



Zip-up standing seam roofing system

RIGIDAL
ZIPLOK

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An advanced zip-up standing seam roofing system with outstanding aesthetic properties



Renowned for their outstanding aesthetic properties and performance characteristics, standing seam roofing systems offer the specifier and contractor a cost-effective construction solution with numerous benefits.

Rigidal Ziplok is a BBA approved, advanced 'zip-up' standing seam system that creates a continuous weathertight roof. The side laps are 'zipped-up' in conjunction with a unique halter system that is fixed directly to the supporting structure without penetrating the external weather sheet. This method of secret fixing creates a structurally sound roof construction that provides excellent resistance to wind uplift.

Rigidal Ziplok can be manufactured on-site which allows roofs to be constructed using very long sheet lengths. This eliminates the need for any endlaps and considerably increases the speed of construction. Offering the ultimate in design flexibility, Rigidal Ziplok is available in aluminium or steel and can be smooth, crimped or concave curved; tapered or wave formed.

With dramatic changes to the Building Regulations upon us, Rigidal Ziplok standing seam systems easily comply with the stringent performance standards proposed over the next few years.



Features & Benefits

- Superior aesthetics
- No through fasteners - provides a continuous weathertight roof
- Curves to the tightest of radii
- Can be used on pitches as low as 1.5°
- Simple waterproof detailing
- Fully complies with proposed Building Regulations
- Micro ribbing can prevent ripples on smooth curves
- Internal liner can be smooth curved
- Very long sheet lengths - can be manufactured on or off-site
- Excellent resistance to wind uplift
- Fully integrates with rooflights and accessories
- Available in aluminium or steel
- Range of cover widths and finishes
- 30 year guarantee available
- Simple fast track installation
- BBA approved for various cover widths
- Also available as an insulated composite panel



The Rigidal Ziplok Roof Envelope Solution

Roof failure is the largest single source of litigation in the UK construction industry. Rigidal Ziplok overcomes the many issues that can seriously impair the performance and lifespan of metal roofing systems.

No Leaks

Leaking roofs are accountable for more roofing defects than all other issues put together. Secret fixing to avoid water penetration via the primary fasteners is a step in the right direction, but falls a long way short of providing a complete solution.

- Approximately 90% of all reported roof leakage is experienced within 10% of the total roof area at perimeter details.
- Regardless of the degree of fall on a roof slope hips, ridges and penetrations can all be a source of water ingress.
- Eaves/gutter junctions and verges on lower roof pitches can also become points of water entry.

Perimeter Detailing

Water ingress at perimeter details is avoided by overlapping and interlocking the upstand seams of Rigidal Ziplok sheets. This ensures that any water is directed towards the eaves and **not** back into the building.

For low pitch applications the eaves overhang on the topsheet can be turned down to increase the angle of run off by approximately 20°.

This is sufficient to prevent the possibility of water entering the building via the junction with the gutter.

At hip and ridge positions, the profile can be turned up to form an apex dam across the width of the panel. This detail and the standing seam side lap detail is then overlapped by the verge.

