

INSTALLATION GUIDE

LiteSpan Insulated Roof Panels

990 IBR & 990 Standing Seam · factory-laminated sandwich panels

Delivery & storage

Handling & safety

Setting out

Fixing & laps

Flashings

QA & handover



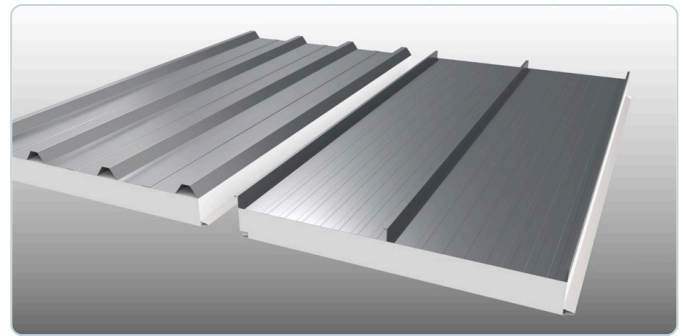
LiteSpan 990 standing-seam roof panels installed on a South African project — factory-laminated FRCel EPS core between coated-steel skins.

This guide sets out Technopol's recommended method for off-loading, handling, setting out, fixing and weathering **LiteSpan 990 IBR** and **990 Standing Seam** insulated roof panels. It complements — and never overrides — the project engineer's approved drawings and fixing schedule. Detail drawings are recreated from Technopol's own CAD details; all data is traced to Technopol brochures, detail drawings and test reports.

Contents & how to use this guide

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Read before you start. Confirm you are working to the latest approved shop drawings and fixing schedule for the project. Where this guide and the project documents differ, the **project engineer's documents govern**. Panel spans, fastener patterns and the negative (uplift) wind case must be designed and signed off by a competent engineer.



LiteSpan 990 IBR (exposed stitch-screw fixing) and 990 SS (hidden-clip, site-seamed) roof profiles.

What LiteSpan roof panels are

LiteSpan is a factory-laminated insulated sandwich panel: a rigid insulation core bonded between two coated-steel skins in one board, giving weathering, insulation and a finished soffit in a single fixing operation. Two roof profiles share a **990 mm cover**:

- **990 IBR** — wide-IBR top skin (330 mm rib module, 3 ribs/panel), fixed with exposed sealing stitch screws
- **990 SS (Standing Seam)** — 2 × 495 mm seam profile with intermediate pleats, fixed on hidden 0.8 mm galvanised clips and mechanically seamed on site — no fasteners through the weather face

Core options: FRCell fire-retarded EPS (standard), StoneWool (A1) and PIR — this guide covers the EPS IBR & SS roof panels; StoneWool DPR / Flat details are noted where they differ.

Safety & scope. Roof work is high-risk. A competent person must plan fall protection, edge protection and safe access before any panel is lifted. Nothing in this guide replaces the Occupational Health & Safety Act, the Construction Regulations, or the project's own method statement and risk assessment.

LiteSpan roof panels at a glance

990

mm cover — both roof profiles

75–150

mm core depths

2.3–4.4

installed R-value (m²K/W)

2.5–4.0

m span at 1.6 kN/m² (75–150 mm)

B-s1,d0

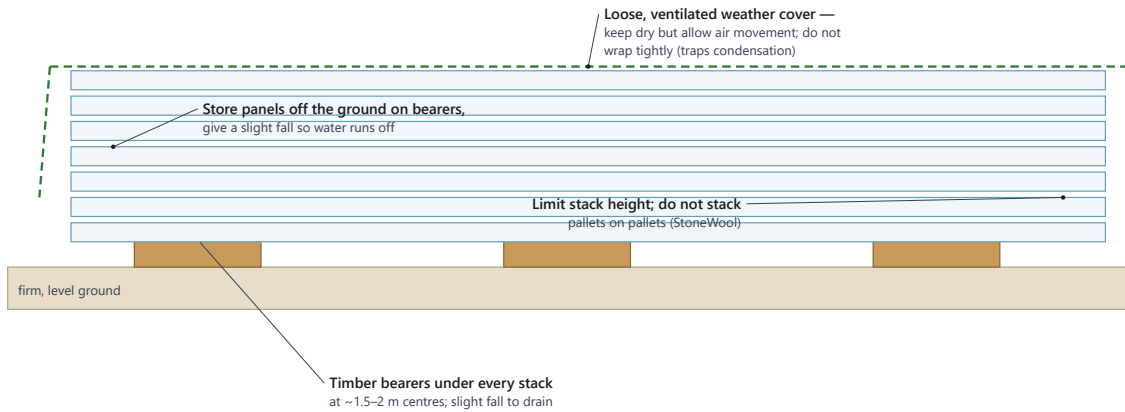
FRCell EPS reaction-to-fire (SANS 53501-1)

Values verified against Technopol 2024 brochures and detail drawings; the negative (uplift) wind case is an engineer's design item. See Section 3 for the full data set and the StoneWool DPR / Flat option.

1 • Delivery, off-loading & site storage

Delivery, off-loading & site storage

Bearers - slight fall - loose ventilated cover



Off-load with soft slings or a fork spreader, store panels clear of the ground on timber bearers with a slight fall, and keep them dry under a loose, ventilated cover. Sources: Technopol PIR TDS handling notes; StoneWool board data

Recommended site storage — panels off the ground on timber bearers, slight fall to drain, loose ventilated cover.

