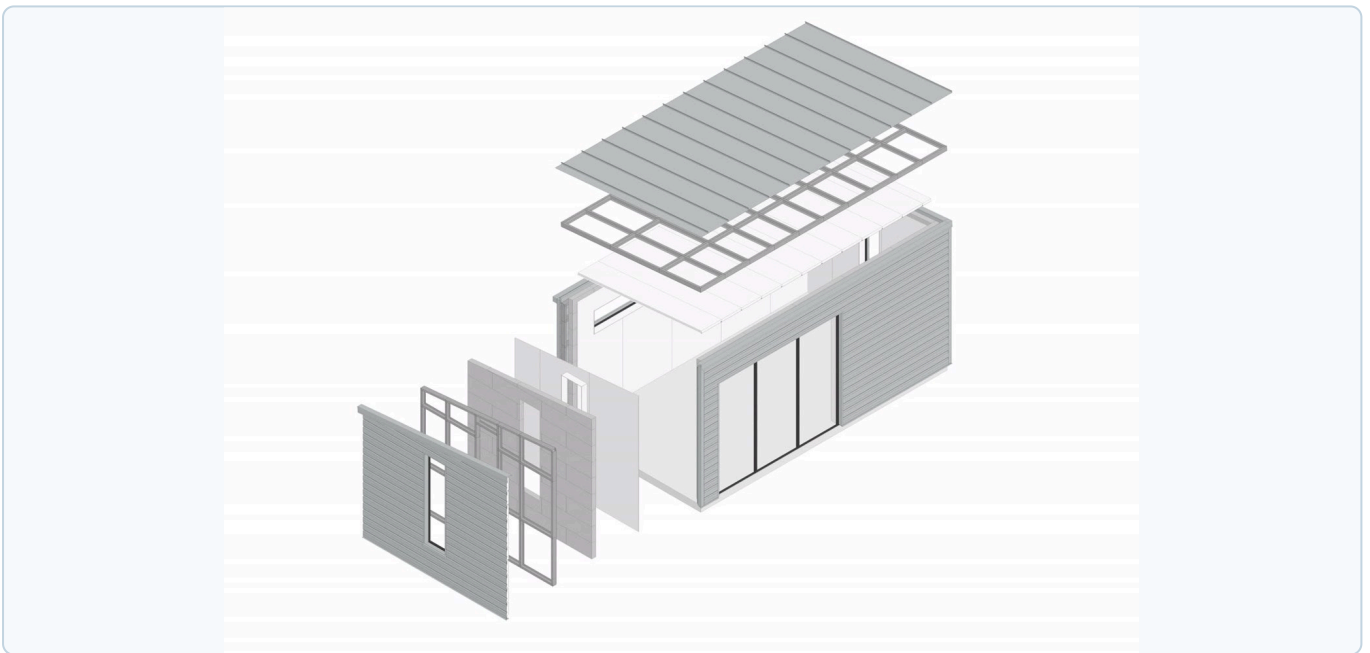


TECHNICAL DESIGN GUIDE

LiteClad

EIFS — roof & wall finishing in metal

Pre-painted steel weatherskin · separate external EPS insulation · the finish is the face



ISO exploded system render — the full LiteClad build-up: pre-painted steel outer sheeting, top-hat rail / purlin structure, external EPS insulation layer and internal lining, with window and door detailing.

LiteClad is an **EIFS in metal**: continuous external EPS insulation over the substrate, a galvanised top-hat rail / batten over it, and a 0.5 mm roll-formed pre-painted steel profile fixed to the rail as the weatherskin — supplied in six roll-formed profiles. The painted metal face **is** the weatherproof finish — an external insulation system (EIFS) delivered in metal, with no wet render coat. This guide covers the profile range, thermal performance, fire classification, and design & installation considerations.