Secretly Fixed

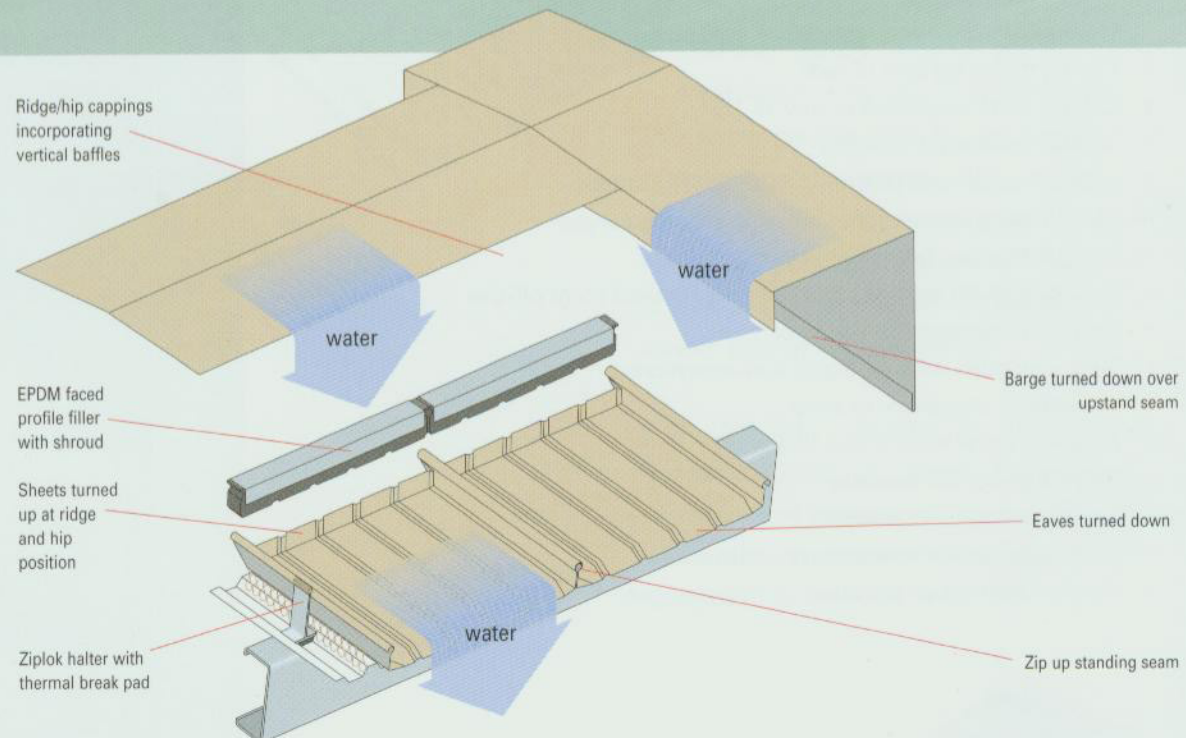
Rigidal Ziplok features a secretly fixed true standing seam side lap detail which provides a continuous weathertight roof and excellent protection in all weather conditions.



Long Lengths

Rigidal Ziplok is available in very long lengths and can be rolled on-site where sheet lengths exceed that which can be delivered by road. This eliminates the need for end laps and consequently the potential for water ingress.

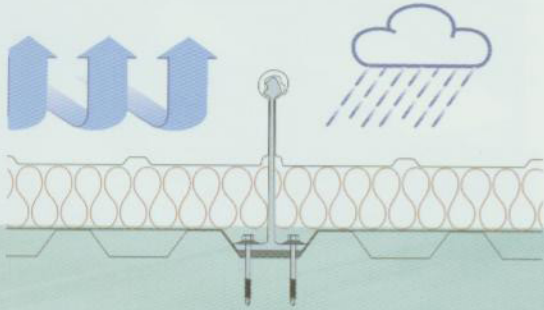
The unique design of Rigidal Ziplok addresses the problem of leakage without an over reliance on sealants or a myriad of components.



The Rigidal Ziplok Roof Envelope Solution

Outstanding Structural Performance

Structural performance is another major factor that can result in roof failure. Again Rigidal Ziplok provides an ideal solution to the most commonly experienced problems.

