

SPACER SYSTEMS



SYSTEM HANDBOOK

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ESTABLISHED IN 1864 AND ONE OF THE OLDEST COMPANIES
IN THE MIDLANDS

The name Ash & Lacy is synonymous with Product Innovation and Engineering Excellence, keeping us at the forefront of building systems engineering and technology.

Thanks to progressive development of our own manufacturing capabilities, construction professionals can procure complete and effective **envelope solutions** from a single-source.

Our extensive, state-of-the-art product range is fully supported by our unrivaled in-house technical and **design expertise**, freely provided at every stage of planning and construction, together with our full site warranty schemes.

From Standing Seam **Roof** and Rainscreen Cladding **Façade** and **Screen** systems, architectural **Fabrications**, **Spacer System** and **Fixings** range, through to our most recent **Frame** system innovation, all products undergo rigorous testing. They consequently offer exceptional performance and value, supported by best-in-class service and technical support.

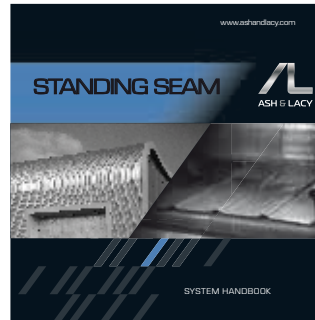
This system handbook provides extensive information on our **Ashgrid Spacer Bar** system that complements our range of product categories. As part of a series of technical handbooks, this publication gives you advice on how to order, supply and install the **Ashgrid Spacer Bar** system.



AshGrid is an integral part of our standing seam system, and was the UK's first spacer support system of its type. We continue to lead through innovation, with the unique Safe-Loc detail incorporated within the AshGrid bar.

Our spacer systems are varied in depth to deal with varying U value requirements, with bracketry spacing being adjusted depending upon the project specific loading requirements. This makes site installation safer and more efficient through engineered project design. AshGrid can also be supplied with our engineered ABV brackets to provide additional strength where deeper, more robust constructions are needed.

Ashgrid can also be used with a wide range of other cladding products. Assistance can be offered determining bracket support centres and U value build up requirements.



A superior quality raised standing seam roofing and cladding system that enhances aesthetics and provides a weather tight joint above rainwater flow. The perfect choice for an exceptionally wide range of new build and refurbishment roofing and vertical façade applications from residential, industrial, commercial and public projects to modular new build.

Available in a range of cover widths and a generous palette of material and colour finishes for optimum architectural design flexibility. Can also be specified with a steel frame solution, designed on a project by project basis, to form a pitched/curved roof above new or existing flat roofs.



The cold rolled Steel Frame range offers a structurally robust and dimensionally stable, warm spaced wall construction that can be used with the majority of external finishes, across most applications.

This component supply, structural stud & track system, is available to suit both infill and oversail systems, both of which provide early weather protection capability to the building, and offer many advantages over traditional construction methods.

State-of-the-art custom built in-house manufacturing facility offers flexibility to best suit site requirements and restrictions, offering components either cut to length or standard stock lengths, both of which can be individually marked allowing easy identification, thus resulting in faster installation.



Our bespoke perimeter flashings and fabrications are available in a range of finishes and materials ranging from pre-coated steel to PPC aluminium to perfectly complement our standing seam system or facade panels. We can also provide a full range of ancillary components, such as fabricated stop ends and corner units.

We offer a similarly tailored service with our rainwater management components. Choose from a wide selection of materials from coated galvanised steel to high quality membrane lined options. Our range of ancillaries includes outlets, downpipes, bracketry and fabricated stop ends. A gutter calculation service is available, following order placement.



Our comprehensive selection of roofing and cladding fixings provides quality solutions for almost any application. The range has evolved through extensive research and development, on-site experience and extensive 'real world' testing and engineering.

As a result Ash & Lacy offer unrivalled product quality and performance, with stainless steel, carbon steel and colour headed options, providing the ultimate fixing solution for light/heavy section and timber applications.



A fully engineered fast-track solution perfect for the enclosure of open spaces such as car parks and stair towers, improving aesthetics and providing a permanent and impenetrable barrier.

These component supply or fabricated systems transform virtually any structure due to its availability in a wide range of attractive materials, patterns and finishes. Straight or curved panel options, including the use of different panel types and finishes in the same elevation, provide tremendous architectural design versatility.

State-of-the-art custom built in-house manufacturing facility offers flexibility to best suit site requirements and restrictions, offering tailored solutions to specific architects requirements.



The Ash & Lacy Rainscreen Cladding Façade System out-performs other types of wall construction at an economic whole life cost, with low maintenance requirements and sustainable material options, backed by our renowned technical and fabrication expertise.

Including full through wall construction system this multi-layer system can be fabricated from ACM (Aluminium Composite Material), solid aluminium, Cor-Ten steel, copper or zinc to create a ventilated 'cold' façade fixed to an adjustable aluminium carrier system.

Choose from a wide selection of vertical and horizontal joint configurations in a variety of colours and finishes.

As part of our programme of continuous innovation, Ash & Lacy introduce the high performance Ashgrid bar and brackets incorporating the unique Safe-Loc™ feature (patent applied for). Designed to meet the ever-increasing demands from Building Regulations whilst at the same time making installation more efficient and safer for contractors on site.

All spacer support systems are at risk during the installation stage when they are not restrained by the sheeting and are subjected to forces from foot traffic, temporary loading and high winds.

Accurate, close fitting and reliable bar connections are also required to ensure the stability of any spacer support system during construction with some systems even having to rely upon screw fixings to prevent their bars from separating**.

The Ashgrid Safe-Loc™ spacer support system addresses these issues through a combination of innovative design features which improve system stability, safety and ease of construction, reducing installation time and costs when compared with other spacer support systems.

The enhanced AG40 spigot design with its innovative Safe-Loc™ feature (patent applied for) provides stability and peace of mind at the click of a tab. This prevents the Ashgrid bars from separating during the installation process ensuring safe, precise engaging as well as quicker installation. The AG40 bar is widely acknowledged to be of superior quality and is produced to exact engineering tolerances. With the spigots pushed home in one quick and easy action, the Safe-Loc™ tab engages, providing the added security benefit of an automatic inter-lock between the bars every time. Once engaged, the bar ends cannot be accidentally or unintentionally separated ensuring the system remains stable and secure during the

critical installation stages. Nevertheless, the joints can be 'unlocked' if the need arises.

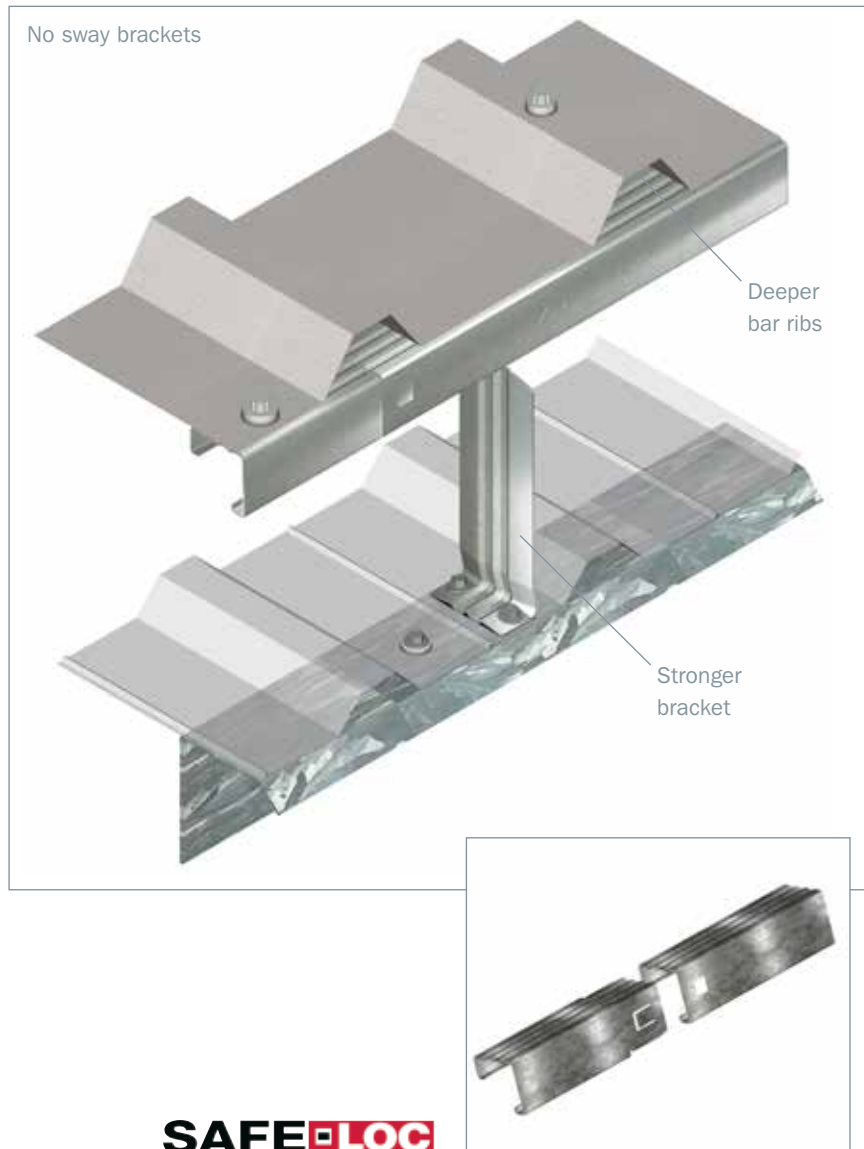
The enhanced bracket design with deep ribs further increases the performance of the Ashgrid system, removing the need for anti-sway brackets at construction depths below 250mm*. Ashgrid Safe-Loc provides more benefits to the installer with fewer components, faster installation times and reduced system costs.