Standing Seam

IBR Wide

DutchClad

ClipClad

Corrugated

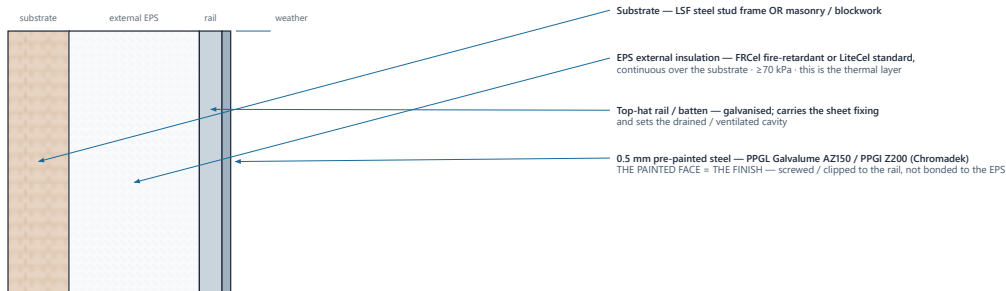
NuClad

1 • The principle — “EIFS in metal”

A conventional External Insulation & Finish System (EIFS / ETICS) fixes insulation to a wall, then builds up a wet render coat, glass-fibre mesh, base coat and paint **on site** to weatherproof it. **LiteClad** delivers the same external-insulation idea, but the finish is a factory-painted metal profile: continuous **external EPS insulation** is fixed over the substrate, a galvanised **top-hat rail / batten** is set over it, and a 0.5 mm roll-formed **pre-painted steel profile** is screwed or clipped to the rail. The painted metal face **is** the finish — no render coat required, and the steel is not bonded to the insulation.

LITECLAD BUILD-UP — “EIFS IN METAL”

Substrate / external EPS insulation / top-hat rail + cavity / pre-painted steel weatherskin — the metal face is the finish (not to scale)



The difference from a plastered ETICS / EIFS

Plastered ETICS



Needs a wet render coat + glass mesh + topcoat + paint applied on site.

LiteClad — “EIFS in metal”



The factory pre-painted metal face **IS** the finish — no render coat.
The steel profile screws / clips to a top-hat rail over the external EPS — not bonded to the insulation.

D1 - LiteClad build-up — “EIFS in metal”

Not to scale · from Technopol system data

LiteClad build-up: substrate / external EPS insulation / top-hat rail + cavity / 0.5 mm pre-painted steel weatherskin. Unlike a plastered ETICS, the factory-painted metal face is the finish (not to scale).

How it goes together

- **Steel profile** — 0.5 mm roll-formed pre-painted **PPGL** (Galvalume AZ150) or **PPGI** (galvanised Z200), Chromadek type — the weatherskin and finish
- **External insulation** — EPS: **LiteCel** standard grade, or **FRCell** fire-retardant grade on request, continuous over the substrate
- **Top-hat rail / batten** — galvanised, set over the insulation; carries the sheet fixing and the drained cavity
- **Fixing** — the steel is screwed or clipped to the rail; it is **not** bonded to the insulation
- Roll-formed into **six profiles** (see section 2), field-trimmed to suit openings

Why it is specified

- **Finish + insulation in one pass** — no plastering trade, no wet-work drying time
- **Continuous external insulation** — the external EPS wraps the structure, cutting thermal bridging
- **Durable factory finish** — the pre-painted metal weatherskin handles UV, rain and handling
- **Lightweight** — a steel weatherskin over external EPS, fast dry fixing over frame or masonry
- **Retrofit-friendly** — over-clad an existing wall to upgrade its insulation and appearance

In one line. LiteClad is external insulation finished in metal: a pre-painted steel profile fixed over continuous external EPS, dry-fixed and weatherproof. The metal face you see is the finished, painted surface — not a bonded panel.

Sister products (distinct lines)

LiteSpan — structural insulated sandwich panel (990 / 1145 cover). **LiteCore** — EPS-block walling. These are separate product families; this guide covers the **LiteClad** steel-profile cladding range.