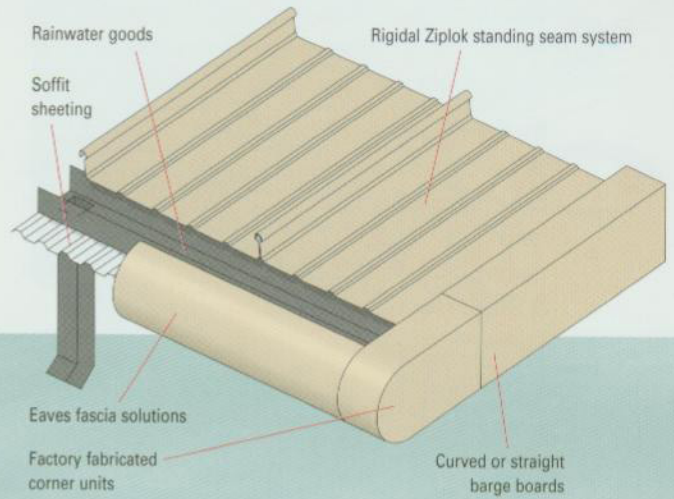


Halter combined with zip-up standing seam detail provides exceptional weathertightness and resistance to wind uplift

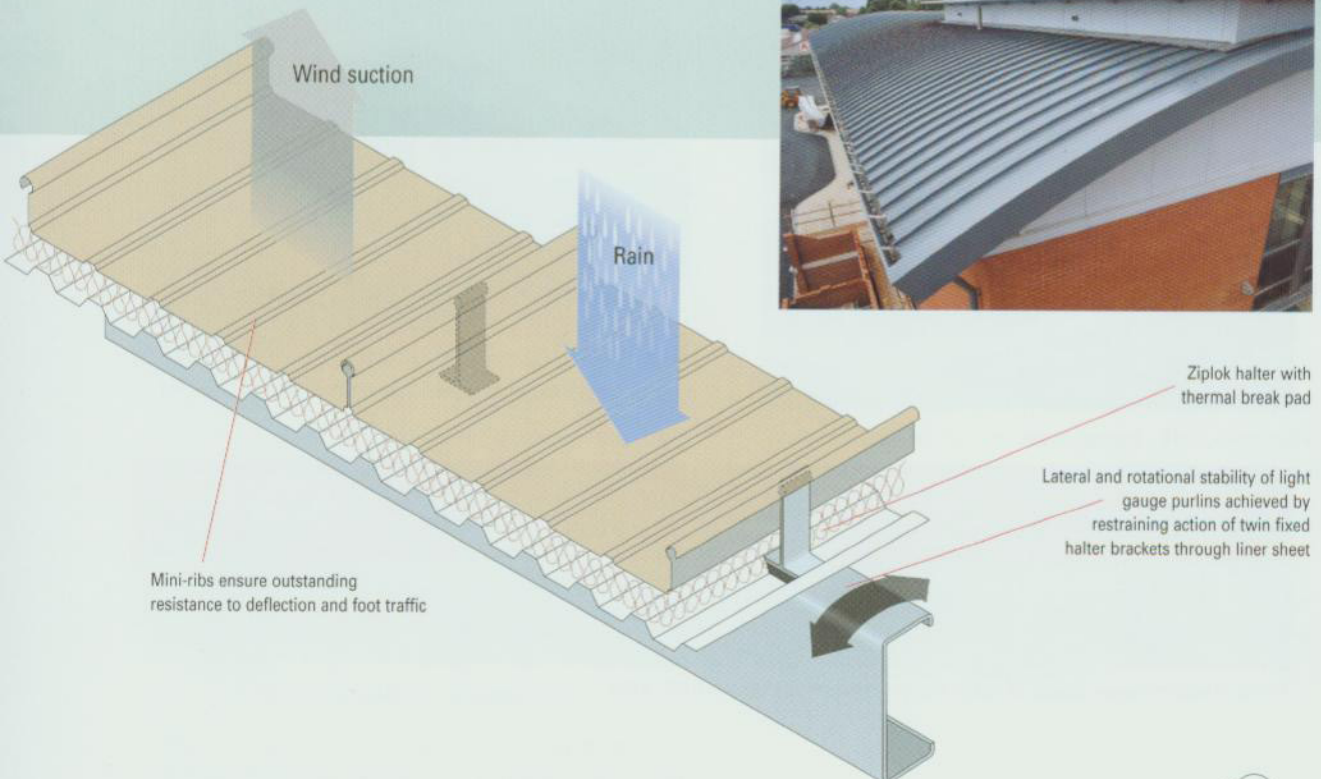
Wind Uplift

Rigidal Ziplok standing seam roofing systems provide excellent resistance to wind uplift due to their unique fixing method. The thermally broken halter firmly secures the roof system to the steelwork below. The strength of this joint and fixing detail is completed by 'zipping' the side laps together to create a secretly fixed roofing envelope with outstanding structural performance.

