



ROOF AND WALL PANEL

Freeman Group insulated roof panels are high performance, all-weather roofing options, designed for New Zealand's climate and temperature ranges. Freeman Group insulated roof panels are suitable for both residential and commercial premises.

PANEL MANUFACTURING

QUALITY AND DURABILITY

Freeman Group panels are manufactured and tested to BS EN 14509 standards from the highest quality materials, using state of the art production equipment to rigorous quality control standards, ensuring long term reliability and service life.

WARRANTY

In business, your reputation is everything and minimising risk makes sound business sense. Freeman Group's range for thermal insulated cladding will

give you the peace of mind you've chosen a quality material that conforms to relevant Australian and New Zealand standards and backed by a warranty you can count on.

PACKAGING AND DELIVERY

Protective film is applied to the steel facing during the production process. Freeman Group insulated panels are stacked flat. The number of panels in each pack depends on panel thickness. Handling guidelines are available from Freeman Group Technical Services.



PANEL OVERVIEW

WHY PIR CORE?

Economic Advantages

Accelerated construction reduces site time and energy efficiency of PIR core, which can reduce operating costs by up to 50%.

Insulation Properties

Due to the low heat conductivity of its fully formed closed cell structure, PIR is thermally efficient. This superb thermal performance allows buildings to achieve premium levels of energy efficiency, with some of the thinnest available solutions.








Durability

As PIR does not sag or absorb moisture you can be confident of consistent performance which will last the full lifetime of the building.

Fire Resistance

PIR will self-extinguish as soon as the cause of fire is removed. PIR foam is a thermosetting material. It does not melt, flow or drip when exposed to fire and it will form a strong char that helps protect the foam core and prevent flame spread within the panels.

Occupant Advantages

-  Passive temperature control for a more stable environment.
-  Superior water, condensation and moisture proofing.
-  Low allergenic qualities.
-  Superior seismic performance.
-  High fire rating for maximum inhabitant safety.
-  Paint and steel finish option.
-  Lifetime performance, with no deterioration of airtightness or insulation values.

Moisture Resistance

Water absorption through exposure to moisture or in exceptional circumstances through floods, is a significant factor with any modern insulation product. Due to having a closed cell structure, PIR is a hydrophobic product, meaning it does not absorb water. This allows the thermal performance and integrity of the product to be retained regardless of water exposure.

STEEL FACING

Colours

Our standard colour is Titania. Other colours are available on request. However, please note that the colour chart shown here is indicative only and is as close as the printing process allows. If in doubt before ordering, please refer to your Freeman Group agent's colour chart.



Zincalume® coating

The Zinc/Aluminium alloy coated steel has been formulated to give a significantly longer service life than a galvanized coating. This is of particular value in New Zealand where the prevailing winds carry corrosive salt-laden air many kilometers inland.



FREEMAN GROUP INSULATED 4-RIB PANEL

PRODUCT INFORMATION

Freeman Insulated 4-Rib panel profile roof panels can be used for both roof panel and wall panel cladding for residential, industrial and commercial applications. Darker colours are known to expand and contract. Depending on the application, darker colours may not be covered by our standard warranty. Please consult Freeman Group for further information.

Panel Performance

Thickness (mm)	50	75	100	150
R Value at 15°C (mK/W)	2.8	4.0	5.3	7.7
R Value at 23°C (mK/W)	2.7	3.9	5.0	7.4
Weight (Kg/m ²)	13.0	14.1	15.2	17.4
Unsupported Span (m)	3.0	4.3	5.0	5.5

Weight for 0.55/0.55 facings

Acoustic Properties

Freq	125	250	500	1000	2000	4000	STC	RW
Hz	16.1	17.5	19.2	23	32.2	36.8	20	23

Fire Performance

AS 1530.3 - Group 1-S	
Ignitability Index	0
Spread of Flame Index	0
Heat Evolved Index	0
Smoke Index	1
Fire Resistance Test: AS1530.4	--/120/40

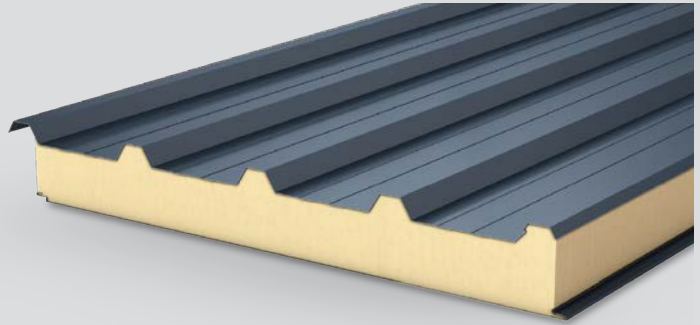
Foam Plastic Core	
Core meets the requirements of AS1366.2	