2 • Profile range





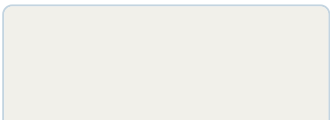

LiteClad is roll-formed into **six profiles**, so the same insulated-metal system suits an EIFS over-clad, a wall elevation, a roof or a ceiling. Profiles differ in cover width, fixing method (concealed vs through-fixed) and the orientation they are laid in — choose to suit the appearance and the exposure.

Profile	Cover width (mm)	Fixing	Orientation	Application
Standing Seam	Narrow 282 / Wide 495	Concealed holding clips — seamed-in, hidden	Vertical or horizontal	EIFS · wall cladding · roofing
IBR Wide	990	Roof screws — through-fixed, visible	Vertical or horizontal	EIFS · wall cladding · roofing
DutchClad	293	Wafer screws — through-fixed, hidden	Horizontal lapped (weatherboard look)	EIFS · wall cladding
ClipClad	270	Wafer screws — through-fixed, hidden	Vertical or horizontal	EIFS · wall cladding · roofing
Corrugated	990	Roof screws — through-fixed, visible	Vertical or horizontal	EIFS · wall cladding · roofing
NuClad	490	Wafer screws — through-fixed, hidden	Wall / ceiling	EIFS · wall cladding · ceiling

Cover widths and fixing methods are verified product data. Span, wind-uplift and minimum roof-pitch limits for the roofing-rated profiles are project-specific — confirm with Technopol / the project engineer.

Standard colour range

Eight standard pre-painted colours (RAL references). The colour is the factory finish on the steel face — no on-site painting. Custom colours to order; on-screen swatches are indicative only.

 Dove Grey RAL 7042	 Basalt Grey RAL 7012	 Dark Dolphin RAL 7031	 Sandstone Beige RAL 1002
 Anthracite Grey RAL 7016	 Signal Brown RAL 8002	 Frost White RAL 9016	 Quartz Grey RAL 7039

Concealed vs visible fix. Standing Seam, ClipClad, DutchClad and NuClad present an **unbroken face with no exposed fasteners** (clips or hidden wafer screws under the lap). IBR Wide and Corrugated are **through-fixed** with roof screws visible on the crown — the familiar, economical option for larger roofs and walls.

2 • Profile range (applied appearance)

The five through-clad profiles shown on the standard gable house-form (roof and wall in one profile), plus the NuClad flat-pan face texture. Every profile is a roll-formed pre-painted steel weatherskin, available in the eight standard colours.



Standing Seam

282 / 495 mm cover · concealed clips · wall & roof



IBR Wide

990 mm cover · through-fixed · wall & roof



DutchClad

293 mm cover · hidden wafer fix · horizontal lap



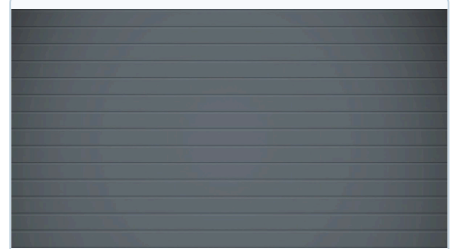
ClipClad

270 mm cover · hidden wafer fix · wall & roof



Corrugated

990 mm cover · through-fixed · wall & roof



NuClad

490 mm cover · hidden wafer fix · wall / ceiling

Choosing a profile. Use **Standing Seam** or **ClipClad** where a clean, fastener-free architectural face matters; **DutchClad** for a horizontal weatherboard look; **IBR Wide** or **Corrugated** for economical wide-cover roofs and walls; **NuClad** for flush wall panels and insulated ceilings. All six can serve as an EIFS over-clad.

Renders are illustrative of profile geometry and finish. NuClad is shown as a close-up face texture; the remaining profiles are shown applied to a reference building form.

