BRO-ES1600-0919



J-DRAIN Engineered Drainage Systems

APPLICATIONS RETAINING WALLS LAGGING WALLS FOUNDATION WALLS BRIDGE ABUTMENTS

J-DRAIN[®] ES 1600 Series Meets AASHTO M 288 Requirements

J-DRAIN ES 1600

For over 30 years, **J**-**DRAIN** drainage composites have been successfully installed to relieve hydrostatic pressure in building construction, civil engineering, environmental and landscape applications. Eliminating the costly and time-consuming installation of drainage aggregate, **J**-**DRAIN** drainage composites provide a more efficient, cost effective way to provide sub-surface drainage. The **ES 1600** series of prefabricated drainage composites are engineered to provide superior performance to meet specific project conditions. The multi-directional flow design allows for a continuous path for water discharge. **ES 1600** is lightweight, easy to install and has drainage flow capacities that are 3-5 times that of traditional aggregate systems.

The **ES 1600's** three dimensional dimpled core is formed from a chemical resistant polypropylene polymer. By extruding each dimple to exact performance standards, the high compressive strength of the core withstands installation and in-situ earth stresses. The geotextile filter fabric is fused to the dimpled core for superior peel resistance and structural integrity. The integrated core and fabric system optimizes drainage channel consistency, minimizing soil particle intrusion for maximum flow capacity, allowing water to freely enter the drainage channel. The **ES 1600** series is engineered for high flow requirements with heavy soil pressure conditions in vertical applications, available with nonwoven or woven geotextile filter fabrics meeting AASHTO M288-06 specifications for survivability.

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J.DRAIN[®] ES 1600 Series

Physical Properties

Property	Test Method	UOM	ES 1600	ES 1640	ES 1660	ES 1680	ES 1670 W	ES 1690 W
FABRIC								
Material			Non woven PP	Non woven PP	Non woven PP	Non woven PP	Woven PP	Woven PP
AASHTO M 288	Survivability		-	Class 3	Class 2	Class 1	Class 3	Class 2/3
Grab Tensile Strength	ASTM D 4632	lbs	100	120	160	205	365 x 200	370 x 250
		N	450	534	712	912	1624 x 890	1647 x 1113
Apparent Opening Size	ASTM D 4751	U.S. Sieve	70	70	70	80	40	70
		mm	0.212	0.212	0.212	0.18	0.425	0.212
Flow Rate	ASTM D 4491	gal/min/ft ²	140	135	110	95	145	18
		l/min/m ²	5704	5500	4481	3870	5907	733
Puncture Strength	ASTM D 6241	lbs	250	310	410	500	675	950
		N	1110	1380	1825	2224	3004	4228
Permittivity	ASTM D 4491	sec ⁻¹	2.0	1.7	1.5	1.4	0.5	0.28
Grab Tensile Elongation	ASTM D 4632	%	60	50	50	50	15	15
UV Resistance	ASTM D 4355	% (@ 500 hrs)	70	70	70	70	90	90
CORE								
Thickness	ASTM D 1777	inch	0.4	0.4	0.4	0.4	0.4	0.4
		mm	10.16	10.16	10.16	10.16	10.16	10.16
Compression	ASTM D 1621	psf	16,000	16,000	16,000	16,000	16,000	16,000
		kNm ²	766	766	766	766	766	766
Flow Rate Hydraulic Gradient = 1 @3,600 psf	ASTM D 4716	gal/min/ft	21	21	21	21	21	21
		l/min/m	261	261	261	261	261	261

Roll Size: 4, 6, or 8 foot width x 50 foot length. Specialty roll widths and fabrics require additional lead time and minimum quantity orders.

The information contained herein is believed by JDR Enterprises, Inc. to be accurate and is offered solely for the customer's consideration, investigation and verification. Determination of suitability for use is the responsibility of the user. JDR's Limitations, Limited Warranty, & Disclaimer along with Standard Terms & Conditions apply. See www.j-drain.com for more info. <u>Limitations</u>: J-DRain is resistant to chemicals in normal soil environments. However, some reagents may affect the performance of J-DRain. A JDR representative should be climited to intervine intervine information in outraviolet statism. Sumadard Terms & Conditions apply. See www.j-drain.com for more info. <u>Limitations</u>: J-DRain is resistant to chemicals in normal soil environments. However, some reagents may affect the performance of J-DRain. A JDR representative on the suitability of use of J-DRain in unusual soil environments. J-DRain is unusual soil environments. J-DRain should be climited to accurate on ultraviolet sumlight, J-DRain should be climited to accurate and the suitability of use of J-DRain at the time of printing. JDR reserves the right to make changes due to manufacturing improvements and engineering at any time. All physical properties are envinonmal.

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