External Radiation(ISO 5660-1:2015)	
Total Heat THRR	Peak Heat PHRR
34.7 MJ/m ²	83.5 kW/m ²

Product Properties

Core	Fire-retardant (PIR) foam
External facing	0.55mm thick Zinc/Aluminium G300S AZ150 coated steel to AS 1397
Internal facing	0.55mm thick Zinc/Aluminium G300S AZ150 coated steel to AS 1397
Width	1000mm cover width
Length	As required, 2m - 24m
Undercut Range	75mm - 200mm
Thickness	50mm, 75mm, 100mm and 150mm

Other steel thicknesses and coatings upon request.

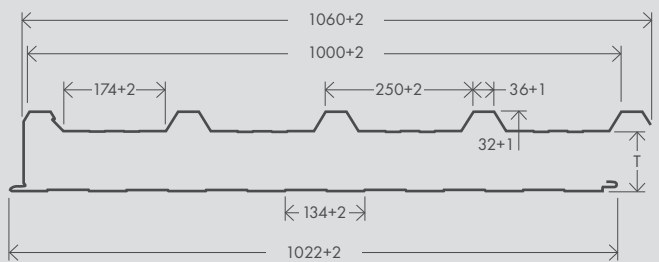
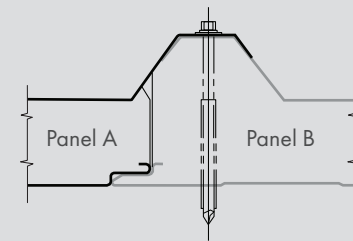