3 • Thermal performance

The external EPS insulation is the insulant; the steel profile is the weatherproof, durable finish (its contribution to R is negligible). Thermal resistance (R) rises with insulation thickness, so the EPS is specified to the target R-value for the wall or roof. Values below are for the **FRCell** EPS.

1.62

 50 mm EPS · installed R (m²K/W)

2.95

 100 mm EPS · installed R (m²K/W)

4.40

 150 mm EPS · installed R (m²K/W)

Installed R-value by EPS thickness

EPS thickness	Installed R (m ² K/W)
50 mm	1.62
100 mm	2.95
150 mm	4.40

FRCell EPS, installed R-value. Interpolate for intermediate thicknesses; confirm the standard EPS thickness menu with Technopol.

External EPS insulation (FRCell)

Thermal conductivity λ	≤ 0.038 W/m·K
Compressive strength	≥ 70 kPa
Service temperature	-40 °C to +75 °C
EPS density	15 kg/m ³ standard (20 / 30 available)
FRCell density range	12–30 kg/m ³
Steel profile	0.5 mm PPGL (AZ150) / PPGI (Z200)

NuClad insulated ceiling boards

NuClad also serves as an insulated ceiling board (15 kg/m³ EPS core, steel-faced). Board thickness sets the U- and R-value below the roof.

Board thickness	EPS core	U-value (W/m ² K)	Installed R (m ² K/W)
40 mm board	35 mm	1.06	1.25
60 mm board	50 mm	0.75	1.68
100 mm board	80 mm	0.46	2.50

Continuous external insulation. Fixed as an over-clad, the LiteClad external EPS wraps the outside of the structure, so framing and fasteners are largely inside the insulation line — reducing the thermal bridging that a between-studs insulation leaves behind. Actual whole-wall performance depends on the substrate and build-up; confirm with the project engineer.

4 • Fire & compliance

There are **two distinct fire claims**, and they answer different questions. One is a **material** reaction-to-fire class; the other is a **fire-resistance rating in minutes** for a specific tested wall assembly. They are kept separate below and must not be conflated.

(a) Reaction-to-fire — the FRCel EPS insulation (material class)

The **FRCel** fire-retardant EPS insulation is classified **Class B-s1,d0** to **SANS 53501-1** (Ignis Testing report **IT 23-08-00009**): limited contribution to fire, lowest smoke (s1), no flaming droplets (d0). This is a **reaction-to-fire material classification** describing how the EPS insulation behaves when exposed to fire — it is **not** a fire-resistance (minutes) rating.

(b) Fire resistance — NuClad LiteCore LSF Wall System (REI 60)

The **NuClad LiteCore LSF Wall System** achieved a **60-minute fire-resistance rating — REI 60: Stability (R), Integrity (E) and Insulation (I)** all sustained for 60 minutes, tested to **SANS 10177-2** by **Fire Testing Services (CSIR, Pretoria)**, report **FT 24/003 Issue 2**, 22 April 2024.

Tested assembly (that specific system): external Styrobond render + fibreglass mesh / LiteCore 100 mm brick / LSF 91 mm frame / NuClad 30 mm cladding. The rating applies to **that tested wall system**, not to a bare profile. The full test report is confidential (copyright Fire Testing Services) — the **full test report is available from Technopol on request**. Classification valid five years (to approximately April 2029) or until the product changes.

Reaction-to-fire (material)

- Applies to the **FRCel EPS insulation material**
- **Class B-s1,d0** to SANS 53501-1
- Ignis Testing report IT 23-08-00009
- Describes ignitability / smoke / droplets, **not minutes**

Fire resistance (assembly)

- Applies to the **NuClad LiteCore LSF wall system**
- **REI 60** — 60 min R, E and I
- SANS 10177-2 · FT 24/003 Issue 2
- Full report from Technopol on request

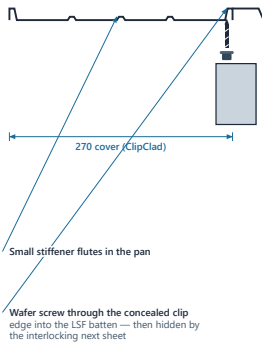
Certification scope. LiteClad is **not** an Agrément-certified line — Agrément certificate **2020/609** applies to **LiteCore** only, not to LiteClad. Specify the FRCel EPS where a fire-retardant grade is required, and cite the REI 60 rating only for the tested NuClad LiteCore LSF wall system above.