A complete Roof Envelope



A full range of integrated fascias, gutters and flashings are also available providing the designer/specifier with a complete 'one-stop' roofing solution. Made to individual specifications, all are designed to complement the outstanding aesthetic and performance standards of Rigidal Ziplok. Factory assembled rooflights and a full range of fasteners and fixings completes the comprehensive package.



The Rigidal Ziplok Thermal Solution

Half of the UK's CO₂ emissions are produced from energy used in buildings – this figure is slightly higher than the global average and reflects the effects of our climate, construction practice and the age of building stock.

Building Regulations

The present Government has pledged to reduce carbon dioxide emissions by 20% by 2010. As a result far reaching revisions to Approved Document L of the Building Regulations (England & Wales) have been proposed.

Three major areas of building design/construction are to be addressed:

- Significant increases in insulating performance standards (U-values) of buildings
- Increasing the standards of design detail and site workmanship to reduce the incidence of gaps in insulation and the effects of cold bridging.
- Raising the standards of fabric air tightness to minimise unwanted air change.

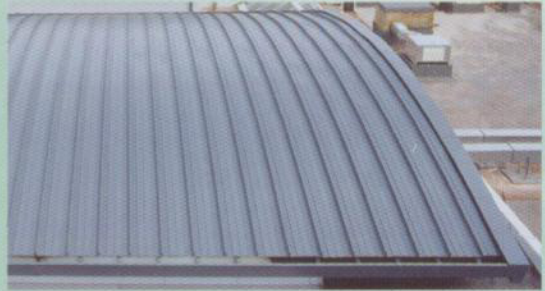
It is also proposed that mandatory testing including envelope pressure testing and thermographic surveys will be required to ensure compliance with these new standards.

Correctly installed Rigidal Ziplok standing seam systems easily meet and even exceed the challenge of these new Regulations.



Increased Insulation Levels

The construction of a Rigidal Ziplok standing seam system is virtually unaffected by the proposed increase in insulation levels. To accommodate the extra thickness of insulation the only change required will be an increase in the height of the halter.



Due to the zip-up side lap detail of Rigidal Ziplok with halters secured to the steelwork below, a structurally sound roof is created with excellent resistance to wind uplift. By their very nature standing seam systems provide a lightweight construction solution, which unlike steel composite panels will require very little change in site handling methods due to increased weight.

Implementation Date	Roof U-value W/m ² K	Rigidal Ziplok Standing Seam System Mineral Wool Insulation	Air Leakage Rate M ³ /hr/m ² @50pa
Present	0.45	100 mm*	Unregulated
2002	0.25	150 mm*	10m ³ Max Leakage

* Mineral wool insulation density 23 Kg/m³ Thermal conductivity λ-value = 0.037 W/mK

The Rigidal Ziplok Thermal Solution

Unwanted Air Change

As a result of convection, air movement through poorly sealed building envelopes is responsible for consuming high levels of energy through unwanted air change. This is thought to account for the highest proportion of heat loss in many UK buildings. Warm air leakage is also the primary cause of chronic condensation within a roof structure.



During the heating of a building it's performance is broadly similar to a hot air balloon as heating the air creates a pressure differential which 'inflates' the fabric of the envelope.

If the building envelope is leaking the higher pressure warm air will escape to the lower pressure external atmosphere and consequently more warm air has to be produced to compensate for the loss. On buildings this leads to greater levels of energy consumption and consequently higher CO₂ emissions.