PROFILE OPTIONS

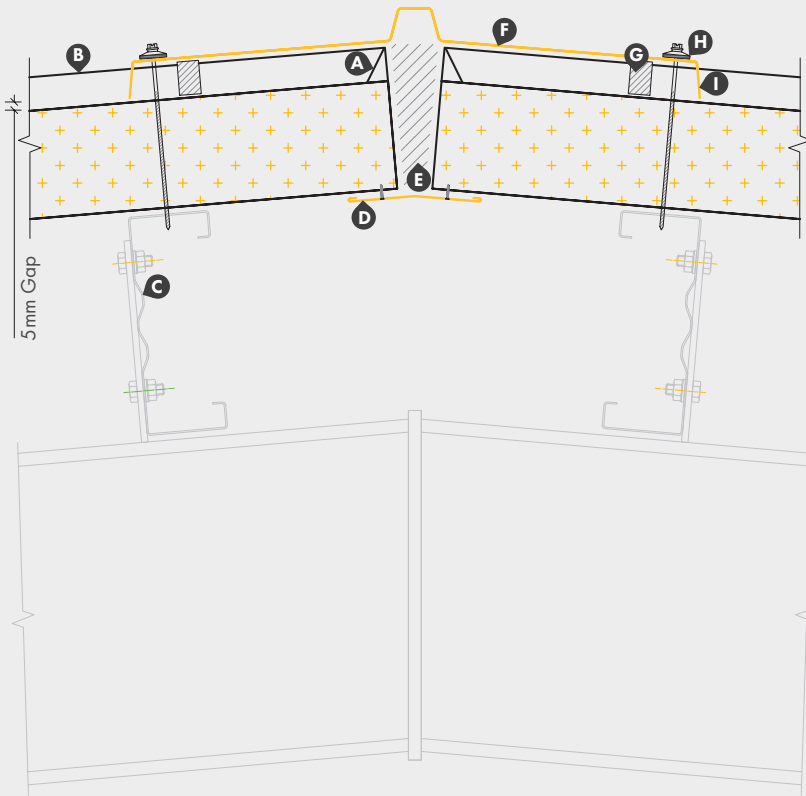
Freeman Insulated 4-Rib - Flat



Freeman Insulated 4-Rib - Swaged



D01 RIDGE DETAIL



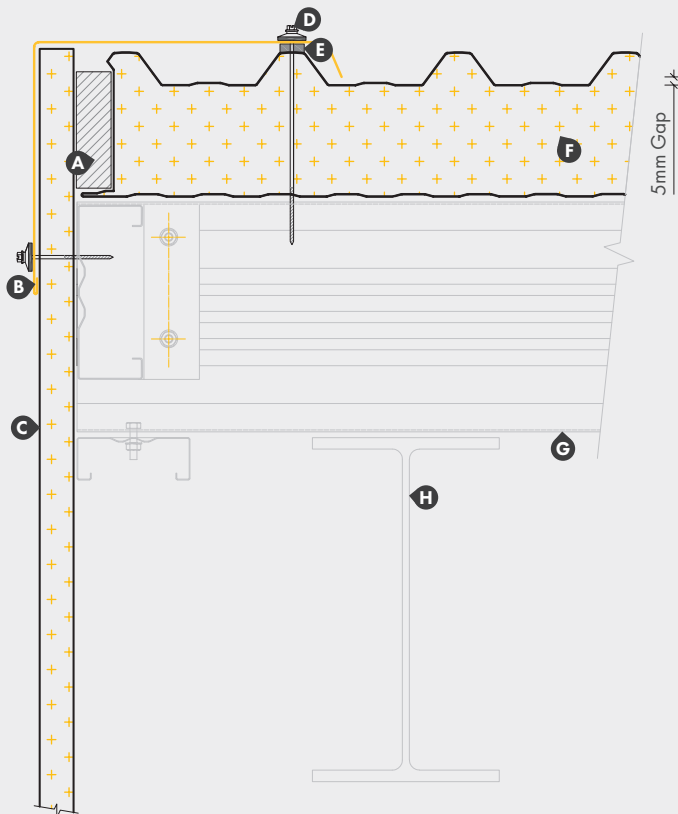
- A** Turn up panel end
- B** Freeman Insulated Roof panel
- C** Purlin
- D** Freeman Group COLORSTEEL® closure flashing
- E** Fill gaps with FR foam filler
- F** Freeman Group COLORSTEEL® ridge flashing
- G** Profiled filler sealed top and bottom
- H** 25mm Embossed washer
- I** Ridge notched into profile

*Freeman Group COLORSTEEL® ridge flashing for corrugated roof panel.