5 • Design & site considerations

FIXING METHODS — CONCEALED vs THROUGH-FIXED

Concealed / hidden fix (Standing Seam clip · ClipClad, DutchClad, NuClad wafer) versus through-fixed visible (IBR Wide, Corrugated)

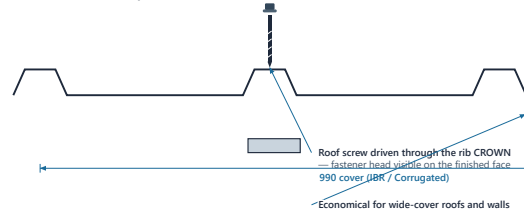
CONCEALED / HIDDEN FIX



CONCEALED-FIX PROFILES

Standing Seam — holding clips, seamed on site
ClipClad / DutchClad / NuClad — wafer screw, hidden under the lap / interlock. No visible fastener.

THROUGH-FIXED / VISIBLE



THROUGH-FIXED PROFILES

IBR Wide & Corrugated — roof screw through the crown
Fastener heads visible; fast, economical, the familiar option for larger roofs & walls.

D3 • Fixing methods — concealed vs through-fixed

Not to scale · profile geometry from Technopol sections

Fixing methods across the range: concealed / hidden fix (Standing Seam clips; ClipClad, DutchClad, NuClad hidden wafer screws) versus through-fixed visible (IBR Wide and Corrugated roof screws through the crown).

Fixing & appearance

Concealed / hidden: Standing Seam seams over holding clips; ClipClad, DutchClad and NuClad wafer-screw and hide the fastener under the next panel's lap — an unbroken face. **Through-fixed / visible:** IBR Wide and Corrugated fix with roof screws on the crown — economical over large areas.

Orientation

Most profiles run **vertical or horizontal**; DutchClad is laid **horizontally lapped** (weatherboard look); NuClad suits flush **walls and ceilings**. Set the run direction for drainage and appearance.

Retrofit over-cladding

LiteClad over-clads existing masonry or steel as an **EIFS upgrade** — adding continuous external insulation and a fresh factory-painted finish in one operation, without wet trades.

Air cavity

The top-hat rail sets an **optional ventilated / drained air cavity** between the external EPS and the steel profile where the design calls for it — to manage drainage and vapour behind the cladding. Set battens and flashings accordingly.

Handling & protection

The steel profiles are **light and factory-finished**: lift, cut and fix so the **painted steel face** — which is the finished weatherskin — is not scored or dented. Cut with appropriate tools, remove swarf, and detail junctions and openings with matching flashings.

