

PANELS · ENGINEERING SPECIFICATION

Panel Doors

This specification covers a made-to-measure single-leaf insulated personnel (panel) door whose leaf is cut from a Technopol laminated EPS sandwich panel and hung in a lipped steel C-section jamb.

Verified technical data

Property	Value	Standard
Product type / build-up	Made-to-measure single-leaf pedestrian door; leaf cut from Technopol laminated EPS sandwich panel (two Chromadek steel skins bonded to a fire-retarded EPS core), hung in a lipped steel jamb	—
Steel skins	Chromadek / galvanised coated steel, 0.3–0.5 (0.5 default) mm	—
Core material	Fire-retarded expanded polystyrene (FRCel); StoneWool or PIR core on request	—
Panel cover / laminated width	1145 mm	—
Core / leaf (panel) thickness	44–50 mm	—
Jamb (frame)	Lipped steel C-section gripping the leaf edge; 44, 50, 60, 75, 100 (75 typical); supplied in 6 m lengths mm	—
Standards & certification	Fire testing: SANS 53501-1 and SANS 10177-9/-11 (EPS core). No door-specific product standard; Agrément SA 2020/609 covers the LiteCore system only, not this door	Agrément SA 2020/609

Scope

- 1.0** This specification covers the supply of a complete made-to-measure single-leaf pedestrian (personnel) door set comprising the panel leaf, lipped steel jamb and ironmongery.
- 2.0** The leaf is cut from a Technopol laminated EPS sandwich panel identical in build-up to the LiteSpan wall panel; it is not a separately engineered fire door.
- 3.0** The specification covers two install situations: the jamb clipped over the cut edge of a Technopol EPS panel wall, or fitted inside a conventional brick/masonry reveal.
- 4.0** The door is made-to-measure with no fixed size range; each unit is ordered against seven measured dimensions (A–G, all in mm).
- 5.0** This specification excludes any fire-resistance (REI/FR-minutes) rating, structural/spanning capacity, and quantified thermal, acoustic or air-tightness performance, none of which are established for this door.

Materials

- 6.0** The leaf is a laminated sandwich panel of two Chromadek / galvanised coated-steel skins bonded to a fire-retarded expanded-polystyrene (FRCel) core; the manufacturing drawing designates the leaf material as "Polystyrene".
- 7.0** Steel skins are 0.3–0.5 mm (0.5 mm default per the May 2026 door-leaf calculator; the brochure states approximately 0.4–0.5 mm).
- 8.0** The core is fire-retarded expanded polystyrene (FRCel); StoneWool or PIR cores are offered on request.
- 9.0** Laminated panel cover/width is 1145 mm; leaf faces are smooth both sides.
- 10.0** The leaf edge is framed by a lipped steel C-section jamb gripping the panel edge, available in 44, 50, 60, 75 and 100 mm sizes (75 mm typical), supplied in 6 m lengths.
- 11.0** U-channel / frame channel is 46×3 mm per the brochure and 2021 calculator, or 40/44/50/54 mm per the 2026 calculator, supplied in 6 m lengths.
- 12.0** Ironmongery comprises a lever handle on a backplate, keyed mortice/cylinder lock with keyhole, backing plates, hinges (2 per single door, 6 per double door), a seal and rivets.

Performance

13.0 Core / leaf (panel) thickness is 44–50 mm (worked example ~45–50 mm).

14.0 Typical priced configurations are: single personnel door 2000×800 mm (or 2032×830 mm on a 44 mm panel); doghouse door 1800×600 mm; double door 3000×1500 mm; and a door-with-window variant (665×665 mm window) — these are illustrative, not fixed sizes.

15.0 No thermal conductivity (λ), U-value or R-value is established or published for the ~44–50 mm door leaf; Technopol's R-value tables cover thicker roof/wall panels only and do not extend to the door.

16.0 No structural, load, racking or spanning capacity is established for the door leaf; it is not a spanning element.

17.0 Core compressive strength for the door core is not stated at any strain.

18.0 Door leaf / assembly weight is not stated (the WEIGHT field on the manufacturing drawing is blank).

19.0 Dimensional tolerances and acoustic, air-tightness and thermal-break performance of the completed opening are not quantified in any Technopol source.

Fire

20.0 The FRCel EPS core carries a reaction-to-fire classification B-s1,d0 to SANS 53501-1 (Euroclass), determined on the EPS material tested as a 60 mm sheet at $\pm 18.37 \text{ kg/m}^3$ (Ignis report 2023-08-17 Technopol, authorised 17 August 2023).