X - 130mm or 200mm wide cover ridge

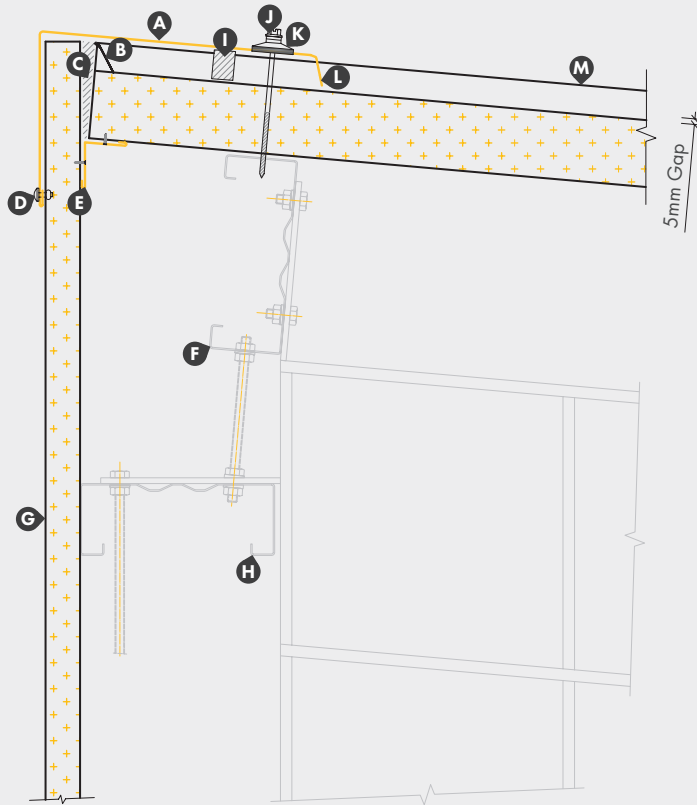


D02 BARGE DETAIL



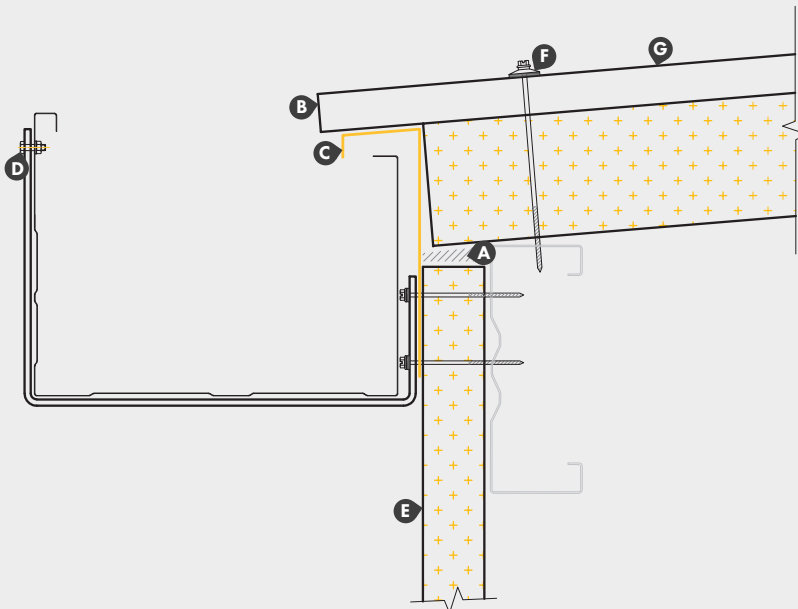
- A** Fill gaps with FR foam filler
- B** Freeman Group COLORSTEEL® barge flashing
- C** Freeman wall panel
- D** 25mm Embossed washer
- E** Trimseal lap tape
- F** Freeman wall panel
- G** Purlin
- H** Portal rafter beam

D03 APEX DETAIL - MONOPITCH



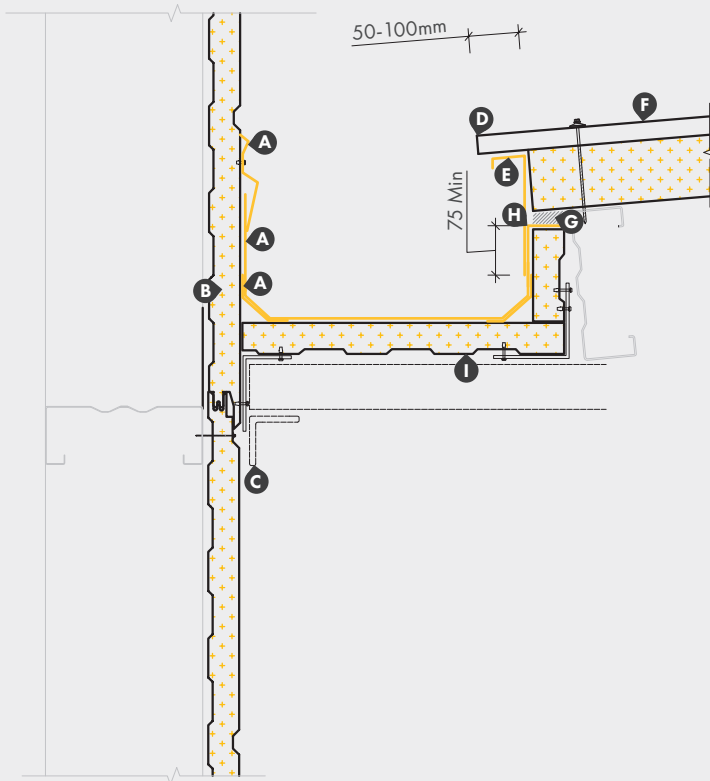
- A** Freeman Group COLORSTEEL® ridge flashing
- B** Turn up panel end
- C** Fill gaps with FR foam filler
- D** 4mm Ø blind rivet
- E** Freeman Group COLORSTEEL® internal flashing
- F** Purlin
- G** Freeman wall cladding
- H** Purlin
- I** Profiled filler sealed top and bottom
- J** Primary fix head flashing to top purlin
- K** 25mm embossed washer
- L** Flashing notched into profile
- M** Freeman wall cladding

D04 EAVES GUTTER DETAIL



- A** Fill gaps with FR foam filler
- B** Turndown (for roof pitch below 8°)
- C** Freeman Group COLORSTEEL® eave flashing
- D** Galv. Gutter bolt
- E** Freeman wall cladding
- F** 25mm Embossed washer
- G** Freeman wall cladding