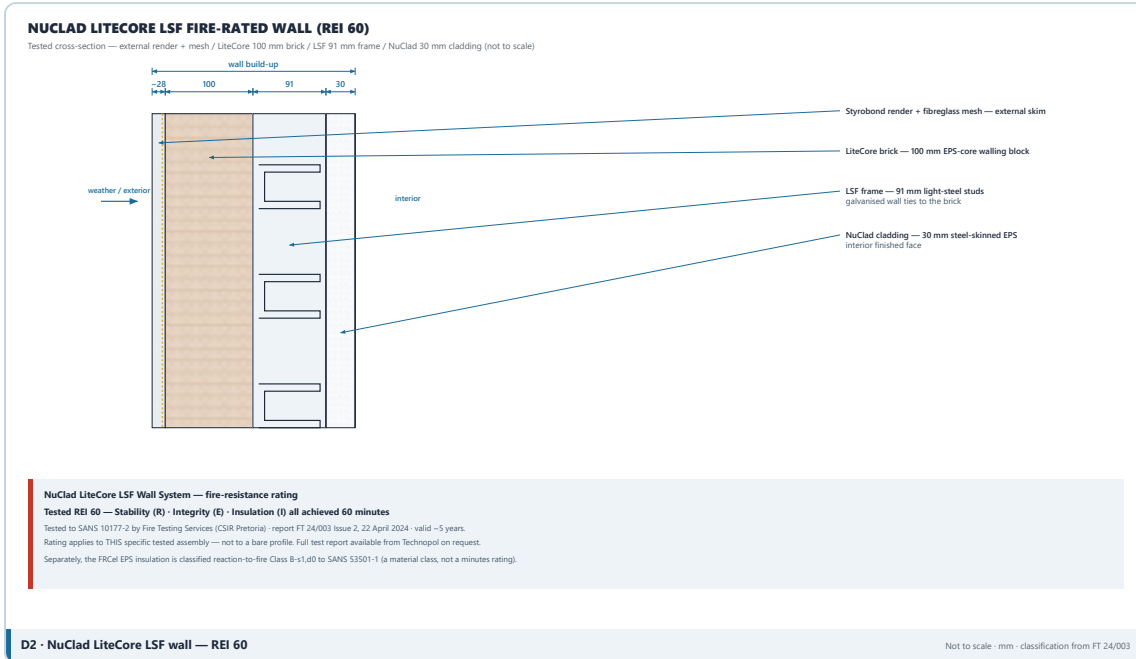
Structural design is the engineer's

Spans, purlin / girt spacing, fastener pattern and wind-uplift resistance are the **project engineer's** responsibility. Fix to a structure designed for the imposed and wind loads at the site.

Confirm with Technopol / the project engineer. Minimum roof pitch for the roofing-rated profiles, per-m² system weight, span & wind-uplift load tables, and the standard EPS-thickness menu are project-specific — obtain current values from Technopol and have the engineer verify them for the design case.

