

Technoblock — Engineering Specification & Technical Data Sheet

Technoblock is Technopol's moulded flame-retardant EPS permanent-shuttering block for rib-and-block suspended concrete floors. Blocks are laid between pre-cast concrete lintels / ribs in place of cement "ash" blocks and the structural topping is cast over them, leaving the EPS in the slab as lightweight void fill, thermal insulation and acoustic damping. The block itself is **non-structural** — rib spacing, topping thickness, reinforcement and allowable spans are designed by the project structural engineer.

Product & dimensional data

Product	Technoblock — moulded flame-retardant (FR) EPS permanent-shuttering block for rib-and-block (beam-and-block) suspended concrete slabs
Structural role	Non-structural. Blocks replace cement "ash" blocks between pre-cast ribs / lintels; the concrete ribs and structural topping carry all load
In-service function	Lightweight void fill, thermal insulation and acoustic damping cast permanently into the slab
Types	#120 (solid) and #190 (3-core) — see range table below
Span module	500 mm block face between ribs; 660 mm rib / lintel centres (typical detail)
Moulded features	Top face safe to walk on during installation; faces moulded to fit tight against lintels; moulded electrical passage; plastering grooves on the soffit
Handling	Far lighter than cement ash blocks — placed by hand, faster installation, less labour
Material	Flame-retardant (FR) EPS; reaction-to-fire B-s1,d0 to SANS 53501-1 (see page 2)
Also supplied	Engineer-specified cut EPS void formers (biaxial slabs, TASS rib slabs, chamber fillers) and cut slab blocks in graded densities 12SD–30DV

Moulded range

Property	#120 Technoblock	#190 Technoblock
Overall size (L × W × H)	550 × 320 × 120 mm	550 × 320 × 190 mm
Form	Solid moulded block	3 longitudinal cores (nominal 80 mm) — reinforcing rods pass through
Typical use	Balconies; grounded / low-bearing slabs with no constant load	Double-storey and constant-load slabs
End caps	—	Yes — close the cores at slab edges (6 supplied free per 5 blocks)
Stacking extenders	—	1230 mm long, one covers 4 blocks; 60 / 80 / 90 / 175 / 260 mm thick
Packaging	30 per bundle (1630 × 730 × 550 mm)	30 per bundle (1670 × 780 × 550 mm)

Published catalogue dimensions. The current factory drawing shows a 315 mm plan width for the #190 — confirm the as-moulded dimension with Technopol before detailing tight interfaces.

Typical one-way slab detail — #190 block

Slab build-up	190 mm block + 65 mm concrete topping with REF 193 mesh = 255 mm structural depth
Rib module	160 mm wide pre-cast rib / lintel at 660 mm centres ; 500 mm block soffit face between ribs
Rib reinforcement	2 × Y12 bars per rib (typical); lipped channel / lintel as per engineer's specification
Edge bearing	Block ends bear on wall sides at the slab perimeter
Coverage (indicative)	≈ 4.8 blocks per m ² of slab — geometric value from the 660 mm module; confirm with Technopol

Values from Technopol's dimensioned typical detail. This is a typical arrangement, not a design chart: no span / load tables are published for Technoblocks, and all structural design is by the project engineer.

Design guidance, model specification & QA

Design basis

- The block is **permanent shuttering only** — concrete ribs and topping carry all load; spans, topping and reinforcement per the project structural engineer
- #120 (solid)**: balconies and grounded / low-bearing areas with no constant weight on top
- #190 (3-core)**: double-storey and constant-load slabs; reinforcing rods pass through the cores; fit **end caps** at slab edges so concrete does not run into the cores
- Deeper slabs: stack **extenders** (60–260 mm) on the #190 to deepen the void without extra concrete
- Propping, back-propping and casting rates: per the slab engineer / rib supplier — no generic rules are published
- Lighter than ash-block construction — less load on foundations and walls, less concrete in the slab

Fire

- Moulded from FR EPS; the FR-EPS grade holds a current **SANS 53501-1** reaction-to-fire classification of **B-s1,d0** (report IT 23-08-00009)
- Reaction-to-fire is **not a fire-resistance rating**: no FRxx (minutes) rating is claimed for the block; fire resistance of the finished floor is a property of the complete engineered slab
- All EPS is **combustible** — keep blocks away from open flame and hot works before casting; in the finished slab the EPS is fully encased in concrete

Handling & installation

- Placed by hand — no lifting plant; top face moulded safe to walk on during installation
- Faces moulded to fit tight against the lintels; moulded electrical passage for services; plastering grooves on the soffit

QA checklist

- Confirm block type (#120 / #190), dimensions and bundle count (30 per bundle) on delivery
- End caps fitted to all exposed cores at slab edges before casting (#190)
- Extenders (where detailed) placed and secured before the topping is cast
- Topping thickness and mesh as per the engineer's drawings

Cut void formers — grade selection

- Engineer-specified cut EPS void formers are sized on the **safe working load @1% strain** (15–100 kPa), not the 10% compressive stress, to keep creep negligible
- Cut slab blocks are graded by thickness:

Thickness	Top width × length	EPS grade
110 – 150 mm	550 × 1200 mm	20DV
160 – 180 mm	550 × 1200 mm	15SD
190 – 350 mm	550 × 1200 mm	12SD

EPS grade reference — cut void formers & slab blocks

Property	30DV / EHD	24DV / HD	20DV / SD	16DV	15SD	12SD
Nominal density (kg/m ³)	30	24	20	16	15	12
Thermal conductivity λ, max (W/m·K)	0.033	0.034	0.035	0.038	0.040	0.045
Compressive stress @10% (kPa, min)	200	160	110	80	65	60
Cross-breaking strength (kPa, min)	250	205	150	140	100	80
Safe working load @1% strain (kPa, min)	100	70	45	21	17	15

Technopol EPS physical properties. Highlighted row = safe working load @1% strain, the sustained-load design limit for structural void formers.

Model specification clause (edit to project)

"Permanent shuttering to the rib-and-block slab shall be **Technopol Technoblock** moulded flame-retardant EPS blocks, type #__ (120 solid / 190 three-core), nominally **550 × 320 × __ mm**, laid between pre-cast concrete ribs / lintels at the centres shown on the structural engineer's drawings. End caps shall be fitted to all exposed cores at slab edges [and extenders __ mm thick stacked where a deeper void is detailed]. The blocks are non-structural permanent shuttering: rib spacing, topping thickness of __ mm with __ mesh, reinforcement, propping and allowable spans shall be as designed by the project structural engineer. The FR-EPS material shall hold a current SANS 53501-1 reaction-to-fire classification of B-s1,d0; blocks shall be kept away from open flame and hot works until fully encased in concrete."

Compliance. Technoblock is moulded from flame-retardant EPS classified **B-s1,d0** to SANS 53501-1 (reaction-to-fire; combustible material, fully encased in concrete in the finished slab — not a fire-resistance rating). Technoblock is not an Agrément-certified product line: the company's Agrément certificate (2020/609) applies to a different product (LiteCore) and is not claimed here.

Block schedules, typical details & project quotes — info@technopol.co.za · (011) 363-2780/1/2 · technopol.co.za