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July 2026

VMZINC® ROOFING + RAINWATER SYSTEMS

Standing Seam and Other Roof Systems
Gutter and Downpipe Systems

Design, specification and installation guidelines



VMZINC

VMZINC® roofing and rainwater systems

Contents



Company profile

VMZINC® has been manufacturing a wide range of rolled zinc products used primarily for building envelopes since 1837. In addition to batten cap and standing seam roof systems, products include rainwater systems, a wide range of cladding systems, including a number of rainscreen facade products. Since its creation the company has also produced decorative roofing products such as dormers, bull's eyes, weather vanes, finials, balustrades and other ornaments.

Front cover building credit
Architect: James Gorst Architects
Project: Castle Community Rooms

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VMZINC[®] roofing and rainwater systems

Why use VMZINC[®] roofing and rainwater systems?

Introduction

Zinc is among the most sustainable metals used in construction today and has been used on the roofs of Paris for almost 200 years. The VMZINC[®] standing seam system is also highly cost-effective, both from an initial procurement and design life perspective.

Whether for new build or refurbishment, the VMZINC[®] standing seam system has been designed to complement a wide range of building materials and styles. The finishes available offer exceptional colour stability. This ensures that maintenance requirements will be minimal throughout the system's design life and that the material's installed appearance will be retained for many years.

VMZINC[®]'s versatile standing seam system can be used for warm or cold roof constructions and all trim including both internal and hanging external gutters are available in VMZINC[®].

Benefits of VMZINC[®] standing seam and rainwater systems

- Lightweight and durable
- Minimal expansion and creak
- Fully recyclable
- A service life of 100 years for roofing panels and in excess of 50 years for gutters
- Virtually maintenance-free
- Can be installed on pitches from 3°-90°
- Complex shapes can be easily achieved. Zinc panels can be pre-curved to a radius as low as 600mm
- Can be used to cover soffits (box gutter overhangs, etc)
- EN 15804 Environment Product Declaration
- BBA certified systems
- Conforms to EN 988
- Can be laid in lengths up to 13 metres without the need for expansion steps
- Fire classification: VMZINC[®] in all finishes is A1 non-combustible following EN13501-1
- Available in a choice of either natural finish or 10 pre-weathered finishes as well as bespoke PIGMENTO[®] colours
- Brooft4 tests showing no flame penetration or spread are available for most VMZINC[®] roofing systems
- Fully supported systems follow BS EN 501 and Code of Practice 143-5



VMZINC® roofing and rainwater systems

Sustainable performance

Low energy used in the manufacturing process

VMZINC® rolled zinc products are used in construction industries throughout the world for their sustainability, distinctive appearance, and low maintenance requirements. As with VMZINC® facade and rainwater systems, manufacturing processes for our standing seam system presents a low environmental impact, particularly with regard to energy expenditure.

As the comparative energy expenditure diagram opposite shows, less energy is required to extract zinc from the ground than the other principal metals, and is even more favourable for recycled zinc. Such minimal use of energy in the production of zinc clearly indicates its contribution to sustainable development.

Recycled material

95% of old rolled zinc recovered every year in Western Europe, currently estimated at 100,000 tonnes, is reused. This represents savings in mining resources of between 1 and 2 million tonnes.

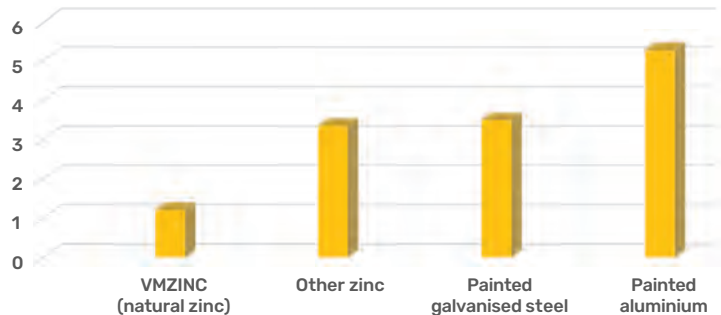
Low corrosion, long life

The VMZINC® standing seam system benefits from zinc's self-protecting patina which develops as a result of exposure to water and carbon dioxide. Over the last 50 years the quantity of sulphur dioxide in the atmosphere has been greatly reduced. SO₂ being the key agent of corrosion means that corrosion rates are now as low as 1µm per year. With an initial thickness of 0.7mm, the estimated life span of rolled zinc is over a hundred years.