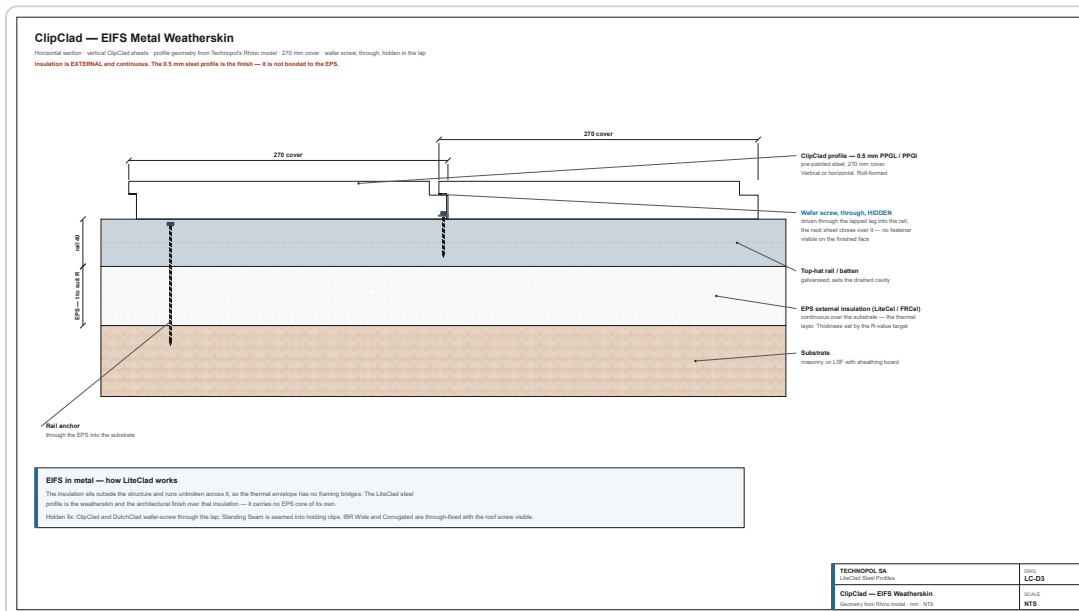
6 • Application details

6.1 NuClad LiteCore LSF fire-rated wall (REI 60)



The tested REI 60 assembly: external Styrobond render + mesh / LiteCore 100 mm brick / LSF 91 mm frame with galvanised ties / NuClad 30 mm cladding. Fire-resistance rating to SANS 10177-2, report FT 24/003 — full report from Technopol on request. The B-s1,d0 note is the separate material class.

6.2 ClipClad concealed-fix wall detail



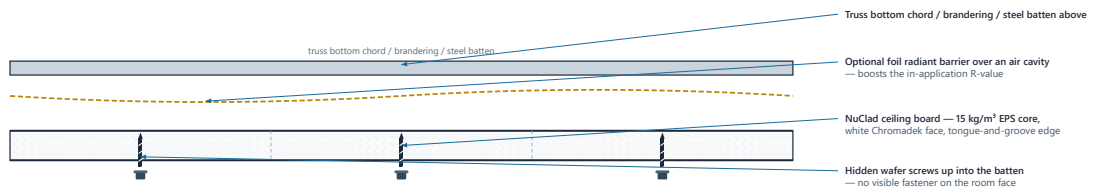
ClipClad 0.5 mm steel profile wafer-screwed through its concealed leg into a top-hat rail over the continuous external EPS insulation, then hidden by the interlocking overlapping sheet — 270 mm cover, no exposed fasteners. The steel is the weatherskin; it is not bonded to the insulation.

6 • Application details (continued)

6.3 NuClad insulated ceiling

NUCLAD INSULATED CEILING — SECTION

Steel-faced EPS board fixed below the truss / branderling, over an optional foil radiant-barrier air cavity



NuClad ceiling board options (15 kg/m³ EPS core)

Board	EPS core	U-value W/m ² K	Installed R m ² K/W
40 mm	35 mm	1.06	1.25
60 mm	50 mm	0.75	1.68
100 mm	80 mm	0.46	2.50

D4 • NuClad insulated ceiling — section + board options

Not to scale - mm - verified thermal data

Steel-faced EPS ceiling board fixed below the truss / branderling with hidden wafer screws over an optional radiant-barrier air cavity, with the verified 40 / 60 / 100 mm board options (U-value and installed R).



Wall corner (Our Shack project) — the steel weatherboard cladding meets an exposed return, with the external EPS insulation edge and galvanised base flashing visible at the trim.

Detailing notes

- Trim and cap **cut edges** and openings with matching flashings so the EPS is not left exposed
- Hidden wafer fixings keep the ceiling / wall face **flush and unbroken**
- An optional **air cavity / radiant barrier** behind the board improves the assembly's performance
- Set out board joints and fixings to the **frame / branderling** module
- Confirm fastener type, spacing and edge details for the substrate with the **project engineer**

7 • LiteClad in the field

Installed LiteClad on South African projects — roofs and walls in the factory-painted metal finish, fixed dry over frame and masonry, from single houses to full building envelopes.



Standing Seam roofs — aerial rooftop view at sunrise, Boland / Winelands mountains beyond; concealed-fix seams run to the ridge.



Finished house entrance — wall cladding meeting a standing-seam roof and a plastered wall; the metal face is the finish.



Completed building — full-length exterior on a brick plinth, vertical wall profile in the pre-painted finish.



Mohlakeng Church install — LiteClad wall cladding being fixed on scaffolding over the brick base; lightweight, dry fixing.

Bring your project to Technopol — profile selection, colours, insulation thickness & project support · info@technopol.co.za · (011) 363-2780/1/2 · technopol.co.za