The time proven 'twist-lock' feature of the Ashgrid brackets still remains as popular today as always. With its easy slide and twist action from the bar ends, or engage and twist to fit at any point along the bar. The fitting of the brackets is simplicity itself and the quickest in the marketplace, easy from first to last with a minimum of force required. The brackets are also just as easy to disengage and re-position if necessary.

An ongoing programme of research and development into the system, the first engineered spacer support system in the UK, has ensured Ashgrid has remained an optimum solution for a wide range of roofing applications.

**In line forces can be transmitted through the joint without the need for screw fasteners.

* For exceptional site loading conditions and for heights above 250mm advice on performance should be sought from the Ash & Lacy Technical Department.

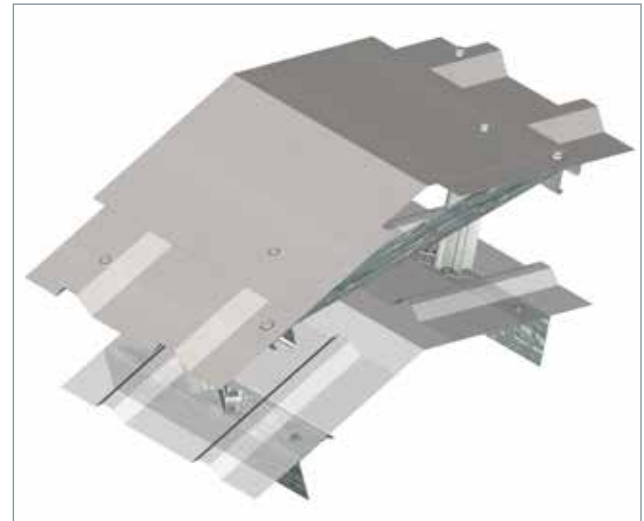
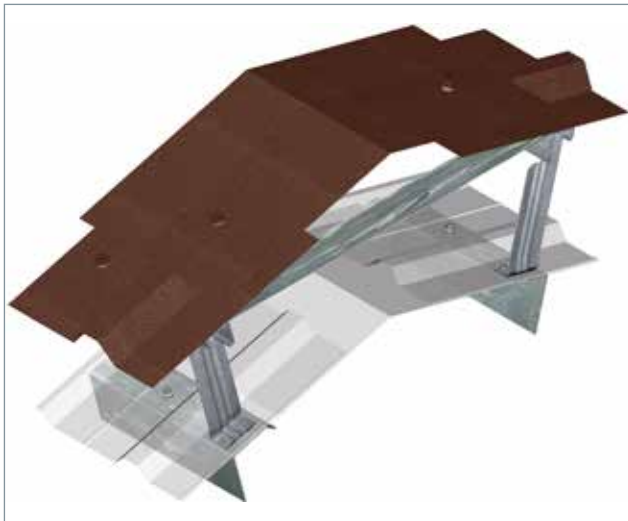


- Safe-Loc™ spigots – fast, secure and safe bar joints
- No need for bar end fixings – saving time and cost
- Raises the standards for spacer support systems
- Maximum spigot efficiency is always achieved and a consistent module maintained
- Allows continuous load transfer throughout the bar run
- high performance brackets with deeper ribs for improved structural performance
- No requirement for anti-sway brackets below 250mm* construction depth
- Quick, easy and safe insertion of brackets from the side or from the bar ends
- Brackets can be easily repositioned if required
- Deep ribbed bar, ensuring optimum fixing efficiency for the top sheet
- High fixing torque and increased pull-out strengths achieved
- Full range of roof, wall cladding and firewall solutions
- Comprehensive and experienced technical backup with nationwide distribution

With roof constructions ever increasing in depth there is a tendency for the support system to rotate down the slope by the action of the roof loading. To prevent this, the ridge brackets must be fully tied together as illustrated. Screw fixing the end and side laps of the roof sheet ensures continuity. This enables each roof slope to act as a stress plate hanging from the fixed ridge detail and reduces any downslope movement.

The steel strap should be bent over and around the AG40 bar and fixed to the small flange using two screw fixings.

To eliminate any out of balance forces it may be prudent to sheet both slopes in unison, gradually working up to the ridge detail.



Note

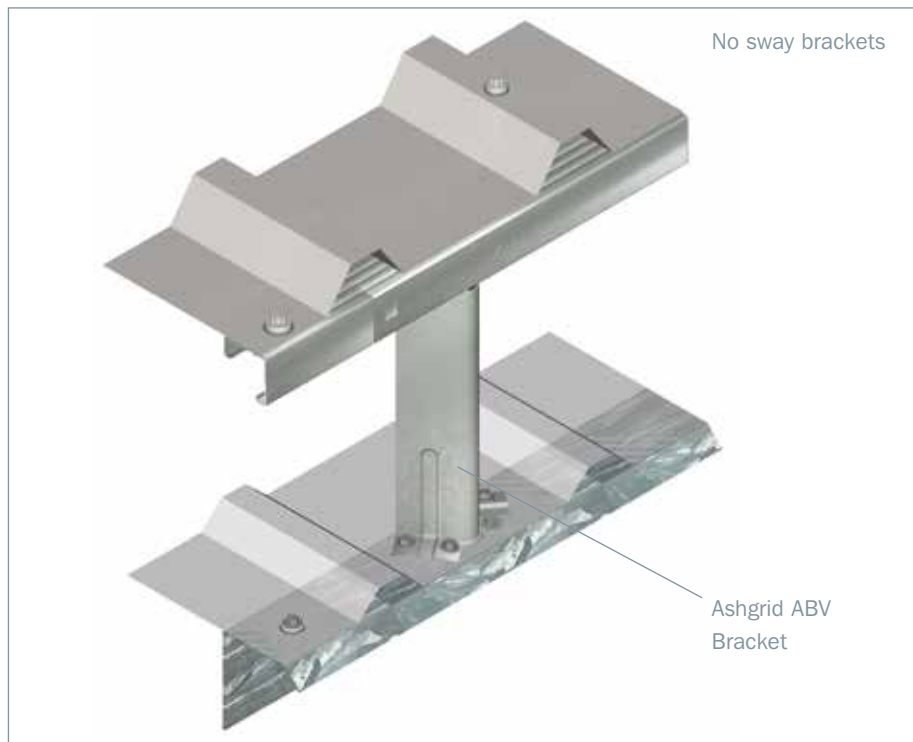
It is preferable that the Ashgrid brackets either side of the ridge are installed in line.

Ash & Lacy have developed a new generation of spacer brackets, using the original Ashgrid bar, still the market leader after so many years.