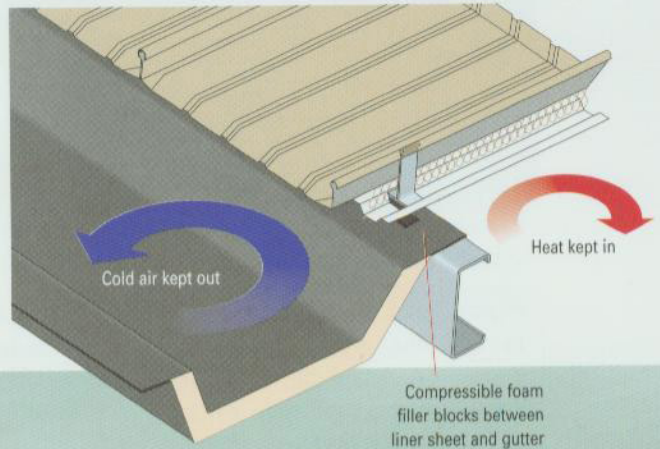


Air leakage wastes energy

Rigidal Ziplok standing seam systems are only installed by approved contractors who are trained by Rigidal to ensure the highest levels possible of workmanship.

The sealed vapour control barrier, which is laid over the liner sheet prior to the installation of the insulation, creates an airtight roof that easily complies with proposed air leakage rates.

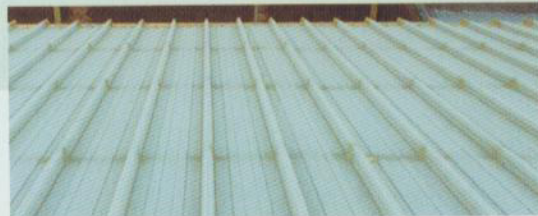
Rigidal Ziplok standing seam systems are self-venting and therefore eliminate any risk of condensation



Reducing energy loss will not only lower running costs and CO₂ emissions significantly, but will also reduce the actual cost of the building itself by scaling down the size of heating, refrigeration and air handling plant. Major food retailers and other building end users are already enjoying these benefits.

Continuity of Insulation

It is not unknown for traditional site assembled built-up systems to lack continuity and have gaps where insulation is missing. These systems however tend to utilise a 'Z' spacer system where it is more difficult to ensure continuity of insulation.



Heat loss through site assembled roof

With a Rigidal Ziplok standing seam system the external weather sheet is fixed to a series of halters, which easily allows the continuity of the insulation to be maintained. The thermally broken halter also minimises the incidence of any cold bridging.

By using Rigidal Ziplok standing seam systems installed by approved contractors, you can be confident that 'as built' performance matches the approved design specification.

Product Properties

Product Description

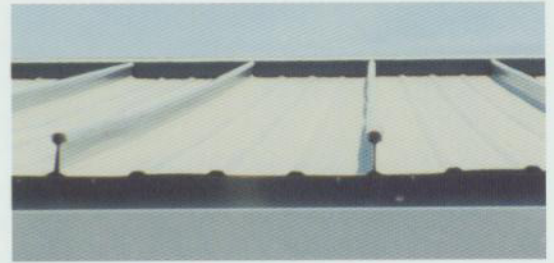
Rigidal Ziplok standing seam roofing systems are available in aluminium or steel, in cover widths[†] of 300, 400 and 500 mm. The side laps of the profile feature a zip-up standing seam detail, which hooks over a series of halters to create a continuous weathertight roof. The sheets can be manufactured on or off-site to almost any length, virtually eliminating the need for end laps.

Rigidal Ziplok can be curved to the tightest of radii to fulfil the most challenging design criteria, providing a structurally sound roof with excellent resistance to wind uplift.

Application

Rigidal Ziplok is designed for use in 'zip-up' standing seam roofing applications where the actual roof pitch is 1.5° or greater. Offering exceptional weather resistance and durability the product is suitable for both newbuild and refurbishment applications.