21.0 The LiteSpan panel core also carries a B1 rating to SANS 10177-11 per the LiteSpan panel brochure; a SANS 10177-9 small-scale test on FR CEL 15 DV (25 mm, 15 kg/m^3) recorded satisfactory self-extinguishing behaviour with no class letter assigned.

22.0 These are reaction-to-fire classifications of the core material only and must not be read as, or generalised into, a fire-resistance rating; EPS is combustible.

23.0 No fire-resistance (integrity/insulation, REI or FR30/FR60) test result exists for the door leaf or the completed door assembly.

24.0 The door must not be specified where a rated fire door is required unless an assembly-level fire-resistance test is obtained.

25.0 The reaction-to-fire class density basis ($\pm 18.37 \text{ kg/m}^3$, 60 mm sheet) matches neither the 15 nor the 24 kg/m^3 door-core figure, confirming the class is a core-material property rather than a door-assembly result.

Execution / installation

26.0 The lipped steel jamb is installed either clipped over the cut edge of a Technopol EPS panel wall or fitted inside a brick/masonry reveal (dimension E applies to the brick-wall opening).

27.0 Left and right jambs are supplied 50 mm longer than the leaf; the top jamb is cut to the correct length; the bottom jamb is optional (Yes/No on order).

28.0 Jambs may be supplied precut or full length, in 6 m lengths.

29.0 The handle, backplate and lock mechanism are fitted at the factory if requested (Yes/No), on the left or right as ordered.

30.0 The handle can be specified on the left or right (Option 1 / Option 2 on the manufacturing drawing).

Standards & compliance

31.0 Fire testing of the EPS core material is to SANS 53501-1 (reaction-to-fire classification, B-s1,d0) and SANS 10177-9 / SANS 10177-11 (small-scale fire properties / B1 rating); these are material-level tests on EPS sheet, not assembly fire-resistance tests.

32.0 No door-specific product standard is cited by Technopol for this door.

33.0 Agrément South Africa 2020/609 covers the LiteCore Building System only and does NOT cover this door; it must not be presented as certifying the panel door or the company generally.

34.0 Company quality certification ISO 9001:2015 is current; ISO 14001 and ISO 45001 lapsed in March 2026 and must not be cited as current.

Specifier's notes — not established in Technopol sources.

- Thermal conductivity (λ) of the door's EPS core is not established in any Technopol document for the panel door or its FRCel grade — obtain externally if required.
- U-value and R-value of the ~44–50 mm door leaf are not established/published (existing R-value tables cover thicker roof/wall panels only) — obtain externally if required.
- Compressive strength of the door core (kPa/MPa at any strain) is not established — obtain externally if required.
- Door leaf / assembly weight is not established (manufacturing-drawing WEIGHT field blank) — obtain externally if required.
- No fire-resistance rating (REI / FR30 / FR60, minutes) exists for the door leaf or completed assembly — do not assume one; obtain an assembly-level test externally if a rated door is required.
- Dimensional tolerances (leaf, jamb, opening) are not established — obtain externally if required.
- Acoustic, air-tightness and thermal-break performance of the completed opening are not established/quantified — obtain externally if required.
- Load / span / racking capacity of the leaf is not established (the door is not a spanning element) — obtain externally if required.
- Hardware detail (lock brand/model, cylinder type, hinge type/rating, seal type) is only generically described and not established — confirm with Technopol.
- Frame and hardware alloys are unconfirmed: sources describe a STEEL lipped C-section jamb and generic hinges/handle and do NOT state an aluminium edge frame or stainless-steel lever/hinges (despite the task brief suggesting so) — do not assert those alloys; confirm externally.

- UNRESOLVED CONTRADICTION — core density: the brochure and 2021 calculator specify 15 kg/m³ (wall grade) while the 1 May 2026 calculator uses 24 kg/m³ (24DV); no datasheet fixes a single definitive production grade — confirm the production grade with Technopol.
- UNRESOLVED CONTRADICTION — U-channel / frame channel size: the brochure and 2021 calculator state 46×3 mm while the 2026 calculator lists 40/44/50/54 mm — confirm with Technopol.
- Technopol's EPS is supplied in fire-retarded grades of nominally 12, 15, 16, 20, 24 and 30 kg/m³; the specific door-core grade must be confirmed for any thermal, density or duty-related assumption.

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Figures trace to Technopol technical documentation. Properties listed as "not established" are not covered by Technopol primary sources and must be obtained from a qualified source. Confirm exact figures for your specification with Technopol. Not for construction without project-specific verification.