The Ashgrid ABV Bracket, incorporates four points of contact onto the bar, maximising stability and adding the strength required for deeper cavities. Bracket heights up to 400mm are available, and further enhancing the performance of the standard Ashgrid brackets. Four points of fixing into the support structure, are also incorporated.

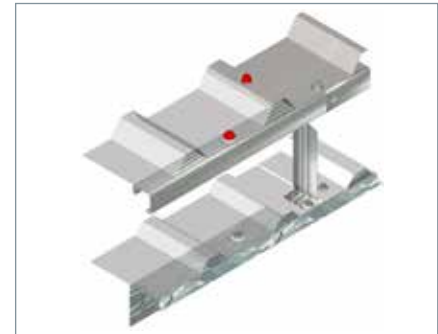
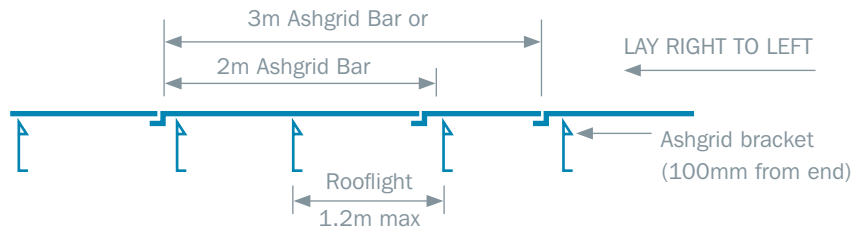
The Ashgrid bar is the most efficient section available, for this application, and for that reason, it has been retained. The new Ashgrid ABV Brackets are manufactured from 1.6mm thick galvanised steel and the whole system can be either pre-assembled, or the bar can be snapped onto the brackets, after they have been fixed and the insulation laid.

Bracket depths are available from 240mm to 400mm in increments of 20mm, to suit any 'U' value requirement. Furthermore, due to the exceptional strength of the Ashgrid ABV Brackets, sway brackets will not be required.



A rooflight build-up conforming with the requirements of ADL 1&2 requires the Ashgrid brackets to be installed either side of the module, resulting in the Ashgrid bar spanning 1200mm as shown below. To maintain the structural adequacy of the bar, we would recommend either a 2m or 3m length of bar positively fixed with the new Safe-Loc™ feature to provide the continuity required over the central rooflight zone.

In areas of high wind suction loads or heavy drifting snow the bar is further reinforced with a top hat 40 section. This sits tightly over the Ashgrid AG40 for a distance of 1500mm over this bay and is screwed to the bar at 500mm centres along its length. For further information, please contact our technical department.



	Bracket centres along bar (m)	Direction of loading	Purlin Centres (m)					
			1.00	1.20	1.40	1.60	1.80	2.00
			Loading in kN/m ²					
AG40 BAR	1.0	Download	2.23	1.86	1.59	1.39	1.24	1.12
		Uplift	2.55	2.13	1.82	1.59	1.42	1.28
	1.1	Download	1.84	1.54	1.32	1.15	1.02	0.92
		Uplift	2.11	1.76	1.51	1.32	1.17	1.05
	1.2	Download	1.55	1.29	1.11	0.97	0.86	0.77
		Uplift	1.77	1.48	1.26	1.11	0.98	0.89
AG40 BAR WITH TH40	1.0	Download	3.00	2.50	2.14	1.88	1.67	1.50
		Uplift	3.00	2.50	2.14	1.88	1.67	1.50
	1.1	Download	2.73	2.27	1.95	1.70	1.52	1.36
		Uplift	2.73	2.27	1.95	1.70	1.52	1.36
	1.2	Download	2.50	2.08	1.79	1.56	1.39	1.25
		Uplift	2.50	2.08	1.79	1.56	1.39	1.25

Notes

- All loads are working loads
- Steel based on Z35 material
- Download deflection = span/200
- Figures limited to a bar/bracket connection load of 3kN
- Pull-out of screws into purlin assumed to be 3kN
- Ultimate bending stress is based on a load factor of 1.6

Provision for loading out

Ashgrid is strong enough to support all the design working loads relevant to the building cladding system in accordance with our recommendations. However, during the course of construction the spacer system may be subjected to abnormal and/or concentrated loadings from various sources such as, walkway boards, foot traffic, construction materials and heavy sheet packs, often up to two tonnes in weight. This is likely to be when the system is less stable, with relatively few brackets being fixed, and without the restraint that the fixed outer sheet provides.

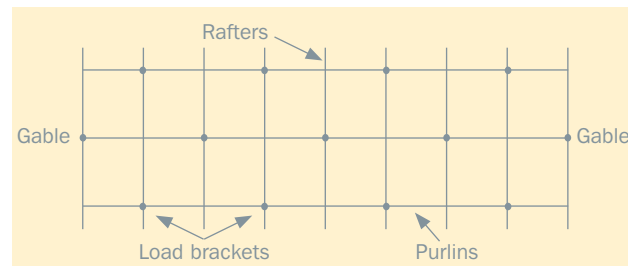
Lack of attention to the need for supporting abnormal loading could cause partial collapse. The engineered solution is to use an Ash & Lacy heavy duty load bracket as and when required. These brackets are made from 3mm thick galvanised steel and are of suitable height for the chosen system. They are fixed by two standard fasteners through the base and into the roof purlin and through the head of the bracket in to the side of the Ashgrid bar using two standard fasteners. Forward planning may allow the positioning of the load bracket in lieu of a standard bracket position, thereby saving the cost of the Ashgrid bracket. Thus the load bracket will support a vertical load of 1 tonne. Heavy loads should be located on the roof over the line of the main rafter. (Mid span loads could adversely affect the roof purlins.)

If the construction load positions are not known, then load brackets could be positioned over the rafter on alternate purlin lines in a staggered pattern and thus giving more freedom to loading out.

Other means of load support have been adopted, such as timber packers, and whilst these can be effective, they are obviously less engineered and should be used with caution,

and at the contractors risk as they have been known to move and lead to failure.

Load Bracket Arrangement



U-Value Requirements

U-values W/m ² K	Roof	Vertical Walls	Horizontal Walls (BX48)
0.16	280	-	-
0.18	240	-	-
0.20	220	210	-
0.25	180	170	180
0.26	170	160	180
0.35	130	120	140

Notes

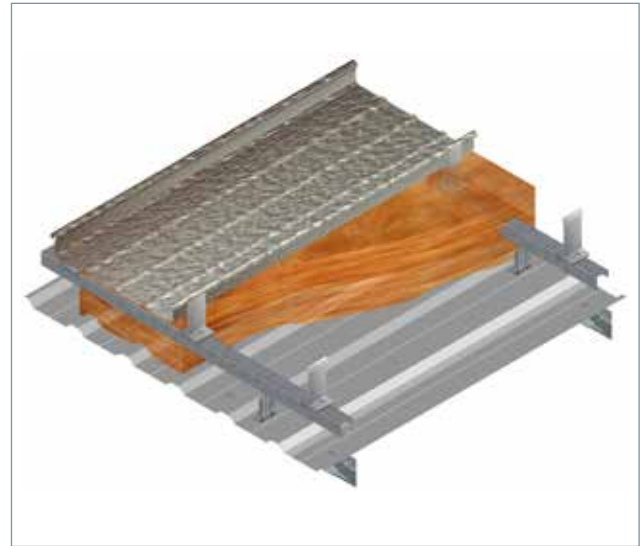
- All values are for insulation thickness and cavity depth
- Ashgrid brackets assumed to be at 1.0m centres
- Purlin/Sheeting rail centres assumed to average out to 1.2m
- BX48 Rail centres assumed to average out to 1.5m

The Ashgrid spacer support system can be used in conjunction with a traditional standing seam halter system as a method of achieving a U-value of 0.25 W/m²K in compliance with the requirements of ADL1&2.

In a typical standing seam build-up, aluminium halter are generally fixed at 400mm centres which repeatedly bridge the roof construction. The increased thickness of insulation required to compensate for this additional heat loss greatly increases the overall construction depth.

By incorporating an Ashgrid spacer support system into the roof build-up, the effects of repeated thermal bridging are reduced as the support brackets are fixed at 1m centres. This enables a reduced thickness of insulation to be used, creating a roof construction that is structurally sound and easily meets the required thermal performance criteria.