A natural material

VMZINC® undertakes Life Cycle Analysis (LCA) tests on its products and publishes Environmental Product Declarations (EPDs), such as BRE Environmental Profiles, available from our website www.vmzinc.com/en-gb/homepage and www.greenbooklive.com. These provide users with comprehensive, reliable and transparent information on relevant environmental characteristics. The information is also used by VMZINC® as the basis for its eco-design approach.

Global warming potential



■ Global warming potential for 1m² of standing seam roof (kgCO₂equ) based on a French FDES (LCA) using INIES data (French data base)

Compared with other metals, very little energy is needed to manufacture zinc coils from ore resulting in lower kg CO₂ equivalent/m² of roof or wall.



VMZINC® roofing and rainwater systems

Sustainable performance

Environmental profiles

Environmental profiles measure the impacts of a construction material, product or building system throughout its life, not only during its manufacture, but also its use in a building over a 100 year period. This includes its extraction, processing, use and maintenance and its eventual disposal.

VMZINC® is a member of BRE Global's certification scheme and carries Environmental Product Declarations in accordance with EN 15804 for Natural Zinc, QUARTZ-ZINC®, ANTHRA-ZINC®, the PIGMENTO® range as well as VMZINC® PLUS.



All of VMZINC® production plants are conform to ISO 14001 creating a high level of quality control with regards to the environment.

Quality management certification ISO 9001 also applies to not only all production plants but also to all services and products.



VMZINC® roofing and rainwater systems

Surface finishes

VMZINC® is a non-ferrous, self-protecting metal. Natural Zinc forms its own protective layer, called a patina, when it is in contact over time with air (oxygen and carbon dioxide) and water. VMZINC® offers ten zinc surface colours in addition to the natural zinc which is sometimes referred to as mill finish zinc.

Natural VMZINC®

Natural VMZINC® has a shiny metallic appearance when new and develops a patina over time. In facade applications, it may take 10 years for the matt grey patina to form.

QUARTZ-ZINC®

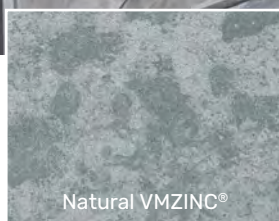
QUARTZ-ZINC® offers an appearance and texture that does not change over time. When QUARTZ-ZINC® is scratched, it will self heal. The grey tones of QUARTZ-ZINC® blend well with existing construction materials. QUARTZ-ZINC® is produced through a phosphatation of mill finish Natural Zinc. The darkness of the pre-weathered zinc is measured electronically using a Y figure where 0 is black and 100 is white. Acceptable tolerance of QUARTZ-ZINC®, Y = 22 to 25.

ANTHRA-ZINC®

ANTHRA-ZINC® with its visible grain matches the colour of slate and blends well in combination with photovoltaic panels. ANTHRA-ZINC® is produced through a phosphatation of mill finish Natural Zinc. Acceptable tolerance of ANTHRA-ZINC®, Y = 5 to 7. Due to the dark colour of ANTHRA-ZINC® it should be carefully considered before using on non-rinsed surfaces such as protected facades and soffits. For rinsed surfaces in coastal environments ANTHRA-ZINC® STRAT should be considered.

AZENGAR®

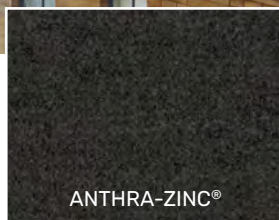
AZENGAR® is the surface finish from VMZINC® which is the first engraved zinc giving a product with a matt, heterogeneous and light aspect. AZENGAR® can be used in the same fashion as other VMZINC® products for both roofs and facades.



