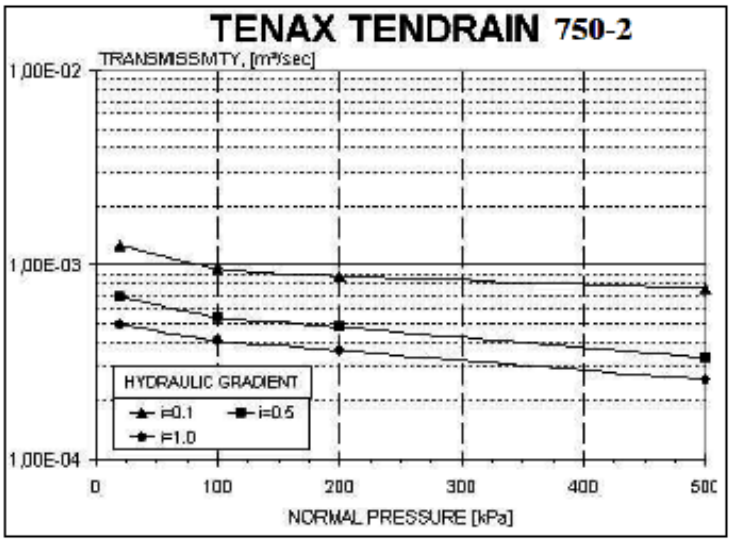
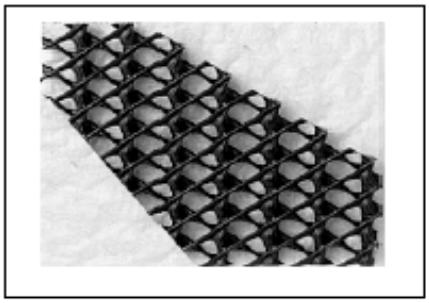
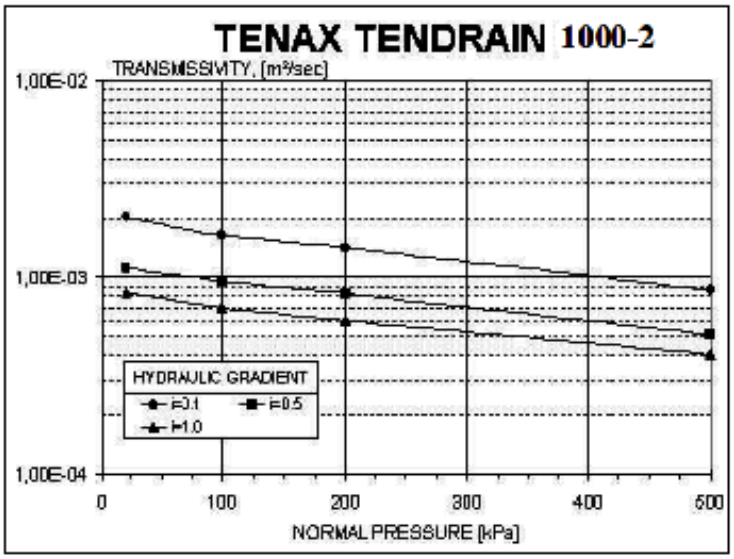
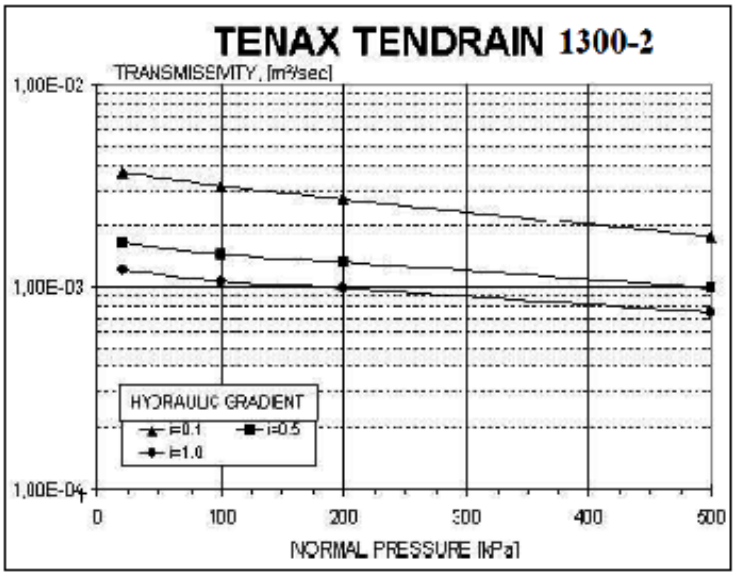
Typical Hydraulic Characteristics









