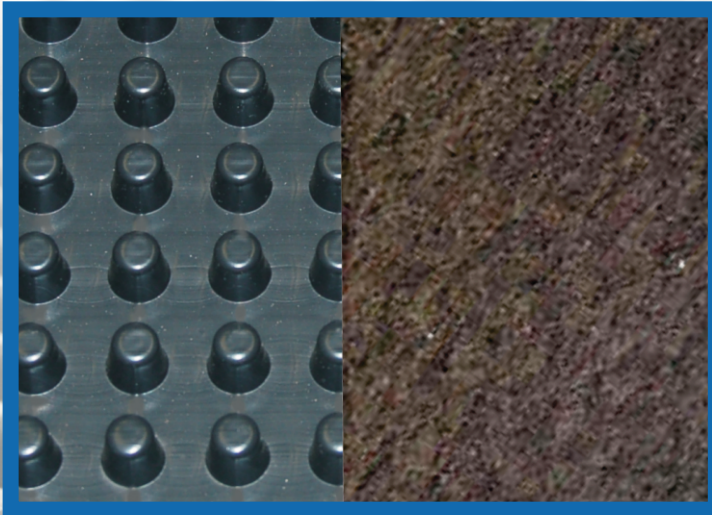




# J·DRAIN<sup>®</sup>

Engineered Drainage Systems



## APPLICATIONS

RETAINING WALLS

LAGGING WALLS

FOUNDATION WALLS

BRIDGE ABUTMENTS

## J·DRAIN<sup>®</sup> ES 1100 Series

### Meets AASHTO M 288 Requirements

### J·DRAIN ES 1100

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 1100 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 1100 is lightweight, easy to install and has drainage flow capacities that are 3-5 times that of traditional aggregate systems.

The ES 1100'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 1100 series is engineered for intermediate flow requirements with moderate 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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## ES 1100 Series

### Physical Properties

Property	Test Method	UOM	ES 1130 ES 1130 B*	ES 1140	ES 1160	ES 1180	ES 1160 W	ES 1140 T
<b>FABRIC</b>								
Material			Non woven PP	Non woven PP	Non woven PP	Non woven PP	Woven PP	Spunbond PP
AASHTO M 288	Survivability		-	Class 3	Class 2	Class 1	Class 3	Class 3
Grab Tensile Strength	ASTM D 4632	lbs	100	120	160	205	365 x 200	145
		N	445	534	712	912	1624 x 890	644
Apparent Opening Size	ASTM D 4751	U.S. Sieve	70	70	70	80	40	60
		mm	0.212	0.212	0.212	0.18	0.425	0.25
Flow Rate	ASTM D 4491	gal/min/ft <sup>2</sup>	140	135	110	95	145	60
		l/min/m <sup>2</sup>	5704	5500	4481	3870	5907	2460
Puncture Strength	ASTM D 6241	lbs	250	310	410	500	675	276
		N	1113	1380	1825	2224	3004	1228
Permittivity	ASTM D 4491	sec <sup>-1</sup>	2.0	1.7	1.5	1.4	2.1	0.8
Grab Tensile Elongation	ASTM D 4632	%	50	50	50	50	24MD x 10CD	50
UV Resistance	ASTM D 4355	% (@ 500 hrs)	70	70	80	70	90	80
<b>CORE</b>								
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	11,000	11,000	11,000	11,000	11,000	11,000
		kNm <sup>2</sup>	527	527	527	527	527	527
Flow Rate Hydraulic Gradient = 1 @3,600 psf	ASTM D 4716	gal/min/ft	18	18	18	18	18	18
		l/min/m	223	223	223	223	223	223
<b>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.</b> *ES 1130B is identical to ES 1130 with the addition of a protection sheet bonded to the back side of the sheet available in 4' widths only.								

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](http://www.j-drain.com) for more info. **Limitations:** 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 contacted for further information to determine the suitability of use of J-DRain in unusual soil environments. J-DRain should be limited to its exposure to ultra-violet sunlight. J-DRain should be backfilled or covered within seven days of installation. **Disclaimer:** All information, drawings and specifications are based on the latest published information 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 minimum average roll values (MARV). Standard variations of 10% in mechanical properties and 15% in hydraulic properties are normal.

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