On delivery — inspect first

- Check the delivery against the packing list — profile, core, thickness, colour, panel lengths and accessories
- Inspect for transit damage **before off-loading**; note any damage on the delivery note and photograph it
- Confirm panel length, core thickness and colour match the approved schedule (roof-panel underside is white)
- Do not accept panels with crushed edges, delaminated skins or water inside the pack

Off-loading

- Off-load with a crane and soft slings or a fork-lift with a spreader; never lift a pack on bare forks
- Support long packs at multiple points to avoid bowing the panels
- Keep loads under control in wind — large panels act as sails
- Lower packs onto pre-laid timber bearers, not straight onto the ground

Site storage

- Store on firm, level ground clear of standing water and traffic
- Set packs on timber bearers at ~1.5–2 m centres with a **slight fall** so any water runs off the panel length
- Keep dry under a **loose, ventilated** cover — do not wrap tightly, which traps condensation and can stain skins
- Limit stack height; for StoneWool panels do not stack pallet-on-pallet
- Protect from UV, mechanical damage, mud, cement and chemical splash
- Store accessories (flashings, closures, fasteners, sealant) dry and flat, off the ground

Protective film. Where panels carry a peelable protective film, remove it as the panel is fixed — do not leave film on finished skins exposed to sun, or it becomes difficult to remove and can mark the coating.

Fire on site. The FRCEl EPS core is combustible. Keep flame, grinding sparks and hot-works away from stored and installed panels; do not use angle grinders that throw sparks onto the core (see cutting, p4).

2 · Handling, lifting & walking safety

Manual handling & lifting

- Carry panels **on edge**, not flat — a panel carried flat can crease or delaminate under its own weight
- Enough people (or mechanical lifting) for the panel length and weight — see the verified weights on p5
- Use panel lifting clamps / vacuum lifters or soft slings for roof lifts; protect skin edges from sling cuts
- Never drag one panel across another — grit scratches the coating
- Control panels in wind at all times; do not lift in high wind

Walking on the roof

- Only walk where panels are **fully fixed** and only in the pan / over a supporting purlin — never on an unsupported rib or seam
- Spread load with crawl boards or roof ladders on long spans; keep point loads off the middle of a span
- Keep the surface clear of swarf and offcuts — steel filings rust and stain the coating
- Soft, clean footwear; no dropped tools on the finished skin



Panels handled on edge and worked into position on the fixed roof plane.

Fall protection & access

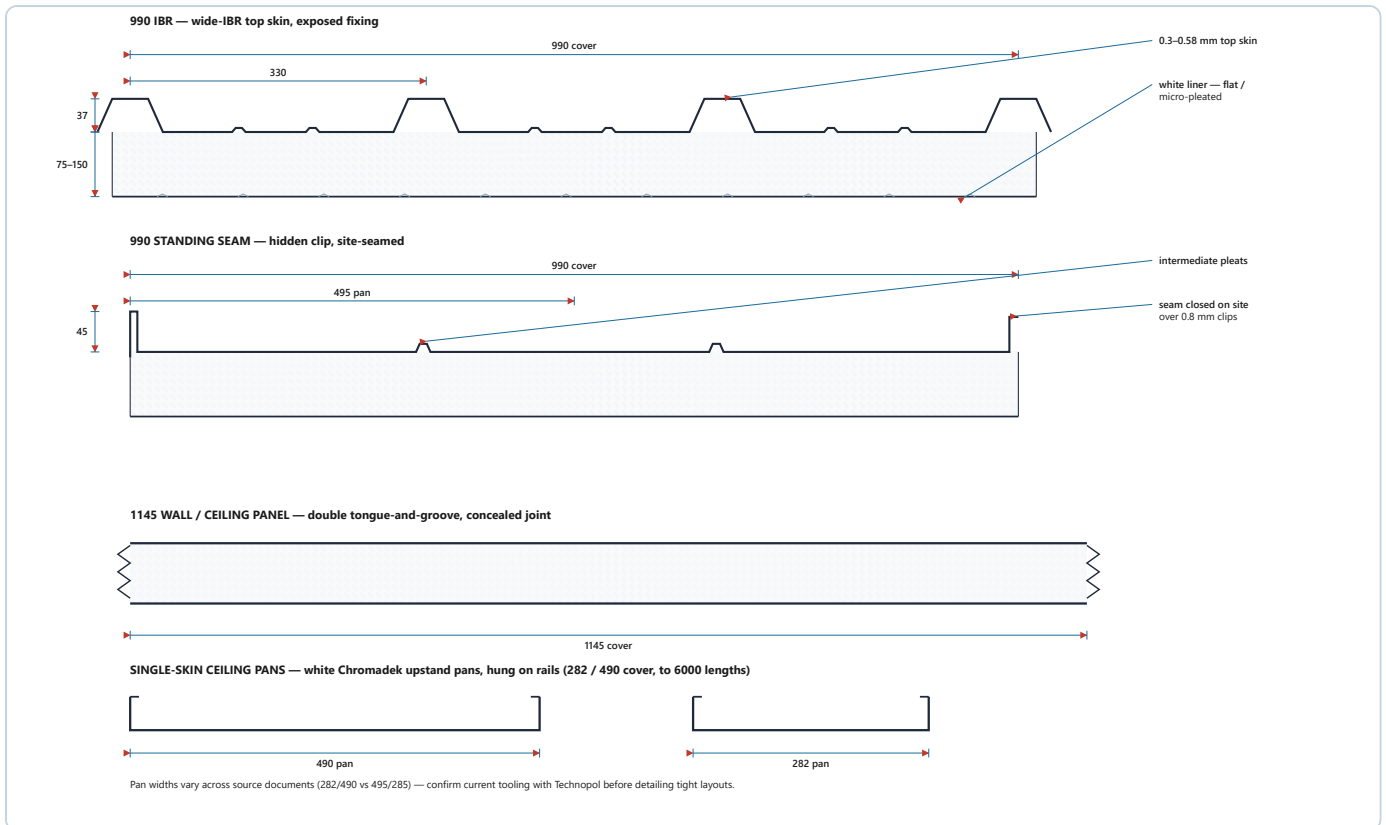
- Edge protection, safety nets or a fall-arrest system per the project method statement — in place before work starts
- Plan safe access, material landing zones and an exclusion zone below the work
- Do not use partly-fixed panels as a working platform or fall-arrest anchorage