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TESTING LABORATORY TENAX

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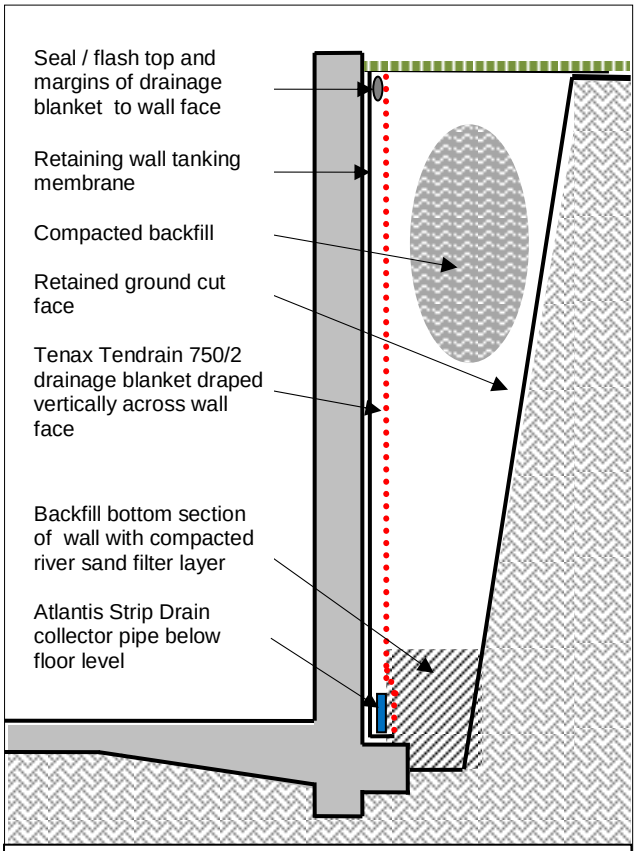
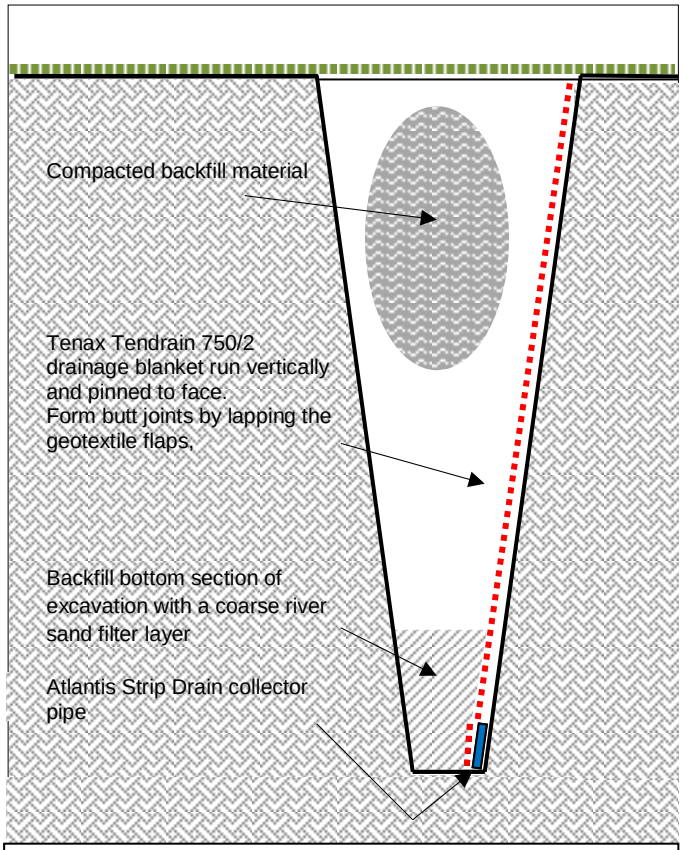
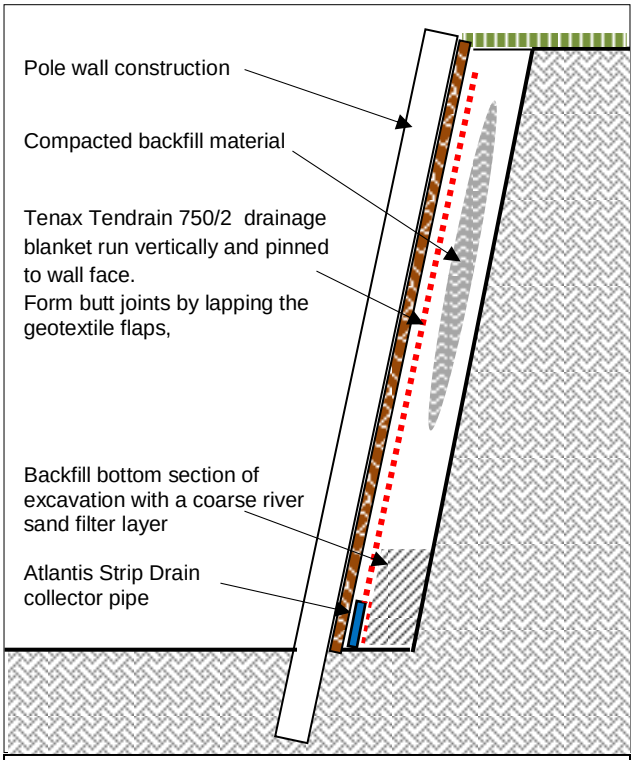
TENAX TENDRAIN 750/2 DRAINAGE BLANKET APPLICATIONS