The use of the Ashgrid spacer support system also allows greater flexibility in the choice of liner profile as unlike a traditional standing seam halter, the Ashgrid brackets can be spaced accordingly.



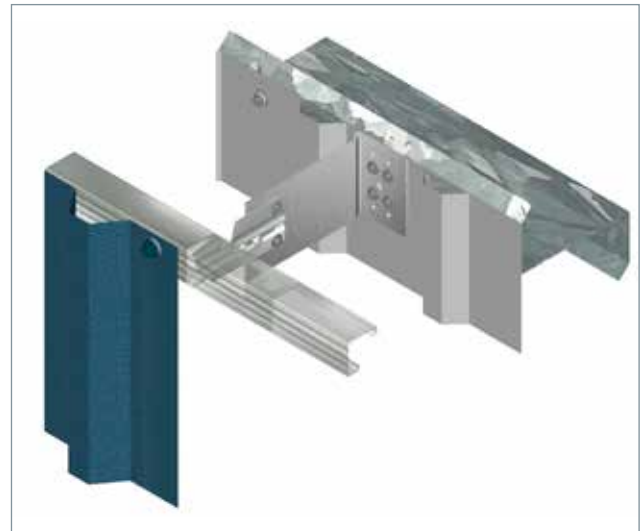
For bracket depths of up to 200mm, the standard Ashgrid system may be used with brackets at 1m centres maximum with reduced centres in high wind suction zones if necessary.

For constructions over 200mm in depth please refer to the Ash & Lacy Technical department for guidance. For deeper constructions or where higher vertical loads are expected, the AF-adjustable system may be used which incorporates a substantial 3mm thick AJC galvanised cleat bolted to a slotted ABF bracket offering sideways adjustment.

When the depth is set the ABF bracket is fixed with 2 No. screws to create a rigid connection. The full assembly is fixed back to the rail flange with 4 No. fixings. Using different components a range may be achieved from 100mm up to 360mm deep inclusive.

Note:

For both cladding systems the liner and rail construction must be rigid enough to take the various bracket systems and dead and bracing loads.



Horizontal sheeting presents the designer with problems of alignment and support. Ash & Lacy have developed systems for longer spans, to ensure that the horizontal sheeting is adequately supported, and the applied wind loads are properly transmitted to the supporting structure.

When fixing horizontal sheeting, it is essential to ensure that a line is maintained, as the cladding sheets will have a tendency to 'roll' outwards, creating a sag between the supports.

BX48 System

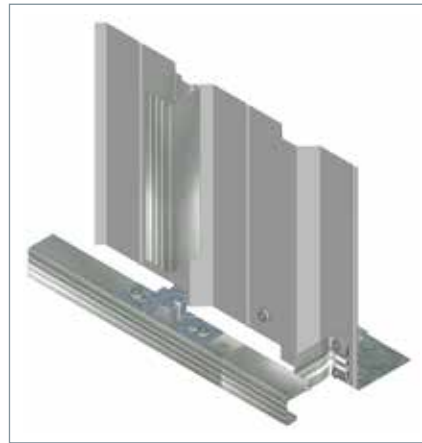
The BX48 System has controlled the fixing locations in such a way that the deadloadings are effectively reduced back to the rail face to ensure minimal rotation effect. (The movement is developed and then absorbed in the Ashrail bracket connection).

- Unique and true integrated system
- Fully engineered system
- Works in combination with and approved by major side rail manufacturers
- Ribbed, efficient box bar section to span up to 2.2m
- Easy labour saving spigot to extend bar lengths (no screws necessary)
- Unique pivot bracket for ease of fixing
- Brackets are hinged and available to suit cavities from 120-200mm
- Provides quicker installation – reduced amount of components
- Labour saving single man fix possible

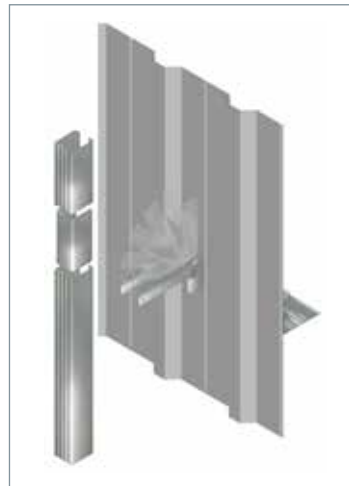
Setting out

- Ashgrid is used to create the all important level base for the vertical bars

- AFT Connectors used to secure vertical bars to the horizontal Ashgrid
- The weight of the vertical bars is retained at the bracket locations



Hinged bracket provides easy access for fast installation. Range of hinged Brackets to suit cavities from 120-200mm.

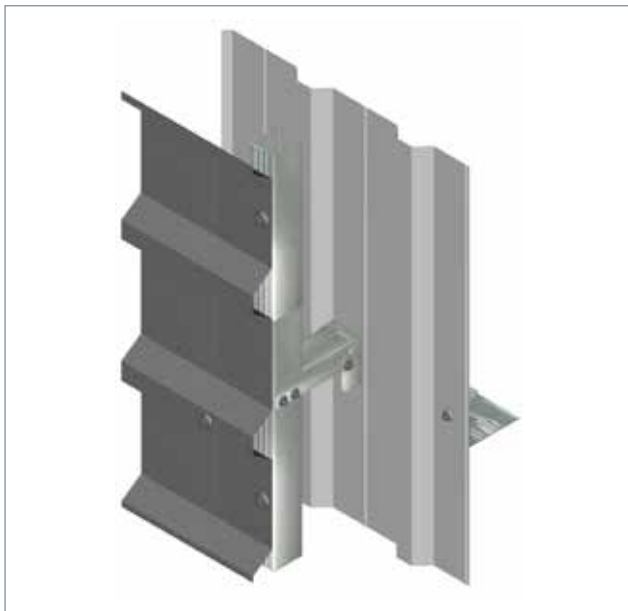


Rear view of the Bracket. Thermal pad not shown to allow view of the three fixing holes.

SPACER SYSTEMS

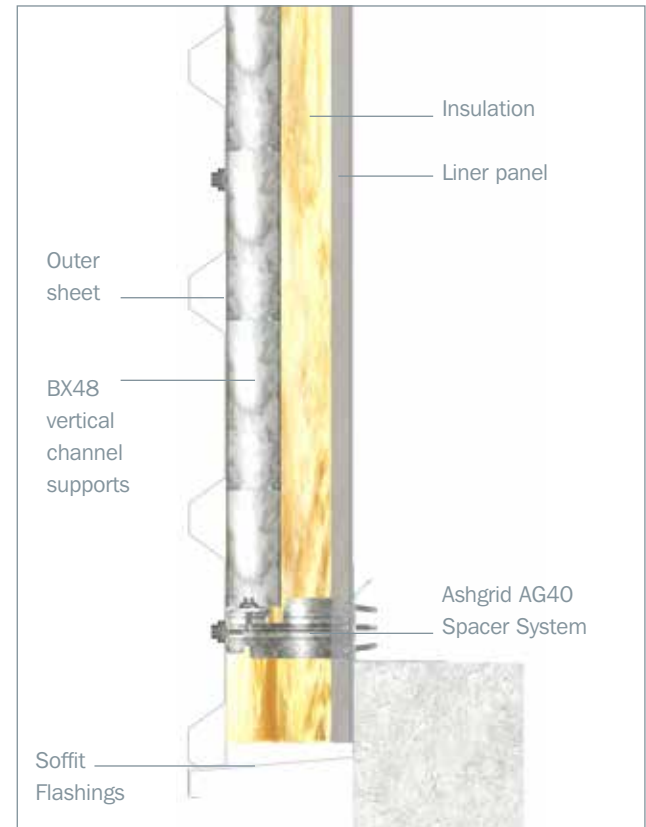
In order to fully utilise the flexibility of the BX48 system, Ash & Lacy have created recommended details for the design and construction of various solutions required on site that are often overlooked. The BX48 System is a fully engineered horizontal cladding support system, with bespoke connection details to ensure that loads are properly transmitted to the support structure, in conjunction with the Ash & Lacy AG40 spacer system.