[†] In Dubai 300mm is the standard cover width. 400mm is also available, but 500mm has to be imported from the UK.



Ziplok Typical Weights - Aluminium

Profile Width [†] (mm)	0.9 mm		1.2 mm	
	Kg/m ²	Kg/lm	Kg/m ²	Kg/lm
300	3.87	1.16	5.13	1.54
400	3.53	1.41	4.70	1.88
500	3.34	1.67	4.44	2.22

Ziplok Typical Weights - Steel

Profile Width [†] (mm)	0.7 mm	
	Kg/m ²	Kg/lm
300	8.70	2.61
400	7.98	3.19
500	7.52	3.76



Product Tolerances

Cover Width (mm)	+/-2
Edge Squareness	1% of sheet cover width
- Up to 10m Long	+10mm/-5mm
- Over 10m Long	+10mm+ (1mm per metre length over 10m)/-5mm

Product Dimensions

Nominal Gauge (mm)	0.7*, 0.9**, 1.2**
Panel Length (m)	1.5 to any desired length***
Effective Cover Width (mm)	300, 400, 500

* Steel.

** Aluminium.

*** Can be manufactured on or off-site. Factory manufactured up to a standard length of 27m.

Please contact our Technical Department for further information.

Product Properties

Fire Performance

Rigidal Ziplok standing seam roofing systems achieve the following results that enable them to achieve a Class O rating as classified by Building Regulations.

Test	Result
BS476 : Part 3 : 1975 External fire exposure roof test	FAA/SAA
BS476 : Part 7 : 1997 To determine the classification of the surface spread of flame of products	Class 1 Rating for aluminium/steel inner/outer metal facings

Acoustic Properties

The Rigidal Ziplok standing seam roofing system has the flexibility to meet the acoustic requirements of most buildings. For further information, please contact our Technical Department.

Standards & Approvals

Rigidal Ziplok is produced to the highest quality standards including BS EN ISO 9001 : 1994. The product has been designed to fulfil a specific application and has been manufactured to precise standards and tolerances. Its use is covered by BBA Certificate 99/3605.



Certificate No: 910442/A

Guarantees & Warranties

Rigidal Industries will provide a product warranty and guarantee on the internal and external coatings on a project by project basis. For further information, please contact our Technical Department.

Packaging

Rigidal Ziplok is packed with polyurethane insulation strips between each sheet and banded with timber.

Fully timber crated packs are available for projects where delivery is required by sea freight.

Delivery

Unless otherwise indicated all deliveries are by road transport, direct to the project site. Shipping by sea freight is subject to an additional cost.



Site Installation

For instructions on site installation please contact our Technical Department.

Metal Top Sheet

The external weather sheet is available in either 3000 series aluminium or pre-painted Z275 galvanised steel with the following finishes:

Stucco embossed plain mill finish aluminium - 'Plain mill finish aluminium is normally expected to last the life of the building without maintenance' - BS 5427 : 1976.

PVF2 - provides a long-term aesthetic life of approximately 20 years on aluminium, offering excellent durability and colour stability. Also available as a steel finish with a minimum life to maintenance of 15 years due to the steel substrate.

ARS - abrasion resistant coating for aluminium with good handling characteristics.

Plastisol - high performance coating for steel substrates.

Polyester - a cost effective colour coating with a medium term life for both aluminium and steel.