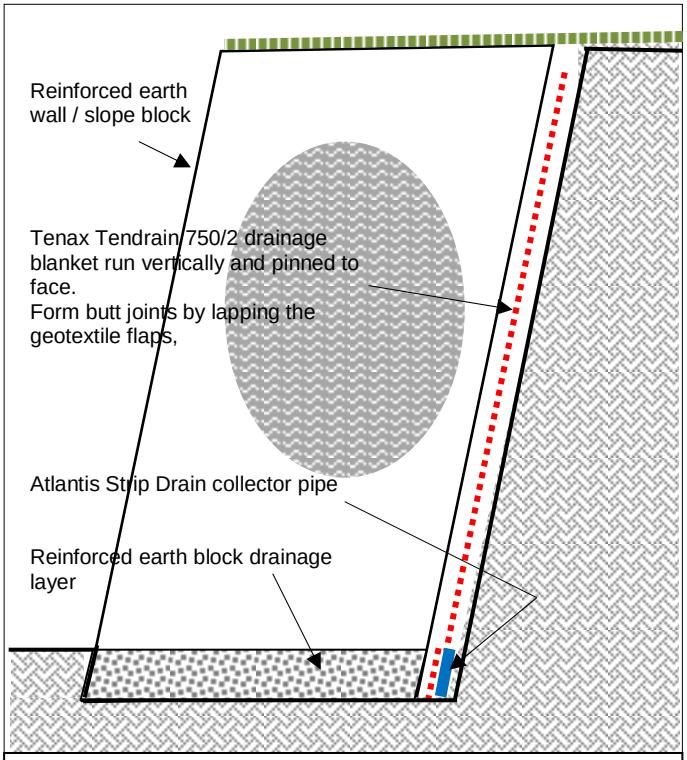
TENAX TENDRAIN 750/2 DRAINAGE BLANKET AND MEMBRANE PROTECTION SYSTEM TYPICAL CONC. RETAINING WALL ARRANGEMENT



TENAX TENDRAIN 750/2 DRAINAGE BLANKET TYPICAL CUT-OFF DRAIN ARRANGEMENT



TENAX TENDRAIN 750/2 DRAINAGE BLANKET POLE WALL ARRANGEMENT



TENAX TENDRAIN 750/2 DRAINAGE BLANKET TYPICAL REINF. EARTH WALL / SLOPE ARRANGEMENT

NOTES :
Use only Tenax Tendrain 750/2 against tanking membranes,
Make good all damaged geotextile and holes with 100mm wide self-adhesive PVC tape / duct tae patches to prevent entry of soil.
At cut edges / butt joins of the drainage blanket peel back the geotextile from the face of the core, cut back the core as required and lap the geotextile a minimum of 100mm.
As a construction aid,100mm wide self adhesive PVC / duct tape seal all vertical geotextile laps to maintain the soil tight integrity of the drainage blanket system during backfilling