Natural VMZINC®



QUARTZ-ZINC®



ANTHRA-ZINC®



AZENGAR®

VMZINC® roofing and rainwater systems

Surface finishes

Please contact us
for samples

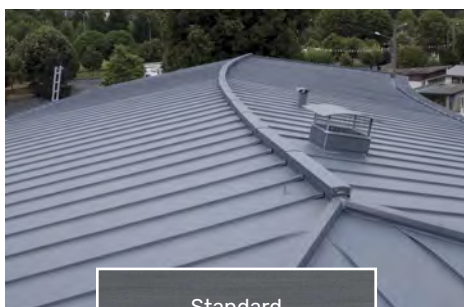
Standard PIGMENTO®

PIGMENTO® finishes offer a unique range of colours (Blue, Green, Brown, Red, Grey, Storm Grey and Charcoal Blue) that enhances any building. This natural product enables the texture of the QUARTZ-ZINC® to still be seen whilst offering the designer the choice of colour to complement other elements of a facade or roof. The colouration of the zinc is achieved with a special pigment layer that enhances the qualities of the zinc without presenting a block colour. This product is tested to EN13523. PIGMENTO®, available in 7 standard colours, provides an increased resilience, however in a severe non-rinsed marine environment (1km from the sea), staining is still possible and therefore the material should not be used in this application.

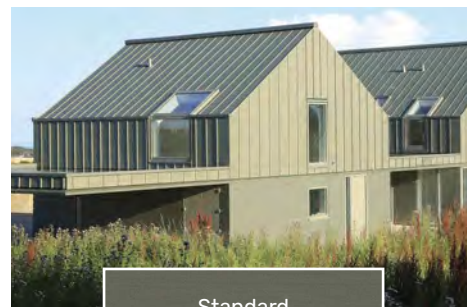
VMZINC® is not a painted product and therefore colour variations may occur. No colour matches are guaranteed therefore zinc should be installed from the same coil/batch because of colour variations in the manufacturing process.

Bespoke PIGMENTO®

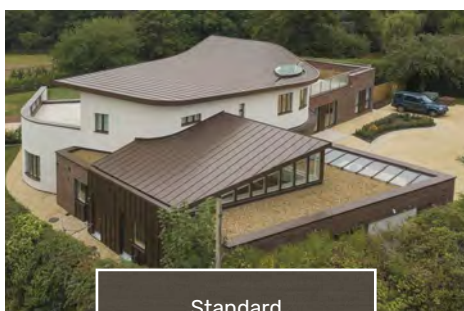
The PIGMENTO® range is also available in bespoke colours for a minimum order quantity of 3 tonnes.



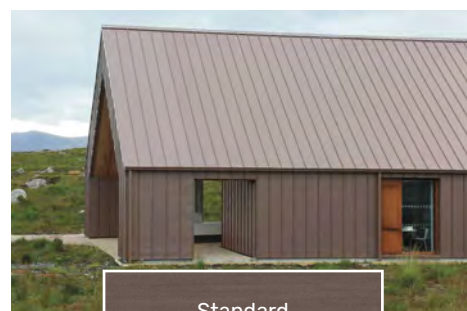
Standard
PIGMENTO®
BLUE



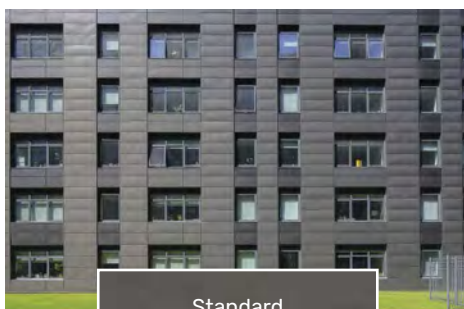
Standard
PIGMENTO®
GREEN



Standard
PIGMENTO®
BROWN



Standard
PIGMENTO®
RED



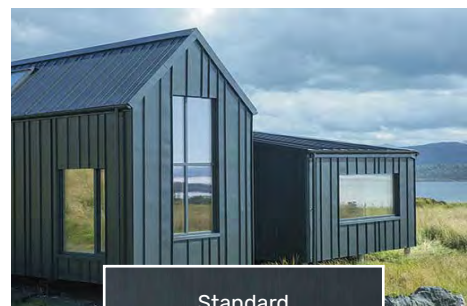
Standard
PIGMENTO®
GREY



Standard
PIGMENTO®
STORM GREY



Bespoke PIGMENTO®



Standard
PIGMENTO®
CHARCOAL BLUE

The roofing system

Underlying principles

Introduction

The standing seam system consists of a comprehensive range of robust components that ensures appropriate and correct installation is achieved. It is also important that standing seam roofs are installed by properly trained and equipped professionals.

