

Penteco BGM ES Series

- ❖ **Containment**
- ❖ **Erosion Control**
- ❖ **Leak Detection**
- ❖ **Water Proofing**
- ❖ **Protection**

Penteco's ES series are elastomeric modified bituminous geomembranes. They are manufactured by impregnating a polyester geotextile fiberglass layer with an elastomeric compound. The geotextile provides the mechanical resistance and a high puncture resistance. The elastomeric bitumen provides the waterproofing properties of the geomembrane and ensures its longevity.

The installation of this geomembrane can be allowed in low temperatures down to -40°C, ideal for Canadian winters. The high friction angle of bitumen of 34 degrees for example provides a strong adherence in steep slopes, allowing a high volume of material placement directly on the geomembrane.

Bituminous Geomembrane			ES Series				
Property	Test Method	Unit	BGM-ES1	BGM-ES2	BGM-ES3	BGM-ES4	
Thickness	Average	mil (mm)	137.8 (3.5)	157.5 (4.0)	189 (4.8)	220.5 (5.6)	
	Minimum	mil (mm)	122 (3.10)	141.7 (3.6)	165.4 (4.2)	189 (4.8)	
Surface Mass	Average	oz/yd ² (kg/m ²)	123.9 (4.2)	143 (4.85)	171.1 (5.8)	188.8 (6.4)	
	Minimum	oz/yd ² (kg/m ²)	109.1 (3.7)	126.8 (4.3)	147.5 (5.0)	174 (5.9)	
Tear Resistance (average)	Longitudinal Direction	lbf (N)	169 (750)	185 (825)	214 (950)	275 (1225)	
	Cross Direction	lbf (N)	112 (500)	157 (700)	191 (850)	230 (1025)	
Strength (average)	Longitudinal Direction	lbf/in (KN/m)	126 (22)	154 (27)	188 (33)	200 (35)	
	Cross Direction	lbf/in (KN/m)	103 (18)	137 (24)	166 (29)	171 (30)	
Elongation (average)	Longitudinal Direction	%	60	60	60	60	
	Cross Direction	%	60	60	60	60	
Flexibility at Low Temperature (average)	Longitudinal Direction	°F (°C)	- 4 (-20)	- 4 (-20)	- 4 (-20)	- 4 (-20)	
	Cross Direction	°F (°C)	- 4 (-20)	- 4 (-20)	- 4 (-20)	- 4 (-20)	
Puncture Resistance	Average	ASTM D-4833	lbf (N)	101 (450)	119 (530)	128 (570)	146 (650)
Water Permeability	Average	ASTM E-96	m/s	7 x 10 ⁻¹⁴	6 x 10 ⁻¹⁴	6 x 10 ⁻¹⁴	6 x 10 ⁻¹⁴
Gas Permeability	Average	ASTM D-1434-82	m ³ /(m ² .d.atm)	3 x 10 ⁻⁴	2 x 10 ⁻⁴	2 x 10 ⁻⁴	2 x 10 ⁻⁴
Dimensions							
Typical Roll Size		Measured	ft (m)	16.7 x 320 (5.10 x 100)	16.7 x 262 (5.10 x 80)	16.7 x 213 (5.10 x 65)	16.7 x 180 (5.10 x 55)
Area		Calculated	ft ² (m ²)	5344 (510)	4376 (408)	3557 (331)	3006 (280)

Notes:

- (1) Roll Widths/ Lengths vary based on manufacturer.
- (2) All roll widths/lengths have a tolerance of ±1 %.
- (3) Custom roll lengths can be ordered. Transportation cost might be affected.
- (4) Penteco is a distributor for this product.
- (5) Manufacturer's data sheet provided at time of purchase.

DISCLAIMER: The data above represents the manufacturer's laboratory testing of their product. It is the user's responsibility to determine the suitability of the products. Penteco is a distributor for these products through its manufacturing partners. Penteco will provide the manufacturers data sheet at the time of sale. Penteco and manufacturing partners assume no liability, nor can they provide any warranty, without having additional information regarding the use of the products. The same goes for any infringement on patents - no permission can be granted without further disclosure.

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