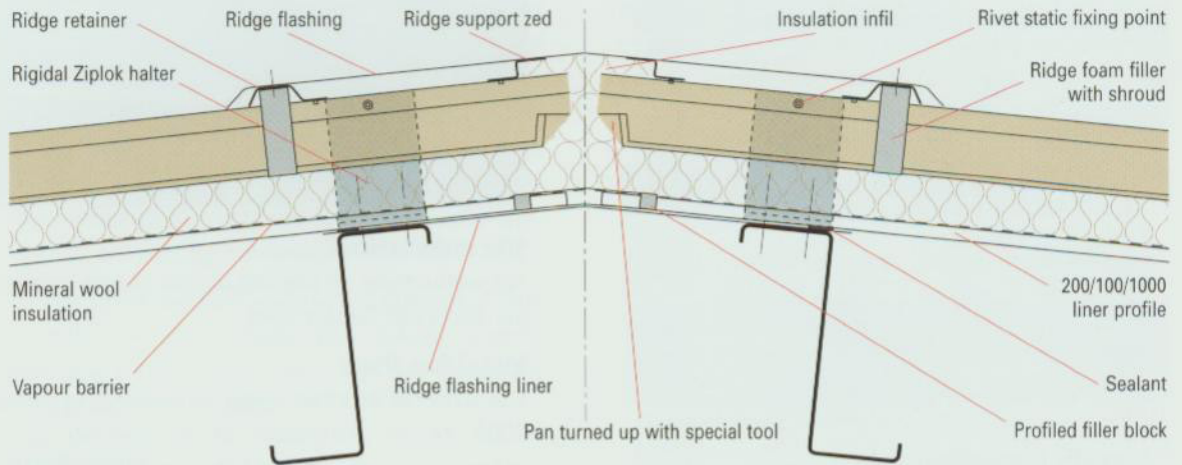
Durability of Coatings

The durability of a metal coating is determined by geographical location, local environment and the colour selected. The information given above is intended as a general guide for locations in the UK. For further information please contact our Technical Department or the relevant coatings manufacturer.