Cutting & drilling

- Cut to length with a **fine-tooth circular saw, nibbler or jigsaw** — **not** an abrasive angle grinder (heat + sparks damage the core and burn the coating)
- Cut face-down or support the skin to avoid burr; de-burr and remove all swarf immediately
- Seal exposed core edges at cuts and openings
- Touch up cut edges / minor scratches with the matching coating repair per the colour

Walk-on limits. Insulated roof panels are a weather and insulation skin, not a general working deck. Respect the manufactured span and the engineer's fixing schedule; for StoneWool ceiling panels the walk-on basis is a 0.25 kN/m² UDL plus a 0.9 kN centre point load (BS 6399), with maximum unsupported ceiling lengths of 2.64 / 4.10 / 5.40 m for 50 / 75 / 100 mm panels.

3 · Panel family, profiles & verified data



LiteSpan profile sections — dimensioned from Technopol profile drawings and 2024 brochures.

990 IBR & 990 SS roof panels — FRCel EPS core

Property	990 IBR	990 SS
Cover width	990 mm	990 mm (2 × 495 mm seam)
Profile module	330 mm rib (3 ribs/panel), ~40 mm	495 mm seam + intermediate pleats
Fixing	Exposed sealing stitch screws	Hidden 0.8 mm galv clips, site-seamed
Steel skin	0.3–0.58 mm	0.3–0.5 mm
Core depths	75 / 100 / 125 / 150 mm	75 / 100 / 125 / 150 mm
Installed R-value (m ² K/W)	2.3 / 3.0 / 3.7 / 4.4	2.3 / 3.0 / 3.7 / 4.4
Underside	Flat / micro-pleated — white	T&G underside joint — white

Max unsupported (free) span — EPS roof panels

Core	75	100	125	150 mm
Span at 1.6 kN/m ² (m)	2.5	3.0	3.5	4.0

Current 2024 brochures (IBR & SS share one Allowable-Stress-Design chart). The negative wind (uplift) case must be checked by a competent engineer for the actual site.

Colours & facings

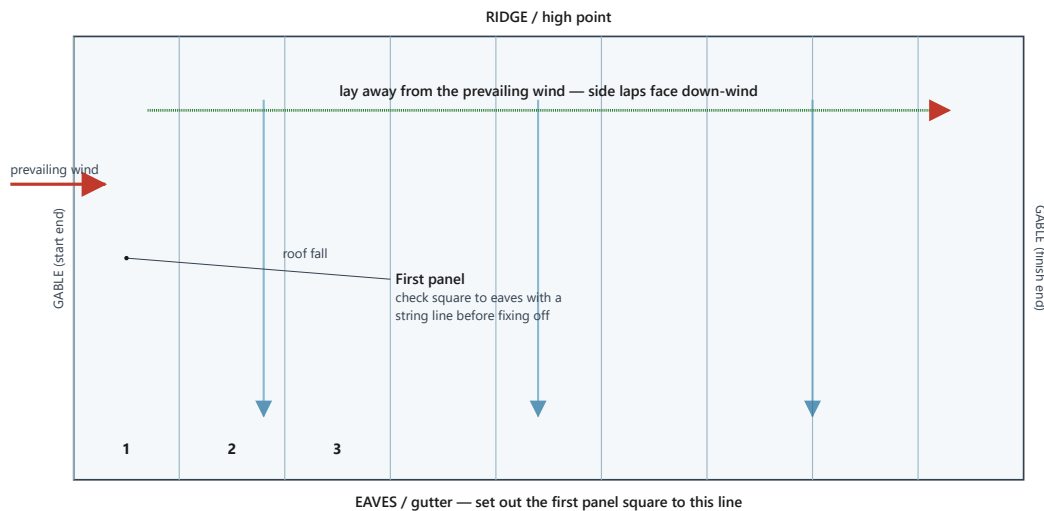
Coated steel (Chromadek or similar); Z / AZ / ZAM coatings. Roof-panel top in the standard palette (Frost White, Dove Grey, Sandstone Beige, Signal Brown, Quartz Grey, Anthracite Grey and additional colours per the current chart); **underside white only**. Confirm the current palette and stocked gauges with Technopol.

StoneWool DPR / Flat (if specified). Deep-Profiled Roof 990 mm cover (44 mm flute, 330 mm module) and Flat 1145 mm; skins ≥ 0.5 mm; A1 non-combustible core (120 kg/m³); minimum roof pitch 4° for DPR; loading tables are theoretical (beam theory) and carry the printed "confirm by laboratory testing" disclaimer. Weight and colour figures differ between Technopol documents — **confirm with Technopol before ordering**.

