

Bulk Insulation

FIRE-RETARDANT EPS FLAT SHEETS AND BOARDS (FRCEL / LITECEL)

PRODUCT DESCRIPTION

Technopol's bulk insulation is fire-retardant expanded polystyrene (FRCEL / LiteCel), hot-wire cut to flat sheets and boards. It is supplied in eleven grade codes covering six nominal densities - 12, 15, 16, 20, 24 and 30 kg/m³ - plus a 27 kg/m³ cornice grade. Density buys two things at once: a lower thermal conductivity and a higher compressive strength. Pick the grade from the load, then set the thickness from the thermal target, because $R = \text{thickness} / \lambda$.

BULK INSULATION PROPERTIES

PROPERTY	VALUE
Material	Fire-retardant expanded polystyrene (FRCEL / LiteCel), rigid closed-cell board, hot-wire cut to size. All sheeting grades are supplied fire-retardant.
Nominal density	12 / 15 / 16 / 20 / 24 / 30 kg/m ³ . Minimum density = 0.9 x nominal: 10.8 / 13.5 / 14.4 / 18.0 / 21.6 / 27.0 kg/m ³
Thermal conductivity, lambda @10 C (max)	30DV 0.033 · 24DV 0.034 · 20DV 0.035 · 16DV 0.038 · 15SD 0.040 · 12SD 0.045 W/m.K
Compressive stress @10% strain (min)	30DV ≥ 200 · 24DV ≥ 160 · 20DV ≥ 110 · 16DV ≥ 80 · 15SD ≥ 65 · 12SD ≥ 60 kPa. This is a short-term crush figure, not a working stress.
Safe working load @1% strain (min) — the sustained-load design limit	30DV ≥ 100 · 24DV ≥ 70 · 20DV ≥ 45 · 16DV ≥ 21 · 15SD ≥ 17 · 12SD ≥ 15 kPa. Design every sustained load against this line.
Board thermal resistance	$R = \text{thickness} / \lambda$. 50 mm 20DV = 1.43 · 100 mm 20DV = 2.86 · 100 mm 30DV = 3.03 · 100 mm 12SD = 2.22 m ² .K/W.



Summary only — 13 further properties are given in the Bulk Insulation datasheet.

APPLICATIONS AND SCOPE

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- Cavity-wall insulation — flat board against the inner leaf with a 25 mm clear air gap retained, built in as the outer leaf rises
- Under-slab and under-screed insulation — a load-rated grade beneath the surface bed, with a vapour barrier to both faces
- Warm-roof insulation — a continuous board layer above the deck and below the waterproofing
- Ceiling and roof thermal insulation — over purlins, over trusses or on the ceiling plane, on continuous support

WHERE NOT TO USE IT

- Against, or within the code clearance of, flues, chimneys, geyser vents, recessed downlights, hot ductwork or hot pipes
- As a fire division, or anywhere the element must carry a fire-resistance rating in minutes (REI / E-I-R)
- Left exposed as a finished surface, in a ceiling void used as a return-air plenum, or in a loft that will be walked on or used for storage
- Under sustained load above the grade's safe working load at 1% strain (15-100 kPa)