Blank

TENAX GNT TRI-PLANAR DRAINAGE GEONETS
NO GEOTEXTILE ON FACES

TENAX **GNT** geonets are high profile mesh structures made by three sets of overlaid intersecting strands. The inner strands, thicker and heavier, provide high compressive resistance and transmissivity. The intersecting strands form overlaid sets of continuous deep channels which provide high flow capacity. These geonets are used in waste disposal and civil engineering projects, where a high hydraulic flow capacity is required.

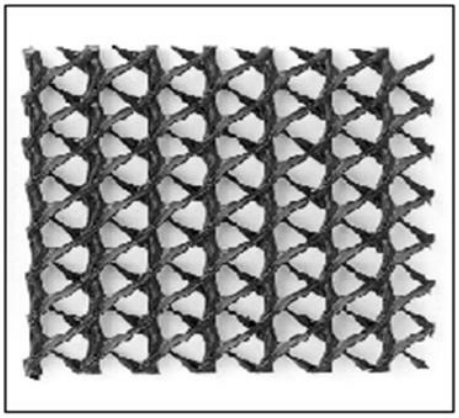
TENAX **GNT** geonets are manufactured from extrusion of High Density Polyethylene (HDPE), black in color; they are inert to chemical and biological conditions normally occurring in soil. Moreover they are treated with special additives to resist UV degradation. TENAX **GNT** geonets are available in a wide range of thicknesses and widths, so as to satisfy any design and installation need.

Typical applications

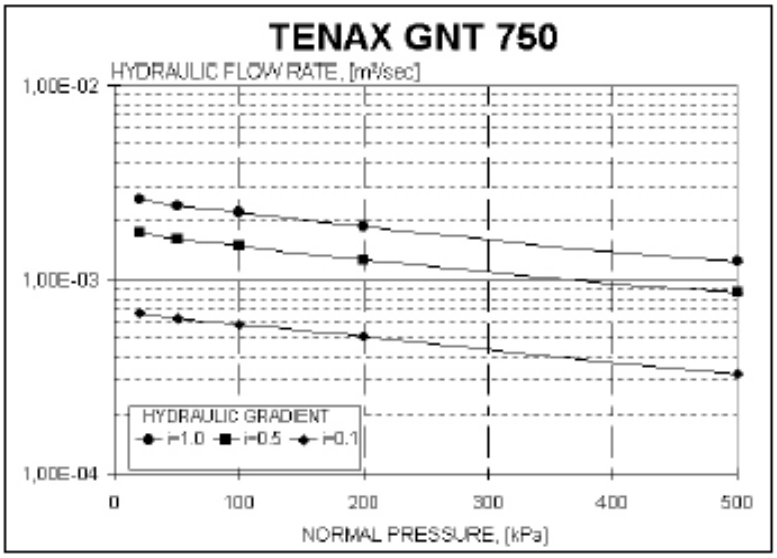
Load distribution, site leveling and mechanical protection of the geomembrane; drainage of the accidental leaks below primary; leachate and rain water collection above primary geomembrane; mechanical protection of the geomembranes when in contact with waste-materials and/or soil; drainage of liquids and gases present in the soil above and/or below the capping geomembrane.