4 · Setting out & fixing at supports

Setting out & installation sequence

Roof plan — start end, laying direction and roof fall



Set out from the gable furthest from the prevailing wind so completed side laps face away from driving rain. Confirm the first panel is square (equal diagonals) before fixing — every following panel keys off it.

Start at the gable furthest from the prevailing wind; check the first panel square before fixing off.

Sequence

- 1 Check the steelwork: purlins level, in plane, at the designed centres, and top-surface true (min. 50 mm bearing available)
- 2 Set out from the gable **furthest from the prevailing wind** so finished side laps face down-wind
- 3 Lay the first panel, pull it **square to the eaves** with a string line and check equal diagonals before fixing
- 4 Fix the first panel off; every following panel keys off it — re-check line every few panels
- 5 Engage each new panel's side lap, draw it up tight, then fix at each support
- 6 Fit closures, flashings and penetrations as the roof advances; keep the run weathertight

Fixing at purlins / supports

- **990 IBR:** sealing stitch screws in the flute valleys and peaks at every support, and at eave / gable walls **double 14 × 125 mm hex-flange-head Class 4 tek screws + seal in every IBR valley** into 2 mm wall-plate angles
- Wall-plate angles: full length on eave walls, at 1.5 m intervals on gable walls, throughbolted with **M8 × 65 / 95 mm** mechanical anchors both sides at 1.5 m centres
- **990 SS:** hidden fixing clips (0.8 mm galv, 60 mm) at every support, self-drilling Class 4 screw + seal — no fastener through the weather face (see p8)
- Drive screws square and to the correct depth — the seal must compress evenly, not crush or stand proud

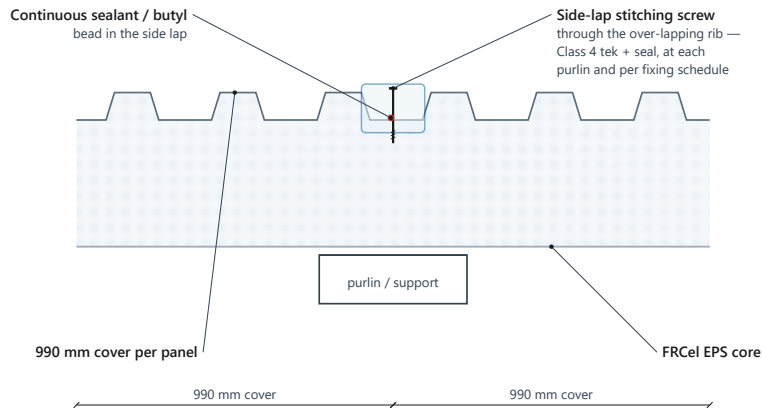
Fastener spec & pattern. Fastener type, length and the number per panel per support are set by the **engineer's fixing schedule** for the actual wind load and purlin gauge. Figures here are the Technopol detail defaults.

Location	Fastener (Technopol detail default)	Into	Spacing
IBR at intermediate / main support	Sealing stitch screw, Class 4 + seal	Purlin	Each valley & peak
IBR at eave / gable wall	Double 14 × 125 mm hex-flange tek + seal	2 mm wall-plate angle	Every IBR valley
Wall-plate angle anchor	M8 × 65 / 95 mm throughbolt	Masonry / concrete wall	Both sides, 1.5 m c/c
SS at every support	Hidden clip + S/D Class 4 screw + seal	Purlin	Each support

5 • Side laps, end laps & splicing

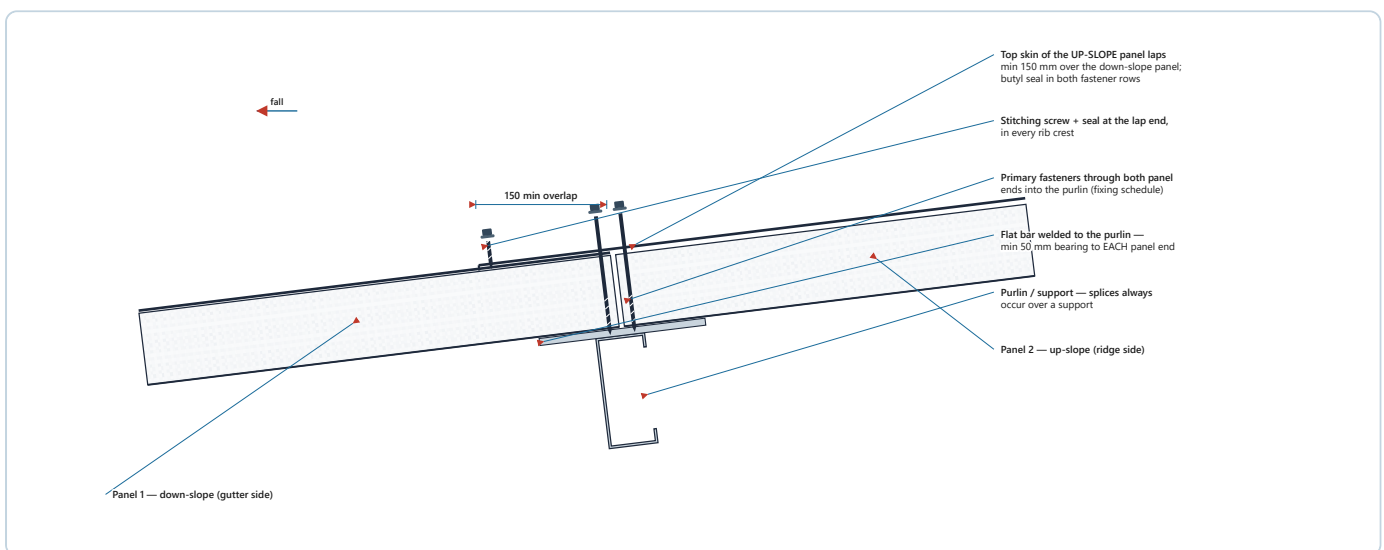
990 IBR — side lap

Interlocking side rib - stitch screw + sealant at each support



Recreated from Technopol IBR Composite Panel — Fixing & Flashing details.