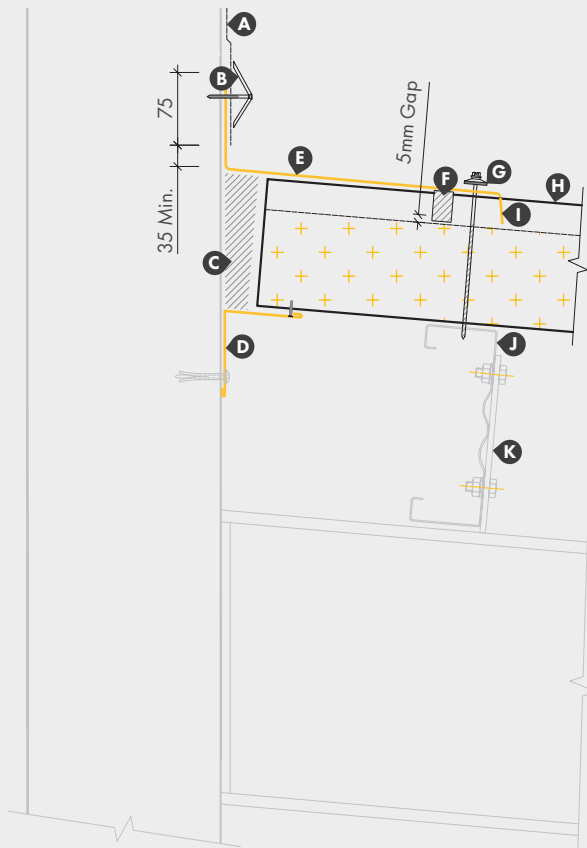
D05 INTERNAL GUTTER DETAIL



- A** Freeman Group COLORSTEEL® flashing
- B** Freeman wall panel
- C** Internal gutter support structure omitted for clarity
- D** Turndown (for roof pitch below 8°)
- E** Freeman Group COLORSTEEL® flashing
- F** Freeman Insulated Roof panel
- G** Fill gaps with FR foam filler
- H** Freeman Group COLORSTEEL® flashing
- I** Freeman wall panel

Note: All flashing sealed with gun grade butyl sealant.

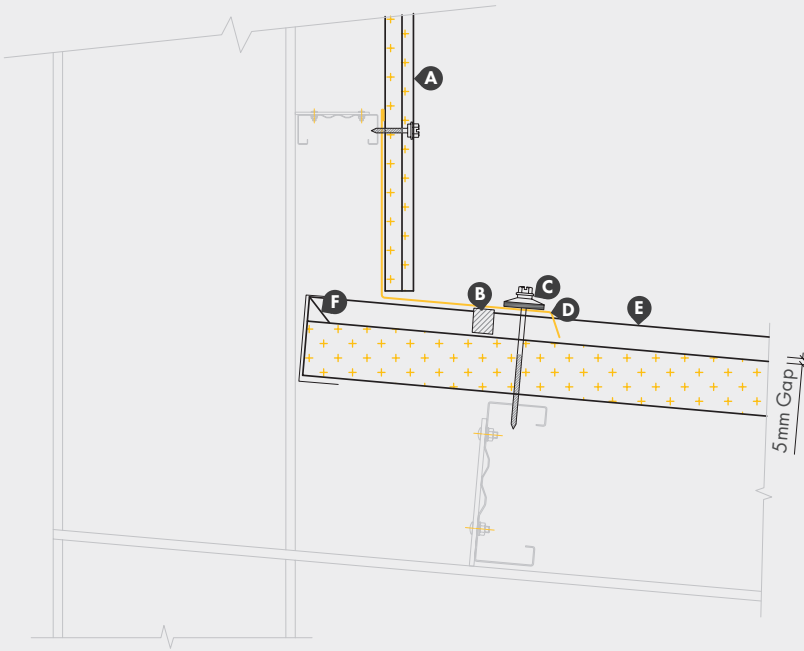
D06 HEAD APRON DETAIL



- A** Building paper
- B** Pressure bar
- C** Fill gaps with FR foam filler
- D** Freeman Group COLORSTEEL® closure flashing
- E** Freeman Group COLORSTEEL® apron flashing
- F** Profiled filler sealed top and bottom
- G** 25mm Embossed washer
- H** Freeman Insulated Roof panel
- I** Ridge notched into profile
- J** Purlin
- K** Position purlin to take fastener through landing edge of apron flashing