Individual panels are held in place at the top of the pitch by a minimum of 5 fixed clips and then towards the lower portion of the panel by sliding clips allowing thermal movement. These stainless steel clips, which are fixed to the structure, are crimped inside the joints. Thus the fixing clips for panels and flashings never penetrate the material and therefore do not affect the appearance or damage the waterproofing. The low height of the seams (25mm standard) and the 600mm maximum spacing between joints give the roof a light, harmonious appearance.

The standing seam system is available in various standard coil dimensions shown in the table on the opposite page. Non-standard widths between 60mm and 600mm can also be produced.

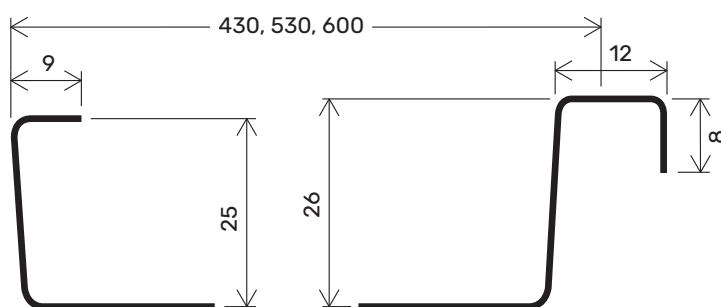
The standing seam panels weigh approx 6kg per m².

See pages 6 and 7 for samples of the 10 pre-weathered and engraved finishes.

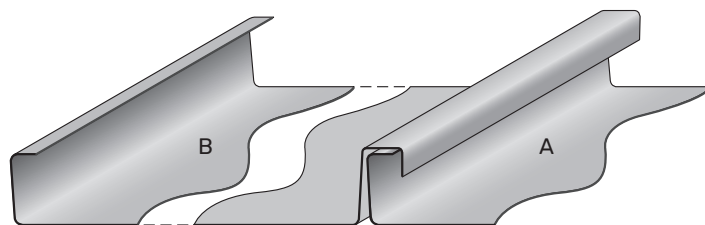
The system is eminently suitable for warm roof constructions (pages 12-19) and for cold roof constructions (pages 22-27).

VMZINC® PLUS

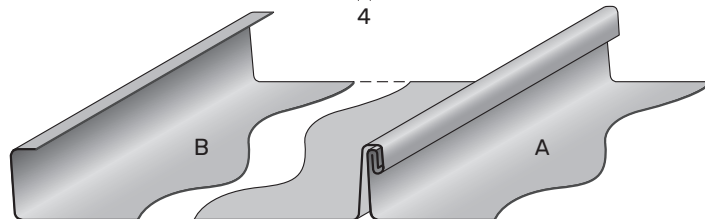
VMZINC® PLUS is a unique patented product that allows zinc to be installed on ventilated plywood (page 24) as well as specific warm (non-ventilated) substrates (pages 12-19). The product consists of VMZINC® (in all finishes) having a 60µm coating applied to the underside thus allowing a more varied amount of substrates to be used and eliminating the risk of the formation of white rust on the underside of the zinc standing seam panels (when the correct substrate is used). VMZINC® PLUS resists to an abrasion of 140 litres when tested in accordance with ASTM D 968.



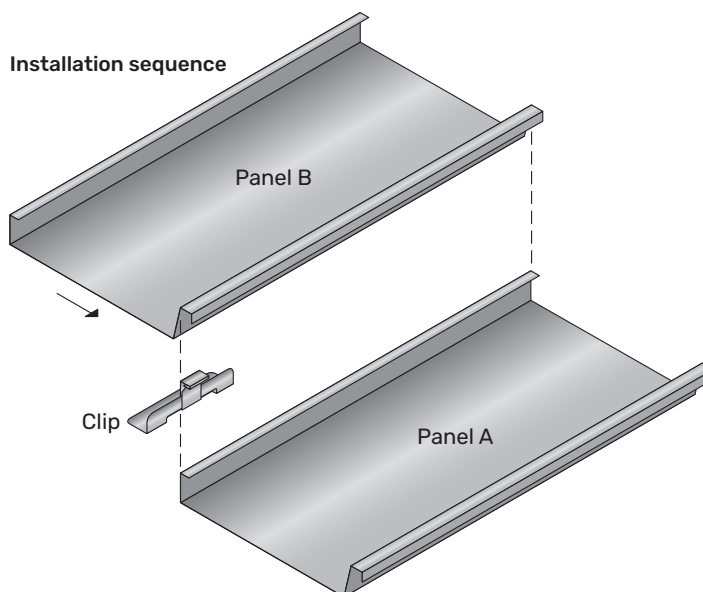
Panel dimensions (mm)



Before crimping



After crimping (double lock standing seam)



1. Position panel A
2. Engage clips to upstand of panel A and screw fix to substrate
3. Engage edge of panel B over clip
4. Crimp all 3 components together to form double lock standing seam

VMZINC® standing seam roofing

The roofing system

Underlying principles

Please contact us
for further
design assistance



VMZINC® accessories

VMZINC® has 2 BBA Certificates for non-ventilated warm roof systems: the Structural Roof and the Compact Roof. See pages 14 to 17.