990 IBR side lap — the raised side rib laps over the panel already laid; stitch the crown and seal the lap.



End lap / splice over a purlin — 150 mm min top-skin overlap, flat bar welded to the purlin for 50 mm bearing each side.

Side laps

- Draw each panel up tight to the last so the side ribs fully engage — no gaps that trap water or wind
- Stitch the over-lapping rib with a sealing screw at each support and per the schedule
- Run a continuous sealant / butyl bead in the lap where specified for the exposure

Sealing & butyl

- Seal both sides of every through-fastener at laps and closures
- Keep sealant surfaces clean and dry; do not seal over swarf, dust or moisture
- Seal all cut core edges and around every opening

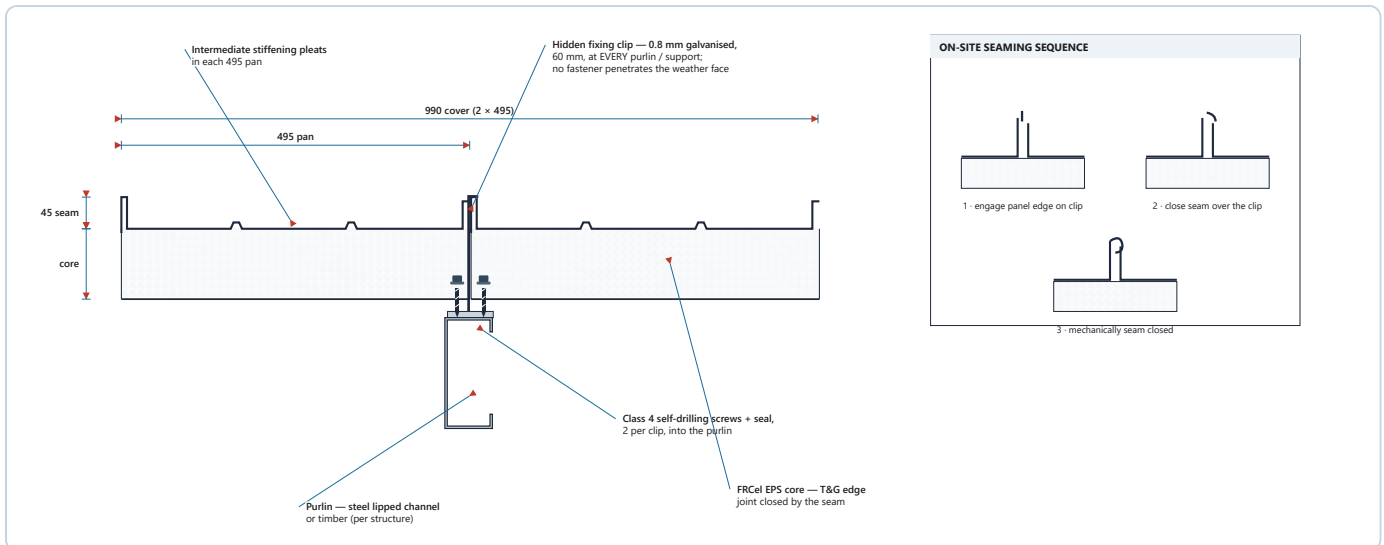
End laps (down the slope)

- Where a slope needs more than one panel, lap the **up-slope panel a minimum 150 mm over the down-slope panel**, over a support
- Seal on **both sides** of each primary fastener; keep **50 mm minimum bearing each side**
- Use Class 3/4 self-drilling primary fasteners with seal, in two rows through the lap

IBR panel splicing

- Minimum **150 mm overlap** of the IBR profile; butt panel ends only over a support
- Weld a **flat bar to the purlin** to guarantee 50 mm bearing for each panel end at the splice

6 · 990 Standing Seam — clips & on-site seaming



990 SS uses hidden 0.8 mm galvanised clips at every support and is mechanically seamed on site — no exposed fixings.

Why standing seam

- No fasteners penetrate the weather face — fewer leak paths, a clean architectural line
- The seam and intermediate pleats stiffen the sheet and let it move thermally on the clips
- Best where a higher watertightness standard or a low pitch is required

Fixing sequence

- 1 Set out and lay the first panel square (as Section 4)
- 2 At each support, screw a hidden clip (0.8 mm galv, 60 mm) down onto the purlin with a Class 4 S/D screw + seal
- 3 Engage the next panel's edge over the clips and pull it up to the panel already laid
- 4 Work along the roof, clipping every support before seaming
- 5 Mechanically **seam the joint closed on site** after clipping — by hand seamer or powered seaming machine



Standing-seam roof under installation — clips fixed, seams closed as the run advances.

