

Structural EPS Void Formers & Civil Geofoam

Cut-to-shape structural EPS blocks — lightweight slab void formers and load-bearing civil geofoam fill



Overview

Cut-to-shape expanded-polystyrene blocks used structurally in civil and building work: as lightweight void formers cast into concrete slabs to cut dead load and concrete volume while the slab keeps its structural depth, as geofoam fill for embankments and over buried services, as reusable slip-wrapped pit and valve-chamber fillers, and as buoyancy, raft-insulation and vibration-isolation blocks. Supplied in graded densities (12–30 kg/m³, grades 12SD–30DV) engineered to a required compressive stress and shaped to per-project cut schedules. Sold to consulting engineers and civil contractors — and already delivered on engineer-stamped structural projects.

Applications

- Slab void formers — biaxial RC slabs and ribbed / TASS thermally-broken rib slabs, cut to per-shape schedules
- Civil geofoam fill — lightweight embankment fill, fill over buried services and backfill behind retaining walls on settlement-sensitive ground
- Reusable void / chamber fillers — pump-station valve chambers, pits and blockouts (slip-wrapped multi-layer sets stripped and re-used)
- Buoyancy blocks — floating structures such as wave-breaker buoyancy cylinders
- Raft-foundation insulation and under-slab thermal break
- Vibration isolation — machine-base surrounds and anchor-pocket void formers
- Under-floor-heating base — routed with pipe channels
- Sacrificial or reusable concrete beam / column moulds

Benefits

- Cuts slab dead load and concrete volume while the section keeps its full structural depth
- Graded densities engineered to a specified compressive stress, selected on stress at 1% and 10% strain to limit creep under construction and service load
- Cut to per-project shape schedules (FT/RF void-former and valve-chamber layer sets)
- Ultra-lightweight — placed by hand, speeding installation and reducing crane/formwork demand
- Reusable when slip-wrapped, saving material on repetitive chamber and blockout work
- Track record on engineer-stamped structural quantities (Zutari-designed projects)

Specifications

Grades	12SD – 30DV (six graded densities)
Nominal density	12, 15, 16, 20, 24, 30 kg/m ³
Thermal conductivity (λ, max)	0.045 (12 kg/m ³) to 0.033 (30 kg/m ³) W/m-K
Compressive stress @10% strain (min)	60 – 200 kPa by grade
Safe working stress @1% strain (min)	15 – 100 kPa by grade
Cross-breaking strength (min)	80 – 250 kPa by grade
Dimensional stability	≤1% (7 days @ 80°C)
Service temperature	Stable to 80°C long-term, 100°C short-term
Water-vapour resistivity	125 – 238 MN-s/g
Standards	EN 13163 / ASTM C578 (grades map to C578 EPS types)

Load / performance

Grade	Density (kg/m ³)	Safe working @1% strain (kPa)	Comp. stress @10% (kPa)	λ (W/m-K)
-------	------------------------------	-------------------------------	-------------------------	-----------

16DV / SD	16	21	80	0.038
20DV	20	45	110	0.035
24DV / HD	24	70	160	0.034
30DV / EHD	30	100	200	0.033

Fire & compliance: EPS is combustible; for fire-exposed uses, fire-retarded FRCEl grades classified B-s1,d0 — a Euroclass reaction-to-fire rating, not a fire-resistance (integrity/insulation) rating — are specified, while bare structural void formers are typically fully encased in concrete. Blocks are manufactured to EN 13163 / ASTM C578; civil design references (NCHRP, SAPEM Ch.10) are on file.

Request a quote — info@technopol.co.za · +27 11 363 2780 · technopol.co.za