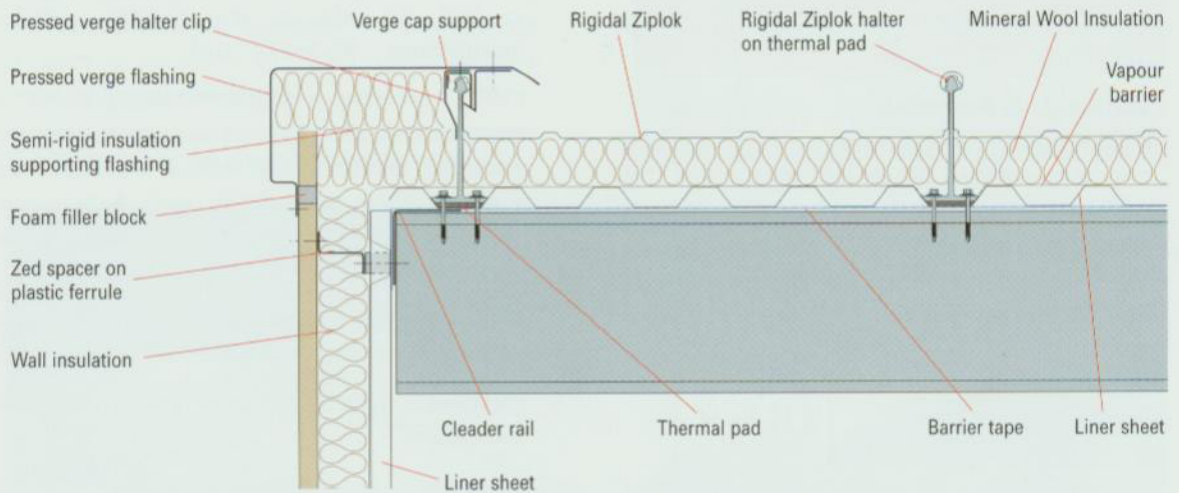


Construction Detail Solutions

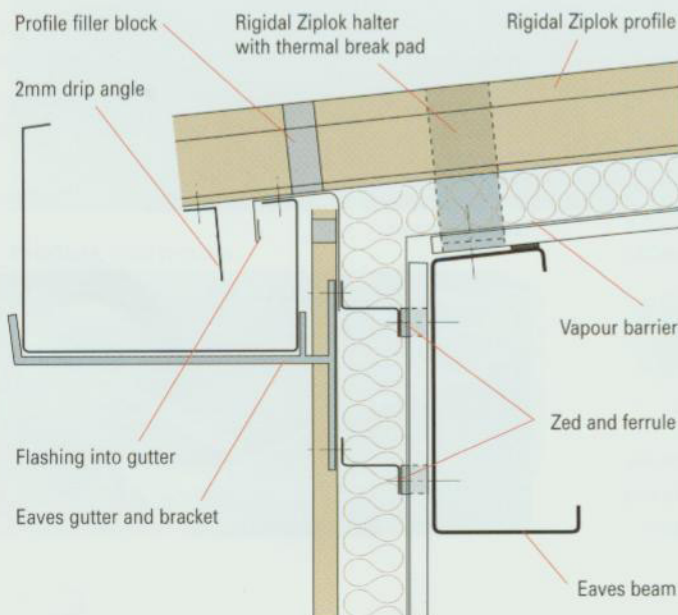
Ridge Detail



Insulated Verge Detail



Eaves Detail



Load Span Tables – Rigidal Ziplok 300 & 400 Systems

Rigidal Ziplok 300 0.9mm Aluminium (self weight 3.87 kg/m ²)								
Span (m)	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
Download	2.45	2.45	2.45	2.37	1.75	1.37	1.00	0.75
Wind Uplift	3.40	3.40	3.40	2.90	2.40	2.10	1.75	1.20

Rigidal Ziplok 300 1.2mm Aluminium (self weight 5.13 kg/m ²)								
Span (m)	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
Download	3.25	3.25	3.25	2.75	2.48	1.87	1.40	1.10
Wind Uplift	3.40	3.40	3.40	3.40	3.20	2.70	2.40	1.60

Rigidal Ziplok 400 0.9mm Aluminium (self weight 3.53 kg/m ²)								
Span (m)	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
Download	1.87	1.87	1.87	1.75	1.37	1.00	0.75	0.55
Wind Uplift	3.00	3.00	2.58	2.20	1.91	1.56	1.25	0.95

Rigidal Ziplok 400 1.2mm Aluminium (self weight 4.70 kg/m ²)								
Span (m)	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
Download	3.00	2.70	2.30	2.00	1.70	1.46	1.08	0.81
Wind Uplift	3.00	3.00	3.00	2.90	2.50	2.10	1.80	1.50

Rigidal Ziplok 400 0.7mm Steel (self weight 7.98 kg/m ²)								
Span (m)	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
Download	3.40	3.07	2.75	2.50	2.15	1.65	1.20	0.80
Wind Uplift	4.00	3.90	3.25	2.75	2.40	2.10	1.75	1.45

All loads are characteristic working loads in kN/m² based on 4 or more spans

Download figures based on a deflection limit of span / 200

Wind uplift figures based on a deflection limit of span / 90

Loadings take account of Rigidal Ziplok sheet pulling out of the halter bracket under wind uplift using the formula:

$$P \text{ (max)} = 1.15 \times C \times L \times W$$

Rigidal Industries

Rigidal Industries offer the most comprehensive range of aluminium and steel cladding products available in today's construction market. All Rigidal products are produced to the highest quality standards and designed to fulfil specific applications.

C = cover width of sheet (m)

L = spacing of the brackets along the sheet (m)

W = wind uplift loading (kN/m²)

Safe load on bracket (P) = 2.80kN
(0.7mm steel / 0.9mm aluminium sheet)

Safe load on bracket (P) = 3.10kN
(1.2mm aluminium sheet)

The Rigidal range includes the following cladding options for roof and wall applications:

- Composite Panels
- Standing Seam Systems
- Composite Standing Seam Systems
- Profiled Cladding
- Fastening Systems & Accessories
- Metal Roofing Components
- Rooflights