

### TECHNICAL DATA SHEET

## DELTA®-DRAIN 9000 HI-X

For High Load Horizontal Drainage Applications.

#### MATERIAL

DELTA®-DRAIN 9000 HI-X is a high performance, three-dimensional, 2-layer drainage composite. It consists of a dimpled drainage core and a high-strength woven monofilament polypropylene (PP) fabric. The drainage core is made from a special co-polymer polypropylene that provides high impact and tear resistance, and is unaffected by environmental stress cracking. The woven fabric is fully bonded to the dimpled drainage core, which prevents it from being pushed into the flow channels by the load of the overburden material.

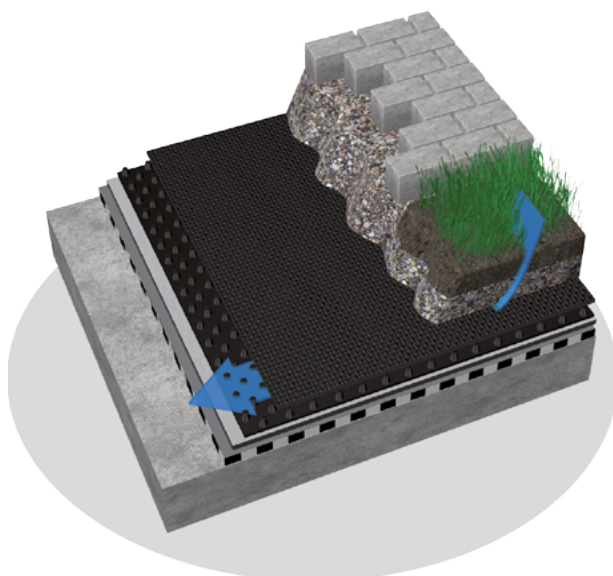
#### PROPERTIES

DELTA®-DRAIN 9000 HI-X provides a continuous path for water discharge and relieves hydrostatic pressure buildup. The woven monofilament fabric allows water to pass freely into the drainage core while withstanding abrasion during overburden material application (i.e. gravel). The high-strength monofilaments in this geotextile prevent intrusion of most common load-spreading overburden material into the drainage core to maintain its high transmissivity.

DELTA®-DRAIN 9000 HI-X is highly pressure resistant and able to withstand loads of up to 18,000 psf (862 kN/m<sup>2</sup>). The product is rot-proof.

#### APPLICATION

DELTA®-DRAIN 9000 HI-X is the ideal solution for horizontal applications like plaza deck and pavement construction, split slabs, etc., where a combination of high compressive strength and high drainage capacity is required. It will also function as protection board in a waterproofing system. The product is easily unrolled on horizontal surfaces (subgrade preparation requires grading to a minimum 2% slope). At side and end laps, the drainage core is placed tightly to the drainage core of the adjacent roll, with over-hanging geotextile overlapped. DELTA®-DRAIN 9000 HI-X can be cut with a utility knife or scissors. Available in 6' x 50' rolls, it allows for efficient coverage and fast installation.



### Technical Data

Product name	DELTA®-DRAIN 9000 HI-X	
Color	black	
Material	Drainage core:	co-polymer polypropylene
	Geotextile:	Polypropylene (woven monofilament)
Dimple height	approx. 2/5" (10 mm)	ASTM D1777-96 ASTM D5199
Compressive strength	18,000 psf (862 kN/m <sup>2</sup> )	ASTM D6364-06
Drainage core impact resistance	2.9 J mean failure energy at 5°C	ASTM D4226-09
Drainage core maximum tearing strength	MD 550 N CD 800 N	ASTM D5884-04a
Drainage core stress cracking resistance	504 hours @ 156 kPa (No cracking at test termination)	SAGEOS GD 001-2012
Geotextile grab tensile strength	365 lbs (1624 N)	ASTM D4632
Geotextile elongation	24% MD 10% CD	ASTM D4632
Geotextile trapezoidal tear	115 lbs (512N)	ASTM D4533
Geotextile CBR puncture strength	675 lbs (3004 N)	ASTM 6241
Geotextile apparent opening size (AOS)	40 sieve size (0.43 mm)	ASTM D4751
Geotextile water flow rate	145 gal/min/ft <sup>2</sup> (5907 l/min/m <sup>2</sup> )	ASTM D4491
Permittivity	2.1 sec <sup>-1</sup>	ASTM 4491
Geotextile weight (typical)	6.1 oz/yd <sup>2</sup> (206 g/m <sup>2</sup> )	ASTM D5261-92
Geotextile UV resistance	90% @ 500 h	ASTM D4355-92
Geocomposite water flow rate @ hydr. grad. 1.0	27 gal/min/ft (334 l/min/m)	ASTM D4716-99
Geocomposite water flow rate @ hydr. grad. 0.1	5.4 gal/min/ft (67 l/min/m)	ASTM D4716-99
Toxicity	non-toxic, non-polluting	
Roll dimensions	6' x 50' (1.83 x 15.25 m)	
Roll weight	70 lbs (32 kg)	
Service life expectancy	> 25 years (at pH between 4 and 9 and temperature below 77°F / 25°C). Do not expose to UV light for more than 30 days.	

DELTA® products support sustainable and energy-efficient building practices, including efforts toward achieving LEED® certification (LEED® for New Construction & Major Renovations, LEED® for Core and Shell, LEED® for Existing Buildings and LEED® for Homes).

For technical support, call our technical support team at 1-888-4DELTA4 (1-888-433-5824) extension 326, or visit [www.dorken.com](http://www.dorken.com).