BBA certified systems give a wide range of benefits. For over 40 years agrément certificates have been supplied by the BBA in order to give unbiased information on the performance of a system. By selecting a BBA system an architect is sure to avoid problems at a number of stages in the building process and queries about the performance of key products. By using BBA certified systems contractors also know that they will perform, if installed in accordance with the guidance in the Certificate.



Standing seam coil dimensions

VMZINC® supply a number of accessories ranging from a breather membrane (page 46) to fixing clips (page 44) and flashings such as the G3 ridge, eave and verge.

Surface finish	Coil thickness (mm)	Coil width (mm)	Standing seam centres (mm)
Natural Zinc	0.70 or 0.80	500, 600 or 670	430, 530 or 600
QUARTZ-ZINC®	0.70 or 0.80	500, 600 or 670	430, 530 or 600
ANTHRA-ZINC®	0.70 or 0.80	500, 600 or 670	430, 530 or 600
PIGMENTO®	0.70 or 0.80	500, 600 or 670	430, 530 or 600
AZENGAR®	0.70 or 0.80	500 or 600	430 or 530

All the above surface finishes are available as Standard and PLUS products.

Standing seam zinc roofing will not give a perfectly flat finish. However, by reducing panel width and increasing zinc thickness, unevenness will be reduced. Narrower panels are also recommended in exposed areas with high wind loads.



VMZINC® standing seam roofing

Kettle Collective



VMZINC® standing seam roofing



Warm roofs (non-ventilated)

Introduction



The VMZINC® G3 Ridge shown above:

- Gives a sleek, aesthetic value to the roof
- Is a standard VMZINC® solution
- Is easy to install

VMZINC® PLUS

VMZINC® PLUS must be used in all types of warm non-vented roof construction.

VMZINC® PLUS is a unique solution that offers a protective coating 60 microns thick on its underside to protect the zinc from possible corrosion. VMZINC PLUS also allows all 10 available finishes to be installed.

Advantages of a warm non-vented roof

This type of construction reduces thermal bridges and increases air tightness whilst still offering BBA certification and a BRE EN 15804 EPD.



