

## Product Information Bulletin

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### GeoSpec® Lightweight Fill Material Product Data per ASTM D6817

GeoSpec® lightweight fill material is expanded polystyrene (EPS) geofoam used in ground fill applications where a lightweight fill material is required to reduce stresses on underlying or adjoining soils/structures. EPS geofoam has been used in projects involving roads, bridge approach fills, embankments, levees, berms, foundations, landscaping, etc., worldwide for over 50 years.

GeoSpec fill material can be designed to support high compressive loads, but has a density less than 1% of traditional earth materials. It can be designed to meet a wide range of geotechnical engineering specifications with a typical density range of 11 kg/m<sup>3</sup> (0.7 pcf) to 40 kg/m<sup>3</sup> (2.5 pcf) providing a range of compressive resistance properties. The table below provides **GeoSpec** fill material type designations and material properties as per ASTM D6817, **Standard Specification for Rigid Cellular Polystyrene Geofoam**.

Material Property	Test Method	Units	D6817 GeoSpec Type Designations <sup>1</sup>					
			EPS12	EPS15	EPS19	EPS22	EPS29	EPS39
<b>Product Density,</b> <i>Minimum</i>	ASTM C303	kg/m <sup>3</sup> (pcf)	11.2 (0.70)	14.4 (0.90)	18.4 (1.15)	21.6 (1.35)	28.8 (1.80)	38.4 (2.40)
<b>Compressive Resistance</b> <sup>2</sup> <i>Minimum @ 1% Strain</i>	ASTM D1621	kPa (psi)	15 (2.2)	25 (3.6)	40 (5.8)	50 (7.3)	75 (10.9)	103 (15.0)
<b>Compressive Modulus</b> <i>Minimum</i>		kPa (psi)	1,517 (220)	2,483 (360)	4,000 (580)	5,034 (730)	7,517 (1,090)	10,345 (1,500)
<b>Flexural Strength</b> <i>Minimum</i>	ASTM C203	kPa (psi)	69 (10)	172 (25)	207 (30)	240 (35)	345 (50)	414 (60)
<b>Limiting Oxygen Index</b> <i>Minimum</i>	ASTM D2863	%	24	24	24	24	24	24
<b>Additional Compressive Resistance Properties<sup>3</sup></b>								
<b>Compressive Resistance</b> <i>Minimum @ 5% Strain</i>	ASTM D1621	kPa (psi)	35 (5.1)	55 (8.0)	90 (13.1)	115 (16.7)	170 (25.0)	241 (35.0)
<b>Compressive Resistance</b> <i>Minimum @ 10% Strain</i>		kPa (psi)	40 (5.8)	70 (10.2)	110 (16.0)	135 (19.6)	200 (29.0)	276 (40.0)

1. The material properties for GeoSpec lightweight fill material are third party certified by Intertek.
2. Compressive resistance at 1% strain is within the elastic limit for the GeoSpec types in the above table and is accepted as the design compressive resistance to limit long-term deformation under structural load.
3. Compressive resistance at 5% and 10% strain in the above table are provided for applications where the intended end-use requires long-term deformation under structural load – i.e., a compressible product.