Shown here are examples of potential designs for the installation of drip flashings, the construction of firewalls for Ashwall BX48 for metallic silver cladding and also connection details to provide a robust solution for horizontal cladding.



Drip flashings

Ash & Lacy have developed this recommended detail incorporating the new BX48 bracket for a robust drip and soffit detail, utilising the horizontal Ashgrid as a secure base.



TH40 System

A robust construction incorporates top hat sections spanning vertically across the rails to support the horizontal sheeting.

A TH40 bracket depth to form the required cavity, is fixed to the main rail flange with 2 No. or more fixings. The TH40 top hat section is then fixed to the TH40 bracket with 2 No. fixings (one in each face). The TH40 sections are available in 6.0m lengths and can be made continuous by using splice joints.

This connection detail not only distributes the vertical load evenly over all of the rails, but also offers lateral adjustment for out-of-plumb steelwork**

Note:

For cladding systems, the liner and rail construction must be rigid enough to take the various brackets.

**In instances where the top hat does not sit tight onto the bracket, care should be taken to avoid fixing weather shields at these locations.



Ashgrid AG40 & ABV Load Span Table

Bracket centres along bar (m)	Direction of loading	Purlin Centres (m)					
		1.0	1.2	1.4	1.6	1.8	2.0
		Loading in kN/m ²					
0.5	Download	6.00	5.00	4.29	3.75	3.33	3.00
	Uplift	6.00	5.00	4.29	3.75	3.33	3.00
0.6	Download	5.00	4.17	3.57	3.13	2.78	2.50
	Uplift	5.00	4.17	3.57	3.13	2.78	2.50
1.0	Download	2.49	2.07	1.78	1.55	1.38	1.24
	Uplift	2.84	2.37	2.03	1.78	1.58	1.42

All loads are working loads

Steel based on Z39 material

Download deflection = span/200

Figures limited to a bar/bracket connection load of 3kN.

Figures limited to bracket compression load of 3kN.

Figures limited by pull-out load of 3kN at bracket

position using 2 no. fixings

Ultimate bending stress is based on a load factor of

1.6 for download and 1.4 for uplift

The uplift figures must be compared to the pull-out capacity of the screw connections fixing the bracket to the structural purlin

BX48 Load Span Table

Vertical BX48 Centres (m)	Horizontal Rail Centres (m)					
	1.0	1.2	1.4	1.6	1.8	2.0
Loading in kN/m ²						
1.0	4.50	3.75	2.97	2.27	1.80	1.46
1.2	3.75	3.13	2.48	1.90	1.50	1.21
1.4	3.21	2.68	2.12	1.62	1.28	1.04
1.6	2.81	2.34	1.86	1.42	1.12	0.91
1.8	2.50	2.08	1.65	1.26	1.00	0.81
2.0	2.25	1.88	1.49	1.14	0.90	0.73

All loads are working loads (pressure & suction).

Steel based on Z39 material.

Deflection = span / 150 Maximum.

Figures limited by pull-out load of 4.5kN at bracket

position using 3 no. fixings

Ultimate bending stress is based on a load factor of 1.4

The figures must be compared to the pull-out capacity of the screw connections fixing the bracket to the structural purlin

TH40 Load Span Tables

Vertical TH40 Centres (m)	Horizontal Rail Centres (m)					
	1.0	1.2	1.4	1.6	1.8	2.0
Loading in kN/m ²						
1.0	3.00	2.50	2.14	1.88	1.67	1.48
1.2	2.50	2.08	1.79	1.56	1.39	1.24
1.4	2.14	1.79	1.53	1.34	1.19	1.06
1.6	1.88	1.56	1.34	1.17	1.04	0.93
1.8	1.67	1.39	1.19	1.04	0.93	0.82
2.0	1.50	1.25	1.07	0.94	0.83	0.74

All loads are working loads (pressure & suction).

Steel based on Z39 material.

Deflection = span / 150 maximum.

Figures limited by pull-out load of 3kN at bracket

position using two screws.

Ultimate bending stress is based on a load factor of 1.4

The figures must be compared to the pull-out capacity of the screw connections fixing the bracket to the structural purlin.

Since the introduction of Ashgrid in the early 1990s, Ash & Lacy Building Systems have provided support bar solutions, including numerous firewall systems, to offer contractors a fully engineered system in line with current Building Regulations (Part L).

More recent changes to part B have led to the review of current Firewall details and this document provides information on Firewall constructions that offer benefits such as a reduced cavity depth to match non-Firewall elevations, as well as a separate 'fast track' installation option.

Also introduced is a horizontal cladding Firewall, which provides a specifically engineered solution that eliminates the potential for any "rippling effect" in the external cladding face. Further to this a Firewall system selector has been set up to cover our full range of Firewall details, this is detailed in the matrix below.

The Ash & Lacy Ashgrid & BX48 and Firewall systems have been fully tested by Ash & Lacy Building Systems and certified by Exova.



System set out - brackets & insulation

All of the Ash & Lacy assessments have been carried out to ensure ease of installation with the fewest possible components and are based on an external wall application. To maintain integrity during a fire, the spacer brackets must be positioned so that they do not exceed the width of the insulation strips and thus prevent insulation dropping down the cavity during a fire.

The brackets can be easily placed to ensure that they fall as close to the centre of the insulation strip as possible. For example if the width of the insulation strip is 1200mm, the first line of clips should clamp the insulation in place at the start of the elevation. The second line of clips should then be positioned central to the insulation strip at 600mm along the elevation and the rest of the clips can then be placed to suit the strip width subject to loadings.

When using Ashgrid, the bracket set out is not so critical provided that the first line of insulation has a bracket positioned in the centre. Working outwards from this point at 1m centres then means that there will be at least one bracket per insulation strip width. In all instances when using Ash & Lacy firewall constructions, the responsibility lies with the installing contractor in ensuring the firewall meets the project specification and meets Building Regulations approved document B. In terms of cavity barriers, compartmentalisation and insulation integrity, all constructions assessed with two layers of glass fibre are based on a wall being 1000mm or more from the relevant boundary and are assessed to BS476.

Firewall System Selector

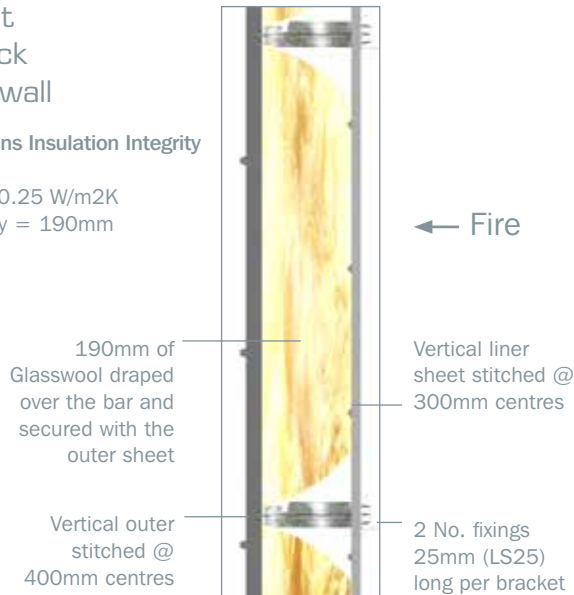
Report No.	122298	122298	122298	131336	134697	170432
Test criteria/ integrity to BS476	240min integrity 15mins insulation	240min integrity 15mins insulation	240min integrity 15mins insulation	240min integrity 30mins insulation	240min integrity 30mins insulation	240min integrity 15/30mins insulation
Wall type	Internal fire	Internal fire	Internal fire	Internal fire	Internal fire	Internal fire
Construction	BX48 horizontal wall	Top Hat horizontal wall	Ashgrid Vertical wall	Ashgrid Vertical wall	Top Hat horizontal wall	BX48 -
Insulation type	Glasswool	Glasswool outside bar only	Glasswool outside bar only	Glasswool and rockwool	Rockwool and rockwool	Glasswool or Rockwool+Glasswool*
Material thickness	Outer 0.5mm steel Liner 0.4mm steel	Outer 0.5mm steel Liner 0.4mm steel	Outer 0.5mm steel Liner 0.4mm steel	Outer 0.5mm steel Liner 0.4mm steel	Outer 0.5mm steel Liner 0.4mm steel	Outer 0.5mm steel Liner 0.4mm steel
Drg No	FD19	FD18	FD17	FD01A	FD022	FD24
Tested fixing method for liner	Stitch/rivets at 300 ctrs	Stitch/rivets at 300 ctrs	Stitch/rivets at 300 ctrs	Stitch/rivets at 300 ctrs	Stitch/rivets at 300 ctrs	Stitch/rivets at 300 ctrs

* Subject to insulation integrity requirements, please check with Ash & Lacy Technical Department

Fast track firewall

15mins Insulation Integrity

$U = 0.25 \text{ W/m}^2\text{K}$
Cavity = 190mm



Timed rating: 4hr fire wall

Insulation thickness:

190mm insulation to provide 0.25 W/m²K U/value.