For more information contact us on

01992 921 300

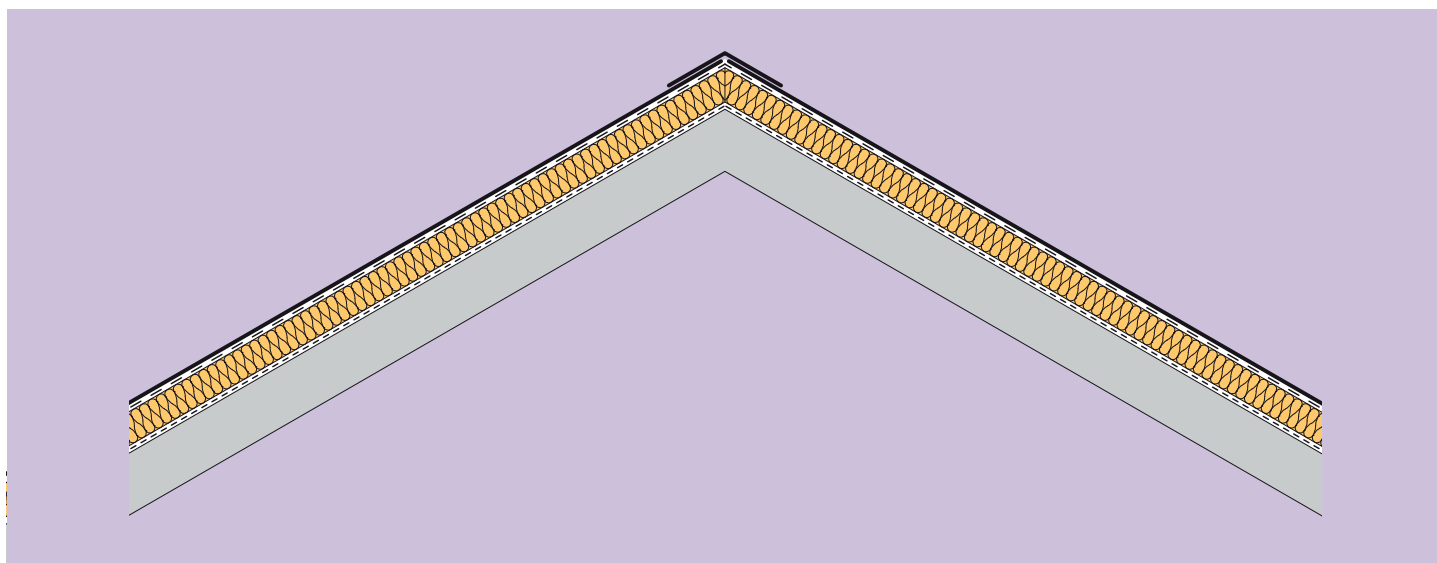
or send an e-mail to

vmzinc.uk@vmbuildingsolutions.com

Warm roofs (non-ventilated)

Introduction

Typical warm roof arrangement



Continuous layer of insulation covering a fully supported vapour barrier.

Definition of warm roof in the UK

Warm non-ventilated and cold ventilated roofs are two terms which do not always denote the same ideas to all building professionals. In order to put the warm non-ventilated roof system into context, we will refer to it as a roof where there is absolutely no vented space within the roof build-up and furthermore the entire roof structure is on the warm side of the insulation. In the UK this means that the roof structure is entirely below the insulation.

Elements of the system

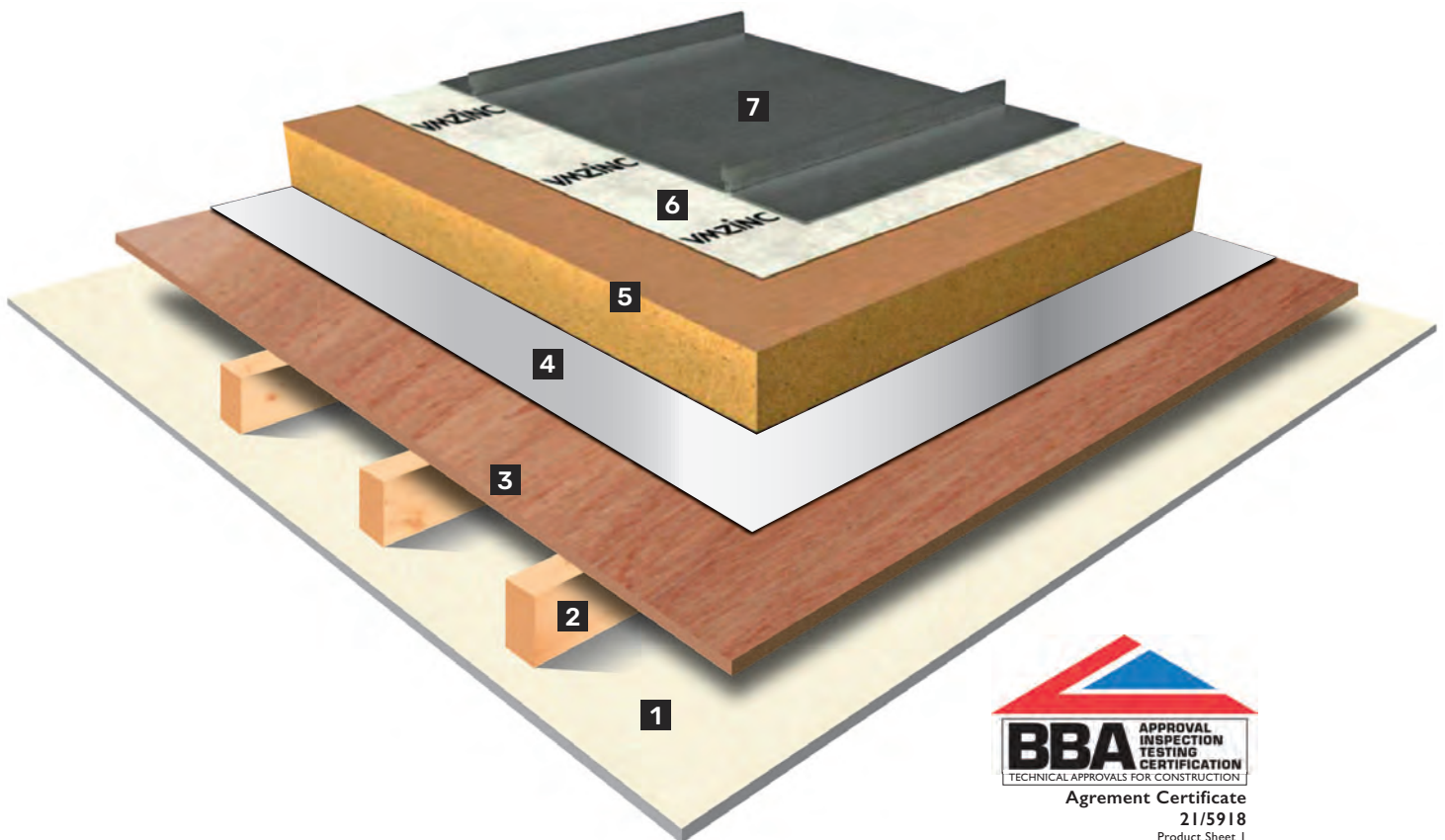
- VMZINC® PLUS must be used on all warm roof build-ups
- VMZINC® Membrane must be used (breather membrane)
- The substrate must be continuous and even and the correct fixing clips must be used
- Aludex Max vapour barrier must be used and correctly installed. This is a bitumen-backed aluminium foil vapour barrier that must be fully supported and must cover the complete surface of the roof