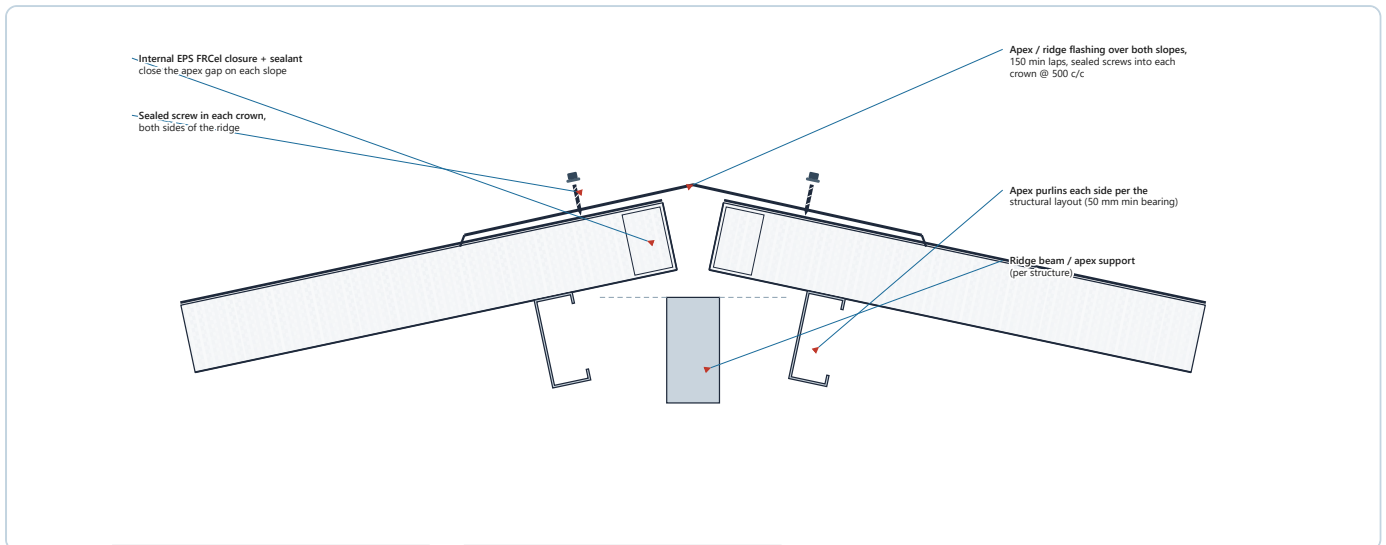
Seam it as you go. A clipped-but-unseamed run is not weathertight and is vulnerable to wind uplift. Close the seams progressively — do not leave long lengths clipped-only overnight or in weather.

Set the seamer correctly. Trial the hand or powered seamer on an offcut and check the closed seam profile before running production seams; a poorly-formed seam will leak and cannot be relied on for uplift.

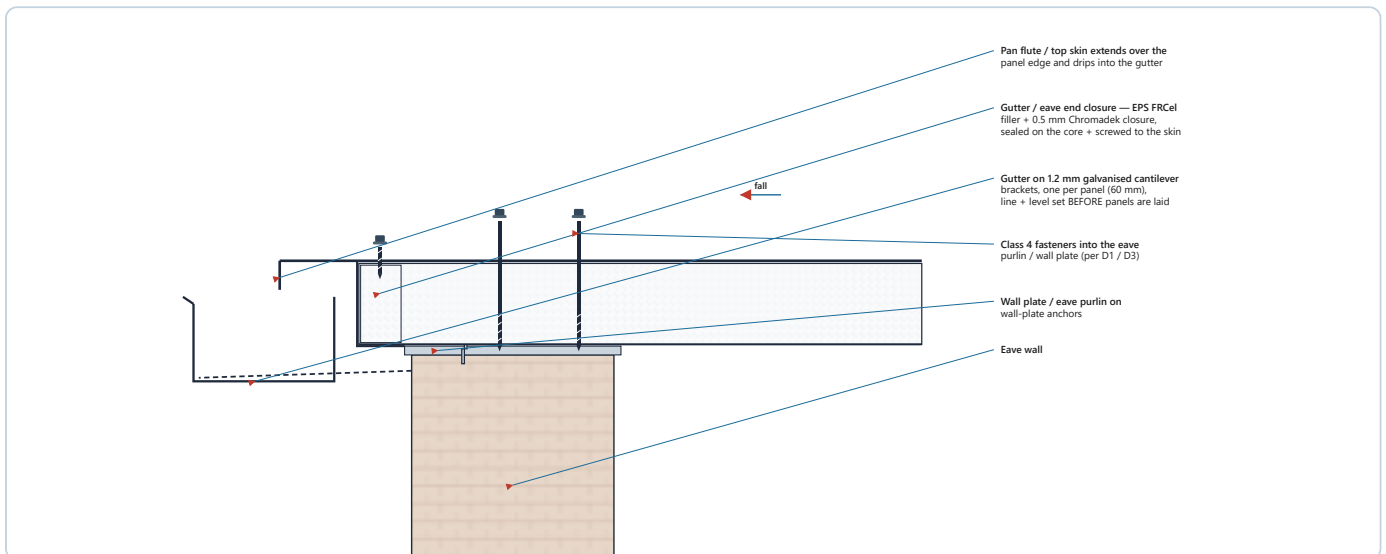
Head, gutter & gable

SS head-wall, gutter and gable closures use PU-foam and EPS FRCel filler pieces, 0.8 mm galvanised Z-closures, Sandor sticky strip and 0.5 mm Chromadek closures — see the flashing details on pages 9–10.