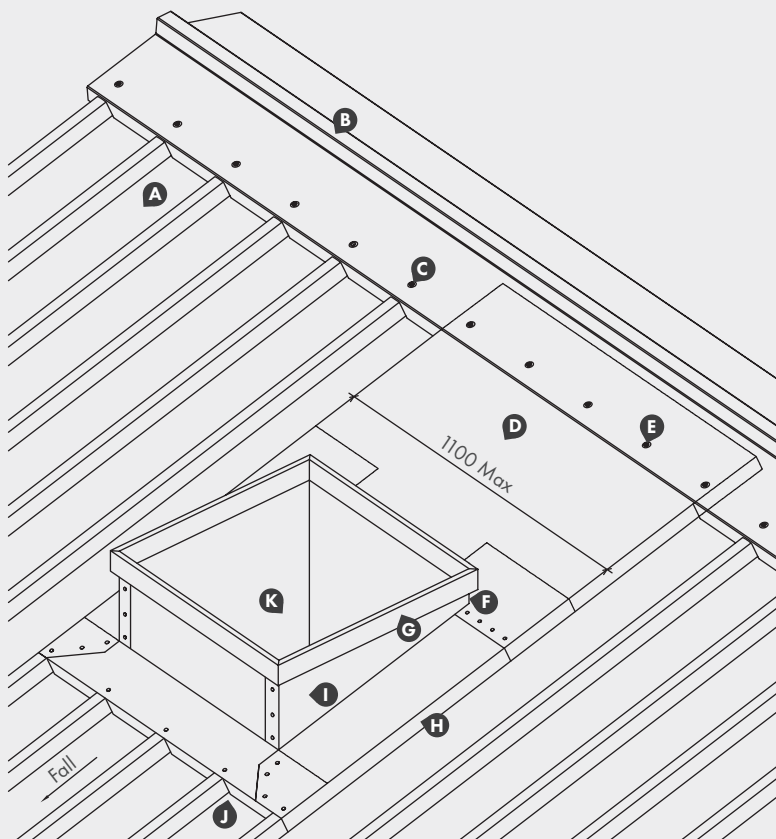
Note: Position purlin to take leading edge of flashing

D07 ROOF TO ROOF APRON DETAIL



- A** Freeman wall cladding panel
- B** Profiled filler sealed top and bottom
- C** 25mm embossed washer
- D** Freeman Group COLORSTEEL® flashing
- E** Freeman Insulated Roof panel
- F** Turn up panel end

D08 PENETRATION DETAIL SQUARE



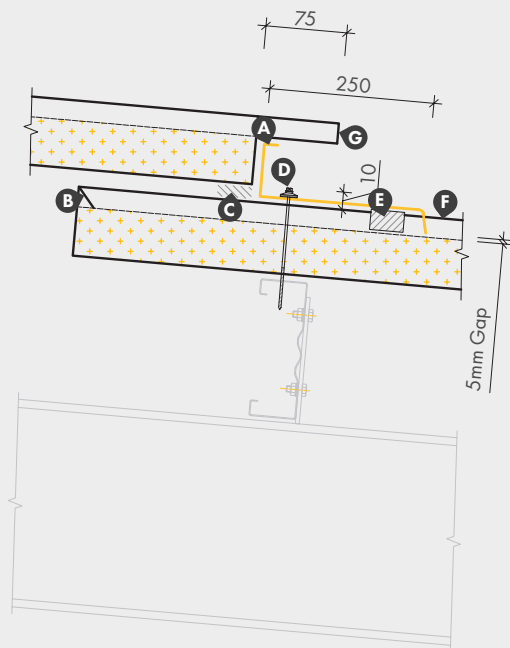
- A** Freeman Insulated Roof panel
- B** Ridge
- C** Self drilling screws with 25mm embossed washer
- D** Freeman Group COLORSTEEL® back flashing
- E** Screw to purlin
- F** Turn bottom edge of back flashing
- G** Freeman Group COLORSTEEL® cover flashing
- H** Turn down into trough
- I** Freeman Group COLORSTEEL® side flashing
- J** Flashing notched over ribs
- K** Size to suit penetration

Laying Sequence

Notched apron;