Insulation integrity: 15mins

Details: FD17, FD18 & FD19

Assessment no: 122298

Bracket depth: 190mm

Applications: BX48 Horizontal, Top Hat Horizontal, Ashgrid Vertical

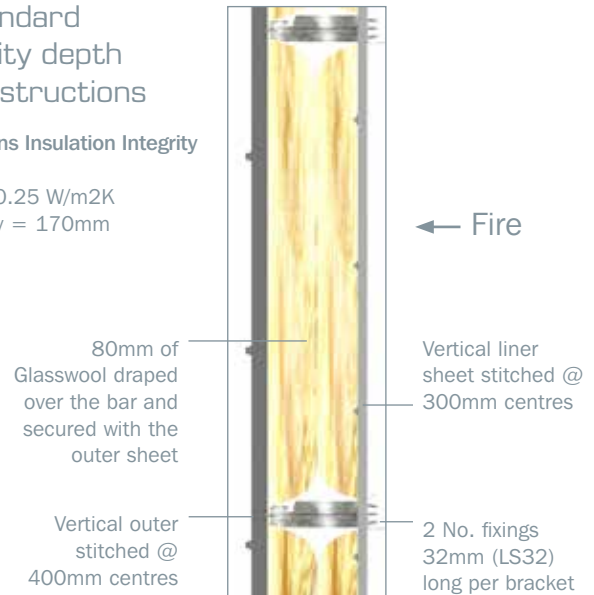
These options allow for all of the glass fibre insulation to be tucked over the outside of the bar and be compressed behind the outer cladding sheets. In such cases, the correct torque must be used on the fixing gun and spreader washers used on fixings to reduce the amount of deformation around the fixing.

Thicker insulation is required in this arrangement for thermal requirements due to the amount of compression.

Standard cavity depth constructions

15mins Insulation Integrity

$U = 0.25 \text{ W/m}^2\text{K}$
Cavity = 170mm



Timed rating: 4hr fire wall

Insulation thickness:

170mm insulation to provide 0.25 W/m²K U/value.

Insulation integrity: 15mins

Details: FD15, FD16 & FD20

Assessment no: 131336

Bracket depth: 170mm

Applications: BX48 Horizontal, Top Hat Horizontal, Ashgrid Vertical

These constructions utilise two layers of quilt, one tucked under the spacer bracket and one tucked over the outside of the bar for ease of construction.

The bracket depth is 170mm to match non-Firewall elevations and removes the need for a deeper Firewall construction, while providing 0.25 W/m²K U/value.

SPACER SYSTEMS

Metallic silver horizontal cladding construction

15mins Insulation Integrity

$U = 0.25 \text{ W/m}^2\text{K}$
Cavity = 180mm

Vertical channel section
100mm of Glasswool draped over BX48 bracket
Horizontal outer sheet stitched @ 400mm centres



Rockwool pad behind bracket
Minimum of 80mm Glasswool Roll (compressed 100mm can be used for 180mm cavities) between Ashgrid bracket and liner sheet
← Fire
Vertical liner sheet stitched @ 300mm centres
BX48
3 No. fixings 32mm (LS32) long per bracket

Timed rating: 4hr fire wall

Insulation thickness:

180mm insulation to provide 0.25 W/m²K U/value.

Insulation integrity: 15mins

Details: FD24

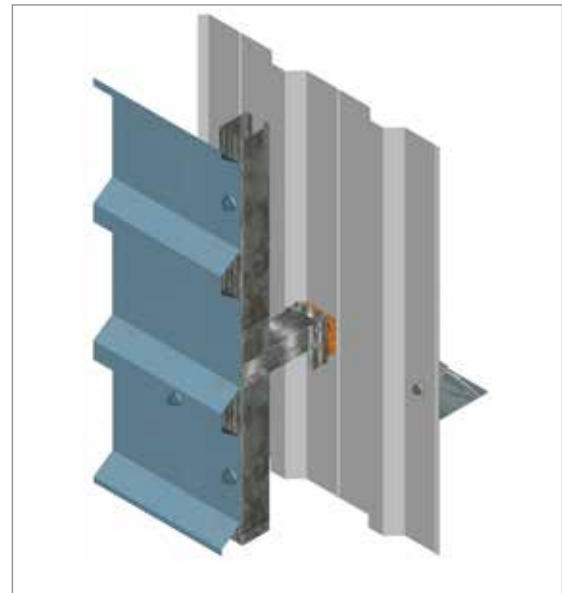
Assessment no: 170432

Bracket depth: 179mm with rockwool barrier pad

Applications: BX48 Horizontal cladding

This construction negates the need for insulation to pass between the outer sheet and Ashwall bar, eliminating the risk of a 'rippling' effect when laying Metallic Silver cladding horizontally. Two layers of glass fibre insulation are incorporated, one tucked under the bar and one pushed over and hung off the bracket.

The additional thermal break is catered for by the inclusion of a Rockwool pad on the back face (fire side of the bracket)



In all cases refer to full assessments for notes on supporting methods. Please refer to selector for details of 30 mins integrity option.

With the advent of ADL1&2 of the Building Regulations and the requirement for deeper thermal cavities within built-up systems, it has become increasingly important that careful consideration be given to the safety and security of the installers and the spacer support system, in particular during the construction phases.

A roofing system is at its greatest risk during the installation stage when it is not restrained by the top sheeting and is subjected to loading from foot traffic, temporary loading and

heavy sheet packs. This, combined with drag forces from high winds, tends to compound these problems further.

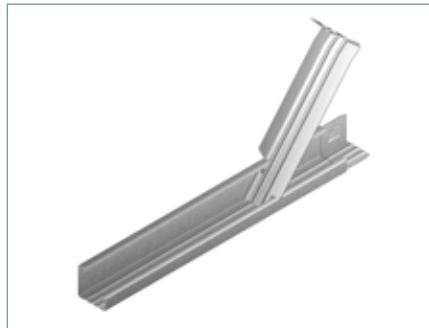
With construction depths increasingly exceeding 200mm and with the ongoing need to improve installation efficiency and system performance, Ashgrid AG40 has been further enhanced to satisfy these increasingly demanding requirements.

Choice of installation methods to suit personal preference and site conditions

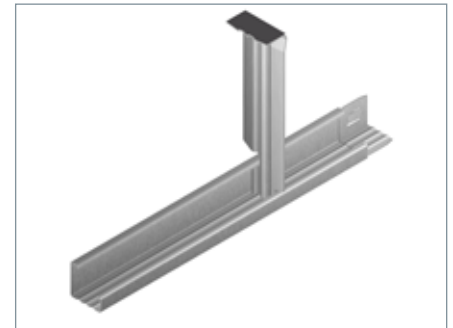
Method 1



1. Lay bar on roof deck and offer the small flange of the bracket to the small flange of the bar.



2. Tilt and rotate bracket backwards at desired fixing position.



3. Twist bracket and snap into position at 90° to bar.

Construction depths up to and including 250mm

All spacer support systems will be exposed to in-line sway forces during their installation. To counter this, the stability of AG40 has been further enhanced through improvements in bracket design and the introduction of the Safe-Loc™ spigot. These designed-in features perform each and every time,

providing peace of mind without reliance on extra, time consuming bar-end fixings and anti-sway brackets.

For cavity depths up to and including 250mm no additional sway control measures need to be employed on the new Ashgrid AG40. For exceptional site loading conditions and for heights above 250mm, advice on performance should be sought from the Ash & Lacy Technical Department.