7 • Flashings A — ridge & eaves / gutter



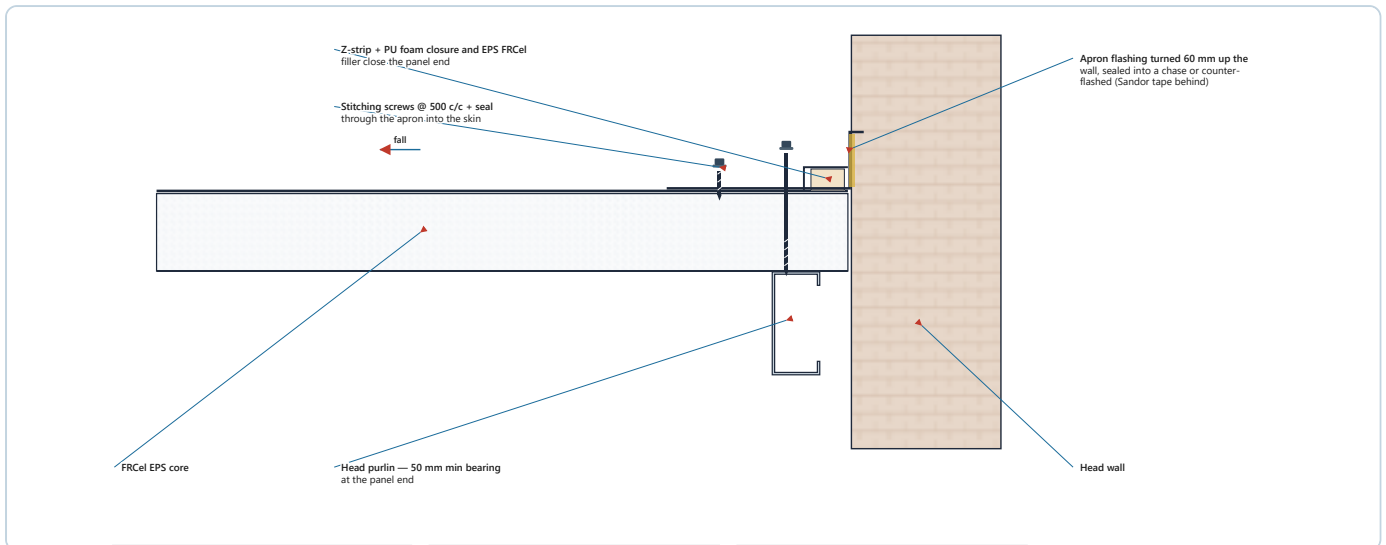
Ridge / apex — internal EPS FRCell filler and sealant close the gap; a ridge flashing laps over both slopes.



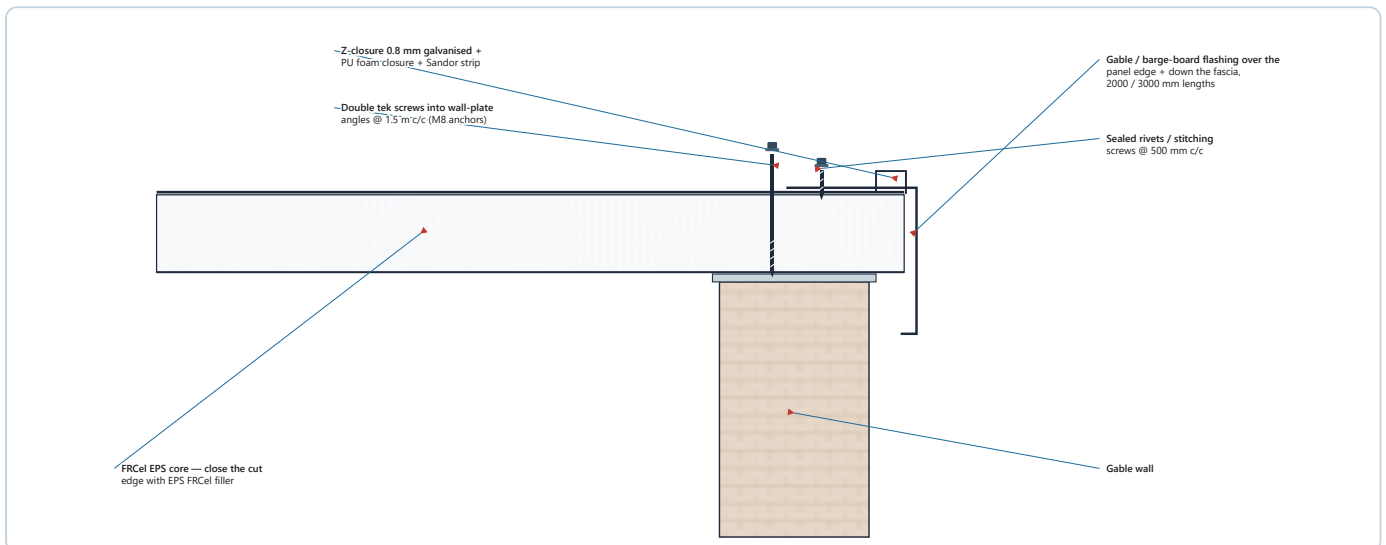
Eaves / gutter — the pan flute drips into the gutter over a Chromadek gutter-end closure on 1.2 mm galv brackets.

General flashing rules. Lap flashings down-slope so water runs over, not into, each joint; fix at **500 mm centres** with sealed rivets or stitching screws; bed every up-stand and lap on sealant / Sandor strip; and close every open panel core with an EPS FRCell filler and the matching PU-foam / Z-closure. Accessory lengths are typically 2000 / 3000 mm (gable, filler, Z-closures) and 1110 mm (IBR eave closure). Source: IBR & 990 SS Technopol flashing details.

