



TECHNICAL NOTE

TECHNICAL NOTE #104: ASTM C578 & ASTM D6817

A **Comparison Table** of some primary physical properties of **Cellofoam®** Expanded Polystyrene (EPS) in accordance with **ASTM C578 - Standard Specification for Rigid Cellular Polystyrene Thermal Insulation** and **Cellofoam®** Geofoam EPS in accordance with **ATSM D6817 - Standard Specification for Rigid Cellular Polystyrene Geofoam**.

| Cellofoam® EPS | | | ASTM C578 TYPE (INSULATION) | | | | | | | ASTM D6817 TYPE (GEOFOAM) | | | | | | |
|---|-------------------------|---|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Physical Property | Test Method | Units | XI | I | VIII | II | IX | XIV | XV | EPS12 | EPS15 | EPS19 | EPS22 | EPS29 | EPS39 | EPS46 |
| Density, Min. ^{1,2} | ASTM C303 or ASTM D1622 | lb/ft ³ (kg/m ³) | 0.70 (12) | 0.90 (15) | 1.15 (18) | 1.35 (22) | 1.80 (29) | 2.40 (38) | 3.00 (48) | 0.70 (12) | 0.90 (15) | 1.15 (18) | 1.35 (22) | 1.80 (29) | 2.40 (38) | 2.85 (46) |
| Flexural Strength, Min. ^{1,2} | ASTM C203 | psi (kPa) | 10.0 (70) | 25.0 (173) | 30.0 (208) | 35.0 (240) | 50.0 (345) | 60.0 (414) | 75.0 (517) | 10.0 (70) | 25.0 (173) | 30.0 (208) | 35.0 (240) | 50.0 (345) | 60.0 (414) | 75.0 (517) |
| Compressive Resistance @1% Strain, Min. ² | ASTM D1621 | psi (kPa) | | | | | | | | 2.2 (15) | 3.6 (25) | 5.8 (40) | 7.3 (50) | 10.9 (75) | 15.0 (103) | 18.6 (128) |
| Compressive Resistance @10% Strain, Min. ^{1,2,3} | ASTM D1621 or ASTM C165 | psi (kPa) | 5.0 (35) | 10.0 (69) | 13.0 (90) | 15.0 (104) | 25.0 (173) | 40.0 (276) | 60.0 (414) | 5.8 (40) | 10.2 (70) | 16.0 (110) | 19.6 (135) | 29.0 (200) | 40.0 (276) | 50.0 (345) |
| R-Value: Thermal Resistance / Inch, Min. ^{1,4} | ASTM C518 | °Fft ² /h/Btu (°Cm ² /W) | 3.1 (0.55) | 3.6 (0.63) | 3.8 (0.67) | 4.0 (0.70) | 4.2 (0.74) | 4.2 (0.74) | 4.3 (0.76) | | | | | | | |
| Oxygen Index, Min. ^{1,2} | ASTM D2863 | Volume % | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| Water Absorption By Total Immersion, Max. ¹ | ASTM C272 | Volume % | 4.0 | 4.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | | | | | | | |

1. See ASTM C578 specification for more information

2. See ASTM D6817 specification for more information

3. Compressive properties shown for Geofoam EPS are for comparison only. CAUTION: Compression resistance @ 10% strain may be beyond the elastic limit for Geofoam EPS.

4. At mean temperature of 75 ± 2° F (24 ± 1° C)

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