Method 2



1. Offer the bracket to the bar at an angle from the non-spigot end.



2. Slide brackets along the bar to the desired fixing positions.



3. Snap each bracket upright to lock into position at 90° to the bar.

Brackets may be repositioned by reversing this action and sliding along the bar as in steps 1 & 2.

4. Making certain there is a bracket within 100mm of a spigot end, install additional brackets to match the liner module up to 1m centres maximum. (Bracket centres may need to be reduced in areas of high wind suction or heavy snow loading).

5. Engage the open end of the bar onto the Safe-Loc™ spigot and push firmly until the tab clicks into position. To release, simply depress the tab with a sharp object such as a screwdriver.

6. Continue as above for quick, safe and secure installation.

Brackets should be fixed to the structure using two Ashfix fasteners inclined and ensuring that brackets do not twist in the bar.

Continuity of insulation is an important feature of construction, preventing gaps where condensation can form. The Building Regulations apply stringent rules in this regard, and the Ashgrid ABV Brackets provide the answer.

The system can be pre-assembled by either sliding or snapping the brackets into the bar, and the whole system fixed onto the supporting structure, in the same way as the original Ashgrid system. This will then necessitate the insulation being cut at each grid position, and tucked under the bar, ensuring that there are no gaps.

Alternatively, the brackets can be fixed at the desired centres (normally 1m*), and then the bar can be rolled and snapped onto them. This allows the insulation to be laid before the bar is located, eliminating the danger of gaps. The insulation is simply pushed over the brackets.

Pre-fixing of the brackets does not present a problem, as the system is tolerant to small mis-alignment. Furthermore, bars can be snapped together before locating onto the brackets.

* Bracket spacings of up to 1200mm are possible, subject to loading - please consult our technical department for guidance, if in doubt

Choice of installation methods to suit personal preference and site conditions

Method 1



1. Position the Ashgrid ABV Bracket at the desired position, with the 2 'wings' located in the short downstand of the AG40 Bar.



2. Holding the AG40 Bar in one hand, rotate the ABV Bracket so that the curved face of the bracket bears against the long leg of the AG40 Bar, until it snaps into place



3. The assembled system can then be fixed onto the structure

SPACER SYSTEMS

Method 2



1. Position the Ashgrid ABV Bracket at the open end of the AG40 Bar.



2. Slide the ABV Bracket into the bar to the desired position.



3. The assembled system can then be fixed onto the structure.

Method 3



1. Fix the Ashgrid ABV Brackets to the structure, with the mouth of the ABV facing downslope, ensuring that the brackets are in line (it may be useful to use an AG40 bar to align the brackets).



2. After laying the insulation (omitted from the photograph), position the AG40 bar onto the brackets, with the 2 'wings' located in the short downstand of the AG40 bar.



3. Rotate the AG40 bar onto the brackets until it snaps into place - this can be done a bracket at a time, and subsequent AG40 bars are located into the preceding bar as the system is progressed.



4/5. Once the Ashgrid bar is in place, the next bar may then be connected to it, by locating the open end onto the 'Safe-Loc' spigot and pushing firmly until the tab clicks into position. This bar may then be snapped onto the brackets as before easily located into the preceding bar as the system is progressed.



Ashgrid AG40 Safe-Loc™ is an ideal component for the over-roofing or over-cladding of any building where the existing roofing or cladding has become unsightly, beyond repair or an improvement in the thermal performance is required

Ashgrid AG40 Safe-Loc™ is installed over the in-situ roofing or cladding, providing a stable platform for the new weather sheet. This also creates a cavity between the new and the old where insulation can be inserted to increase the building's thermal performance to current building regulations and reduce carbon emissions. This allows for a completely new weather sheet to be installed with minimal disturbance to operations within the building and improves the overall aesthetic.

Ash & Lacy can provide various weather sheets from trapezoidal profiles to standing seam systems in aluminium or steel to compliment and improve the overall visual appeal of the building.

Ash & Lacy would always recommend that any new system should be fixed to structural members and not to an existing secondary system.

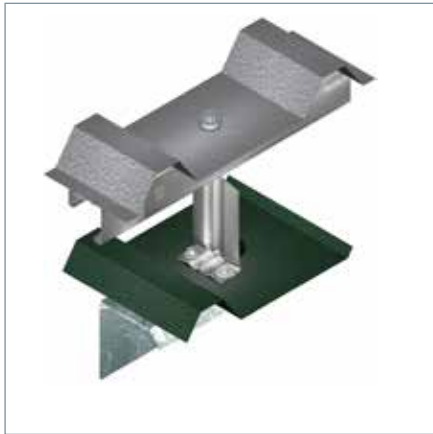
Brackets should be installed as per standard procedures, at a maximum of 1m centres and ensuring a bracket within 100mm of a spigot end. (Bracket centres may need to be reduced in areas of high wind suction or heavy snow loading).

Dependant on the condition of the existing roofing materials a vapour control layer and breather membrane may be required.

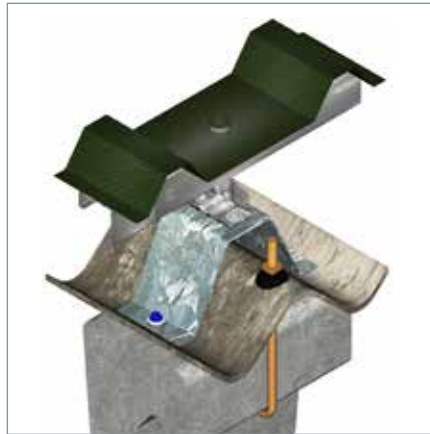
Care should always be taken when working with old or deteriorated materials, existing sheeting can be brittle and all precautions should be taken to ensure a safe working platform.

When installing Ashgrid Safe-Loc™ spacer support system over existing asbestos it is advisable to pre-drill a clearance hole to prevent damage.

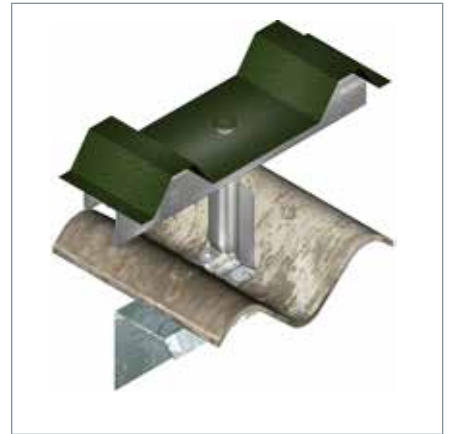
As with all work undertaken where the possibility of asbestos particles could be released the HSE guidelines should be consulted and adhered to.



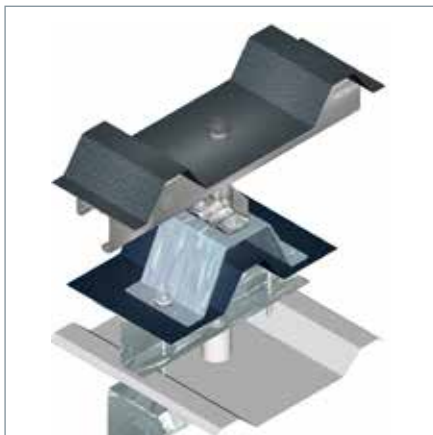
Metal sheet over steel purlins



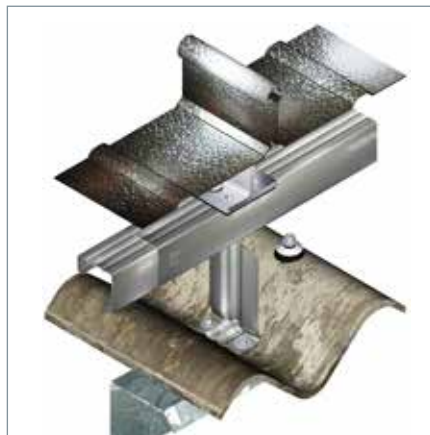
Single skin fibre cement over concrete purlins



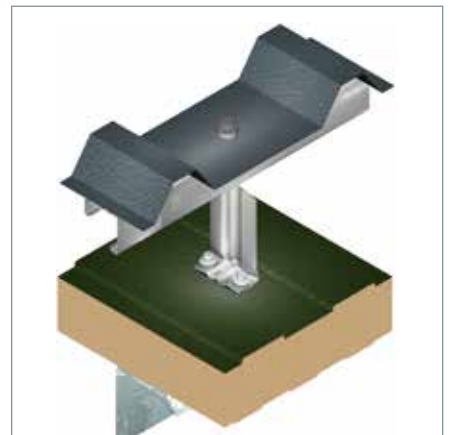
Single skin fibre cement over steel purlins



'Z' and ferrule over steel purlins



Fibre cement over steel purlins (standing seam)



Composite panel over steel purlins

Introduction

Amongst a wide ranging product portfolio we are able to offer twin skin trapezoidal cladding constructions using our 32/1000/200 profile sheet and liner combined with the original, and often copied, bar & bracket spacer system 'Ashgrid'.