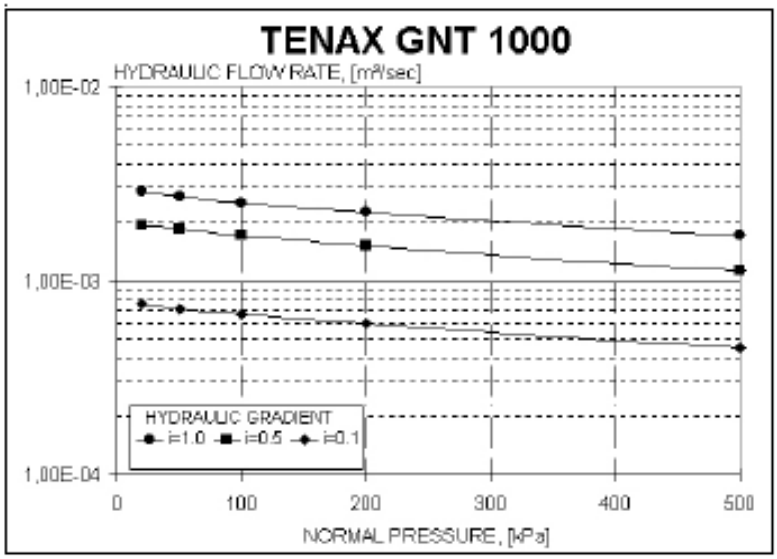
PHYSICAL CHARACTERISTICS	TEST METHOD	UNIT	GNT 750	GNT 1000	GNT 1300	NOTES
STRUCTURE			3 ribs	3 ribs	3 ribs	
POLYMER			HDPE	HDPE	HDPE	
U.V. STABILIZER			carbon black	carbon black	carbon black	
FOAMING AGENT			NO	NO	NO	
DIMENSIONAL CHARACTERISTICS	**TEST METHOD**	**UNIT**	**GNT 750**	**GNT 1000**	**GNT 1300**	**NOTES**
THICKNESS at 20 kPa	ISO 9863	mm	5.0	6.0	7.0	a
THICKNESS at 200 kPa	ISO 9863	mm	4.4	5.8	6.8	a
MASS PER UNIT AREA	ISO 9864	g/m²	750	1000	1300	a
ROLL WIDTH		m	2.05	2.05	2.05	a,d
ROLL LENGTH		m	50.0	25.0	25.0	a
ROLL DIAMETER		m	0.60	0.47	0.50	a
ROLL VOLUME		m³	0.74	0.45	0.52	a
ROLL WEIGHT		kg	77.0	51.3	66.7	a
TECHNICAL CHARACTERISTICS	**TEST METHOD**	**UNIT**	**GNT 750**	**GNT 1000**	**GNT 1300**	**NOTES**
HYDRAULIC FLOW RATE						
i=1 σv = 20 kPa	ISO 12958	m²/s	2.00E-03	2.20E-03	2.60E-03	a,b,c
i=1 σv = 100 kPa	ISO 12958	m²/s	1.90E-03	2.00E-03	2.40E-03	a,b,c
i=1 σv = 200 kPa	ISO 12958	m²/s	1.50E-03	1.80E-03	2.20E-03	a,b,c
i=1 σv = 500 kPa	ISO 12958	m²/s	1.00E-03	1.30E-03	1.80E-03	a,b,c
TENSILE STRENGTH	ISO 10319	kN/m	8	10	12	a,b
ELONGATION AT PEAK	ISO 10319	%	20	20	20	a,b

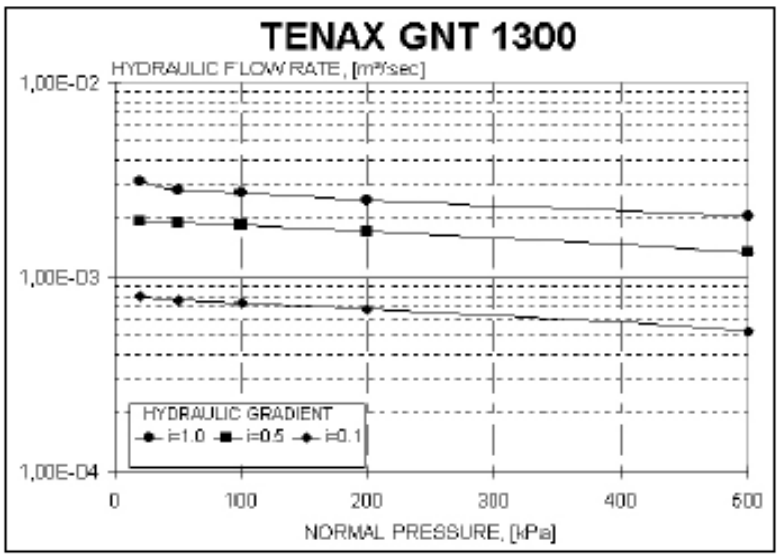
NOTES:
a) Typical values
b) Longitudinal direction
c) 2mm HDPE linear boundary condition
d) Upon request available 3.8 m wide



TENAX GNT GEONET typical hydraulic characteristics







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