

Product Information Bulletin 215

GeoSpec Type EPS22 Material Properties

Product Information Bulletin

GeoSpec® EPS 22 Material Properties per MTO Specifications

Plasti-Fab® GeoSpec® fill material is a rigid closed cell foam plastic manufactured from moulded expanded polystyrene (EPS) block. Traditional earth fill materials are generally more than 50 to 100 times heavier than GeoSpec fill material and can cause settlement or instability of underlying soils. GeoSpec fill material, in either block or board form, is used in ground fill applications where a lightweight fill material is required to reduce stresses on underlying or adjoining soils/structures.

The table below provides GeoSpec EPS 22 block material properties as specified by **Ministry of Transportation Ontario (MTO)** for **Rigid Expanded Polystyrene Embankment Fill**. The minimum compressive resistance @ 5% deformation is consistent with requirements for GeoSpec EPS 22 block per Plasti-Fab Product Information Bulletin No. 218.

Material Property	Test Method	Units	Values
Thermal Resistance <i>Minimum RSI per 25 mm</i>	ASTM C518	$\frac{\text{m}^2 \cdot ^\circ\text{C}}{\text{W}}$	0.70
Compressive Resistance¹ <i>Minimum @ 5% Deformation</i>	ASTM D1621	kPa	115
Flexural Strength <i>Minimum</i>	ASTM C203	kPa	240
Water Vapour Permeance <i>Maximum</i>	ASTM E96	$\frac{\text{ng}}{\text{Pa} \cdot \text{s} \cdot \text{m}^2}$	200
Water Absorption² <i>Maximum</i>	ASTM D2842	% By volume	4.0
Dimensional Stability <i>Maximum, 7 Days @ 70 ± 2 °C</i>	ASTM D2126	% Linear Change	1.5
Limiting Oxygen Index <i>Minimum</i>	ASTM D2863	%	24

1. The primary material property for engineering design of EPS geof foam used in lightweight fill material applications is compressive resistance.
2. The water absorption laboratory test method involves complete submersion under a head of water for 96 hours. The water absorption value above is applicable to specific end-use design requirements only to the extent that the end-use conditions are similar to test method requirements.