With our modern production facility combined with our outstanding technical back up, we are able to offer a range of materials and material finishes, combined with U value calculations and fully assessed firewall constructions.

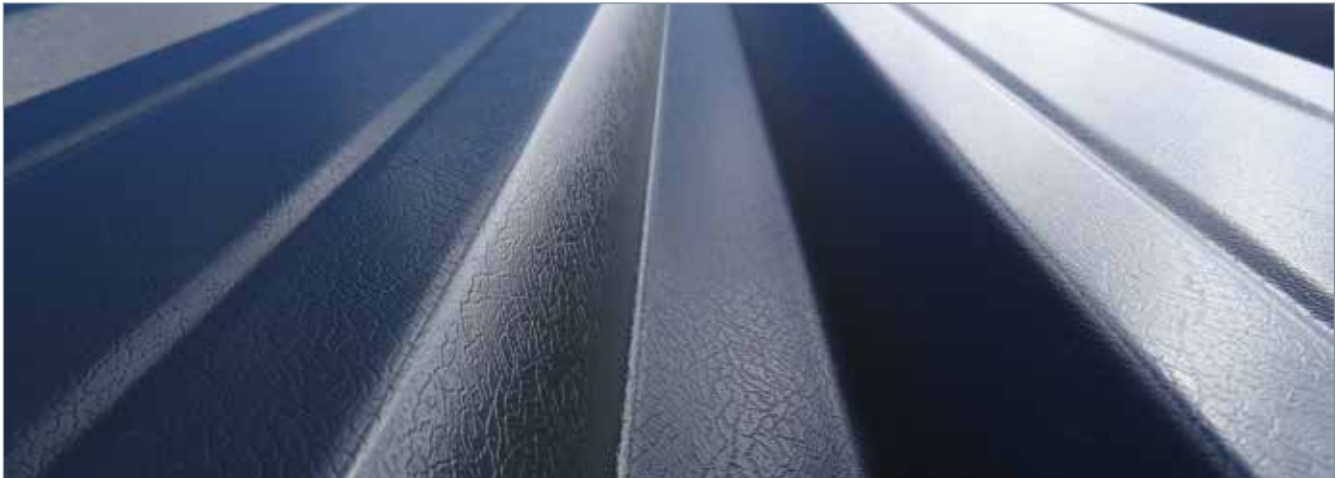
Material finishes

Ash & Lacy 32/1000/200 is available in a number of pre-coated steel finishes, including plastisol, HPS200, HPS200 Ultra, PVdF and enamel.

Also available in coated aluminium for highly aggressive environments & atmospheres.

Depending upon material finish and colour, up to a 40 year warranty is available on the external coating. Combined with a 25 year system warranty the building owner can have full peace of mind when purchasing Ash & Lacy Cladding Profiles.

Available with a perforated finish for ventilation or to provide sound absorption characteristics, please contact us directly for prices, technical information and colour swatches.



Thermal performance

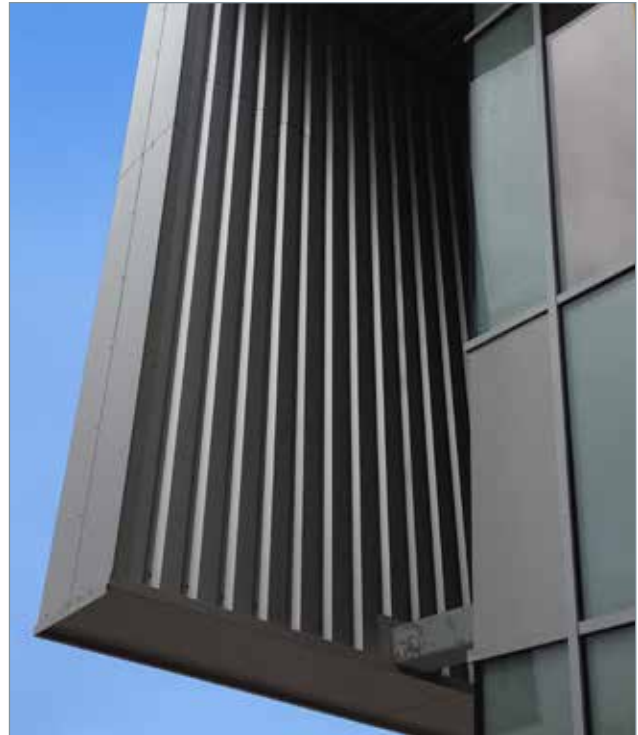
Ash & Lacy are able to provide U value calculations for your specific construction needs. Simply provide us with the U value requirement and purlin centres and we can advise the appropriate insulation thickness to suit your project.

We have a range of spacer system options available which will suit either a vertical or horizontal application, all of which we are able to offer U value calculations.

U values of $0.10\text{W/m}^2\text{K}$ can easily be achieved using the Ashgrid ABV bracket.

Applications

Ash & Lacy Cladding profile can be used in a number of applications, including new build, single skin and refurbishment, and used in conjunction with the market leading Ashgrid spacer system, can be fixed to a wide range of substrates, including traditional purlins, timber and concrete.



Material specifications

Ashgrid™ AG40 bar

Manufactured from 1.25mm thick high yield galvanised steel to S390GD + Z275 NA-C. Coil to EN 10147:2000. Minimum yield: 390N/mm², Minimum tensile: 460N/mm². Supplied in lengths of 1m, 2, & 3m (other lengths are available on request).

Ashgrid™ AB40 Brackets

Manufactured from 1.6mm thick galvanised steel to DX51D + Z275 BS EN 10142. Supplied with a 3mm thick EPDM base thermal isolator pad. The standard bracket depths (mm) are: 60, 80, 85, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250 & 280.

Ashgrid™ ABV Brackets

Manufactured from 1.6mm thick galvanised steel to DX51D + Z275 BS EN 10142. Supplied with a 3mm thick EPDM base thermal isolator pad. The standard bracket depths (mm) are: 240, 260, 280, 300, 320, 340, 360, 380 & 400.

BX48 Bar

Manufactured from 1.25mm thick high yield galvanised steel to S390GD + Z275 NA-C. Coil to EN 10147:2000. Minimum yield: 390N/mm², Minimum tensile: 460N/mm². Supplied in 6m lengths.

BX48 Brackets

Manufactured from 2.0mm thick galvanised steel to DX51D + Z275 BS EN 10142. Supplied with a 2mm thick EPDM base thermal isolator pad or 10mm Rockwool pad (Firewall systems). The standard bracket depths (mm) are: 119, 139, 159, 179 & 199.

TH40 Bar

Manufactured from 1.25mm thick high yield galvanised steel to S390GD + Z275 NA-C. Coil to EN 10147:2000. Minimum yield: 390N/mm², Minimum tensile: 460N/mm². Supplied in 6m lengths.

TH40 Brackets

Manufactured from 2.0mm thick galvanised steel to S275GD + Z275 BS EN 10142. The standard bracket height is 135mm (Other bracket heights are available on request).

Fixings

Carbon Steel

Manufactured from high quality medium carbon cold forming steel. Available to suit various substrates (consult Fixings brochure/department for most appropriate fixing).

Stainless Steel

Manufactured from 304 grade austenitic stainless steel (316 grade available on request). Drill point and lead-in threads manufactured from heat treated carbon steel. Available to suit various substrates (consult Fixings brochure/department for most appropriate fixing).



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