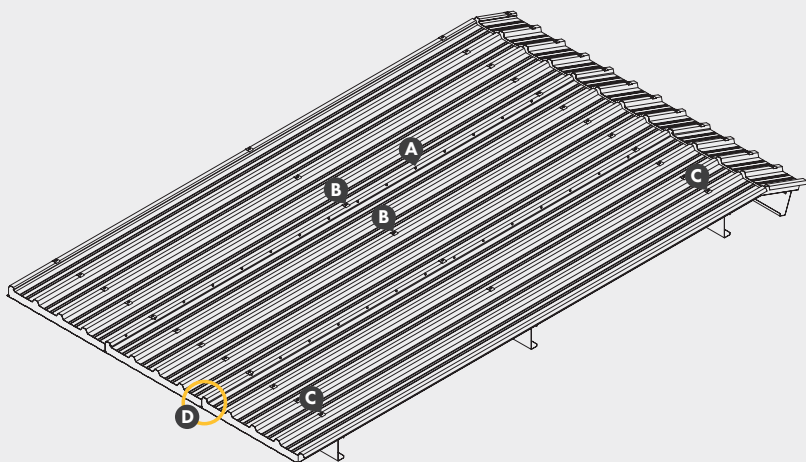
1. Freeman Group COLORSTEEL® side flashing
2. Freeman Group COLORSTEEL® back flashing
3. Freeman Group COLORSTEEL® cover flashing to suit penetration

D09 ROOF STEP DETAIL

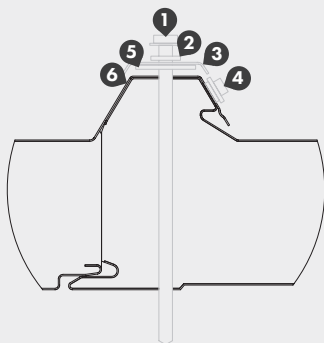


- A** Freeman Group COLORSTEEL® zed flashing
- B** Turn up panel end
- C** Fill gaps with FR foam filler
- D** 25mm embossed washer
- E** Profiled filler sealed top and bottom
- F** Freeman Insulated Roof panel
- G** Turndown (for roof pitch below 8°)

D10.1 FREEMAN INSULATED 4-RIB PANEL



Detail 'D'

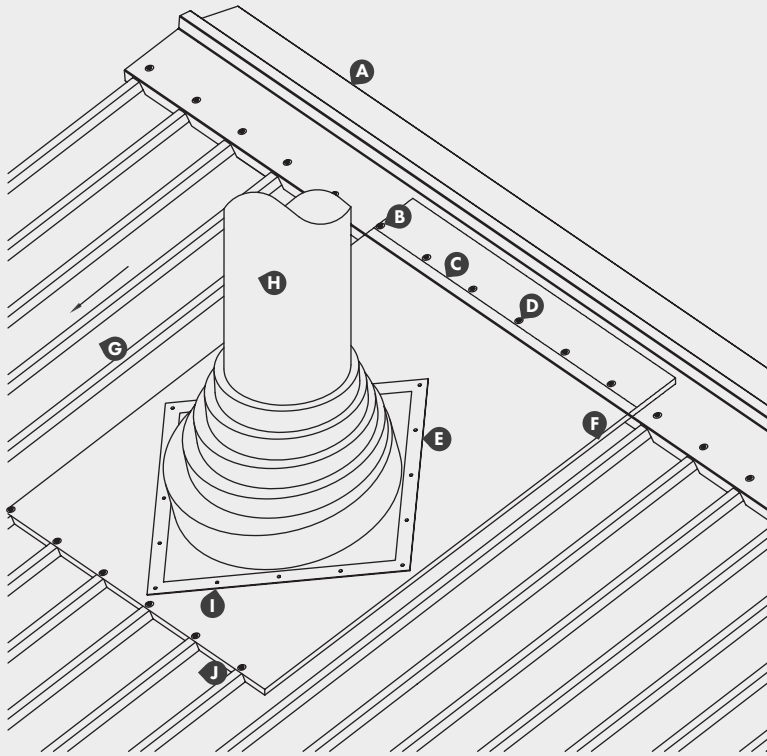


- A** Lap joins to be stitched with m6.3 x 22 class 4 multi stitch screws (or equivalent) with neoprene washers. Screws to be placed at 300 CRS along the side of longitudinal lap
- B** Intermediate fixings to be placed through both the lap-jointed rib and the centre rib and fixed to purlins
- C** Fixings to be placed through each rib at the top and bottom of each panel, and fix to steelwork
- D1** 14g Class 4 metal self drilling screw*
- D2** Neoprene washer
- D3** BB900 Profiled load spreading washer
- D4** M6.3x22 Class 4 multi stitch screw (or equivalent) with neoprene washer placed at 300 CRS
- D5** 6mm Continuous bead of MS construction sealant between lap joint
- D6** 36mm EPDM sealing washer

* Minimum screw lengths:

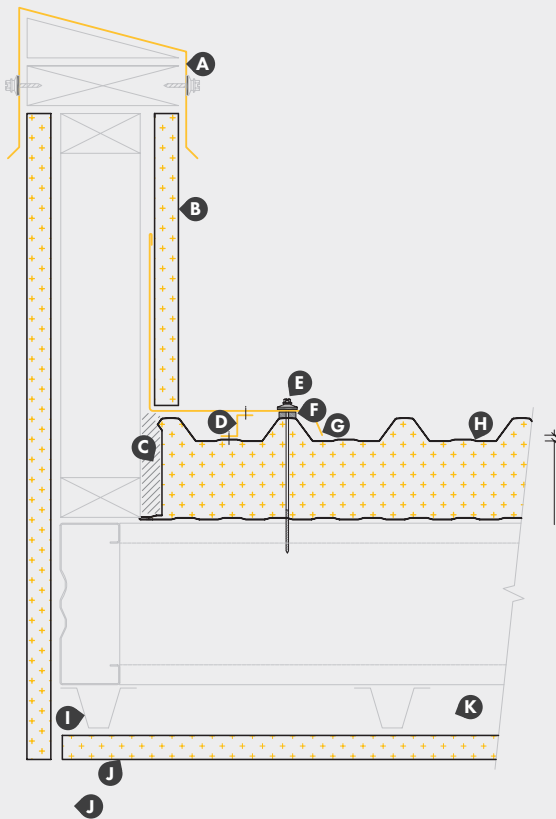
- 50mm roof panel - 110mm (HTS4141110N)
- 75mm roof panel - 135mm (HTS4141135N)
- 100mm roof panel - 160mm (HTS4141160N)
- 150mm roof panel - 210mm (HTS4141210N)

D11 PENETRATION DETAIL AROUND FLUE



- A** Ridge
- B** Self drilling fastener with 25mm embossed washer
- C** Fasten and seal
- D** Screw to purlin
- E** Seal and rivet
- F** Back flashing
- G** Freeman Group roofing panel
- H** Chimney
- I** Dektite flashing diagonal to run
- J** Flashing notched over ribs

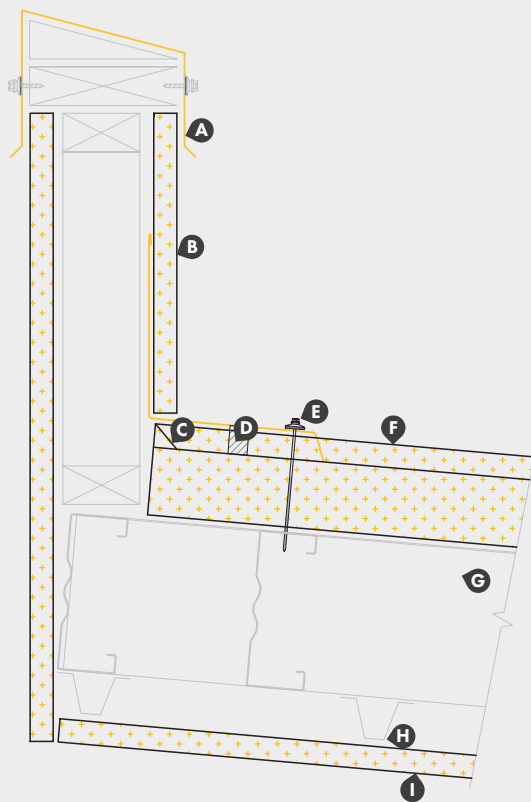
D12 PARAPET BARGE EAVE DETAIL



- A** Freeman Group COLORSTEEL® parapet flashing
- B** Freeman wall panel
- C** Fill gaps with FR foam filler
- D** Freeman Group COLORSTEEL® Z-Flashing continuously sealed top and bottom
- E** 25mm embossed washer
- F** Trimseal lap tape
- G** Freeman Group COLORSTEEL® parapet/barge flashing
- H** Freeman Insulated Roof panel
- I** Top hat section
- J** Freeman wall panel
- K** Roof support structure (by others)



D13 PARAPET APEX EAVE DETAIL



- A** Freeman Group COLORSTEEL® parapet flashing
- B** Freeman wall panel
- C** Turn up panel end
- D** Fill gaps with FR foam fill
- E** 25mm Embossed washer
- F** Freeman Insulated Roof panel
- G** Purlin
- H** Top hat section
- I** Freeman wall panel