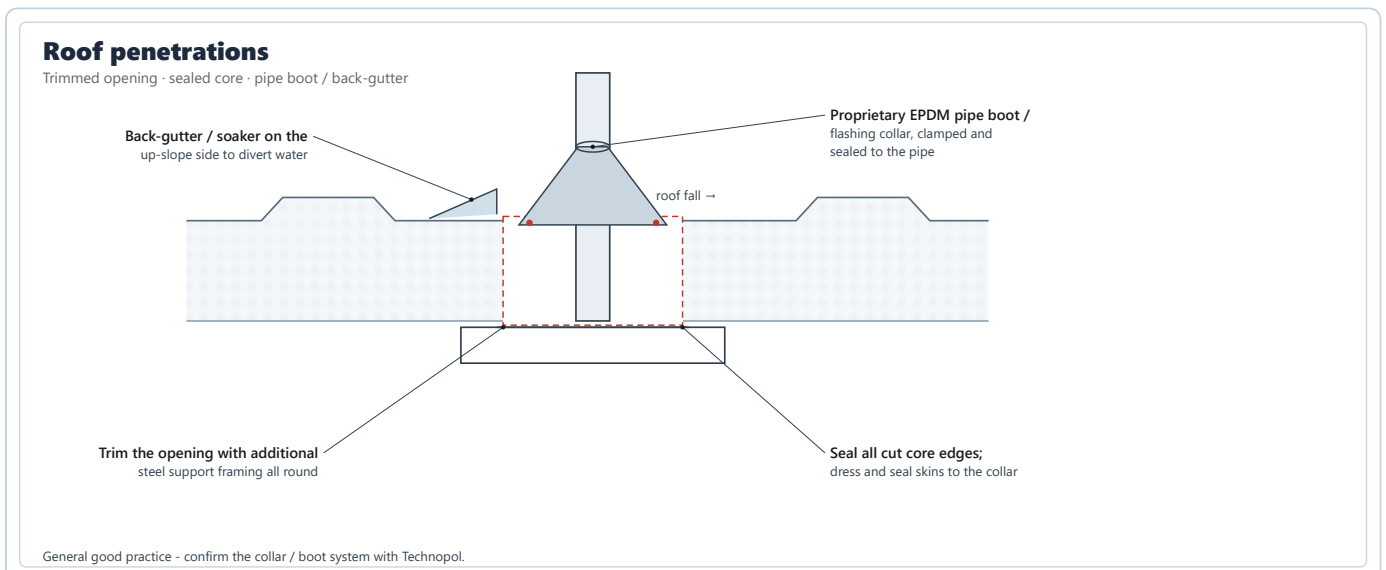
8 · Flashings B — head-wall, gable & penetrations



Head-wall — an apron flashing dresses up the wall and over the panel; the panel end is closed with a Z-strip and filler.



Gable / barge — an edge closure and Z-strip under a barge flashing over the panel edge and down the fascia.



Penetrations — trim the opening with extra steel, seal the cut core and weather with a pipe boot or up-slope back-gutter.

9 • Tools, fasteners & QA / handover checklist

Tools & fasteners checklist

Tools

- Screw gun with depth-set clutch (correct seating of sealed screws)
- Fine-tooth circular saw / nibbler / jigsaw — no abrasive grinders
- Riveter; hand or powered standing-seam seamer (SS)
- Panel lifting clamps / vacuum lifter or soft slings
- String lines, tape, square, level; crawl boards / roof ladders
- Vacuum / brush for swarf; touch-up coating in the panel colour

Fasteners & consumables

- Class 4 sealing stitch screws (IBR valleys & peaks)
- Double 14 × 125 mm hex-flange tek screws + seals (eave / gable)
- M8 × 65 / 95 mm throughbolt anchors for wall-plate angles
- Hidden clips 0.8 mm galv + Class 4 S/D screws + seals (SS)
- Class 3/4 primary fasteners + seals (end laps / splices)
- Sealed rivets; sealant / butyl; Sandor strip; PU-foam & EPS FRCell closures

QA / handover checklist

- Delivery checked & any damage recorded before off-load
- Panels stored on bearers, dry, covered, film removed on fixing
- Steelwork level, in plane, correct centres, 50 mm bearing
- First panel square to eaves; line re-checked along the run
- Fastener type, length & pattern per the engineer's schedule
- Every stitch / clip screw seated square, seal evenly compressed
- Side laps engaged & sealed; end laps 150 mm, sealed both sides, 50 mm bearing
- SS seams mechanically closed — no clipped-only lengths left
- Ridge, eaves/gutter, head-wall, gable & penetrations flashed & sealed
- All cut core edges & openings sealed; closures fitted
- Roof swept clear of swarf / offcuts; coating clean, touch-ups done
- As-built vs approved drawings & fixing schedule confirmed

Compliance & fire — honest wording

The FRCell EPS core carries a **Class B-s1,d0 reaction-to-fire classification to SANS 53501-1** (report IT 23-08-00009) — a reaction-to-fire class, **not** a fire-resistance (minutes) rating. StoneWool cores are **A1 non-combustible**. Do not quote any "FRxx" fire-resistance figure for a LiteSpan panel unless a current test report for that exact panel states it. EPS is combustible — keep flame and hot-works away during construction. LiteSpan is not an Agrément-certified line (the Technopol Agrément certificate 2020/609 covers the LiteCore Building System only). Test reports are available from Technopol on request.

Technical support, fixing schedules & accessory schedules — info@technopol.co.za · (011) 363-2780/1/2 · technopol.co.za