Warm roof standing seam constructions

- With rigid insulation – **Structural Roof** p14
- With cellular glass insulation – **Compact Roof** p16
- With insulated metal-faced panels p18



Standing seam on rigid insulation - Structural Roof



Key to construction build-up

- 1 Interior finish
- 2 Rafters
- 3 Continuous support (e.g. steel deck or plywood)
- 4 Aludex Max (fully supported vapour barrier)
- 5 Insulation (e.g. mineral board or PIR)
- 6 VMZINC® Membrane
- 7 VMZINC® PLUS Standing Seam

Advantages of the Structural Roof

- BBA certified – 21/5918 Product Sheet 1
- BRE EN 15804 EPD
- Reduced thermal bridges



Standing seam on rigid insulation - Structural Roof

Area of application

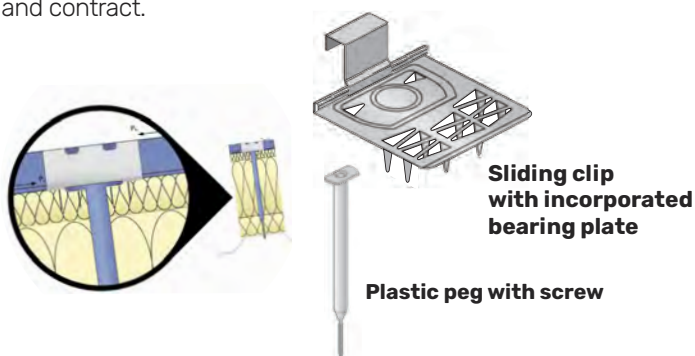
With this warm roof system VMZINC® PLUS Standing Seam can be installed on rigid insulation (mineral board or PIR) without ventilating the underside of the zinc. It is fixed through to the deck with special fixing screws and clips supplied by VMZINC®. The system can be used for roofs with a pitch from 3° to 70° and for buildings with humidity classes of between 1 to 4 (dwellings with high occupancy, sport halls, etc).

Structure

The supporting structure can be a steel or plywood deck. Either deck is covered by Aludex Max (an aluminium foil-reinforced bituminous vapour barrier with a high water vapour resistance of 7000MNsg) installed with cold or hot glued joints. All insulation materials must have a compression strength of minimum 50kPa (0.5kg/cm²), at a maximum 10% deformation and must be dimensionally stable at up to 100°C and comply with current Building Regulations. Between the VMZINC® PLUS and the insulation, a VMZINC® Membrane is fixed with an overlap that varies depending on the slope. The insulation material must also comply with the fire resistance requirements of the Building Regulations.

Clip types and associated components

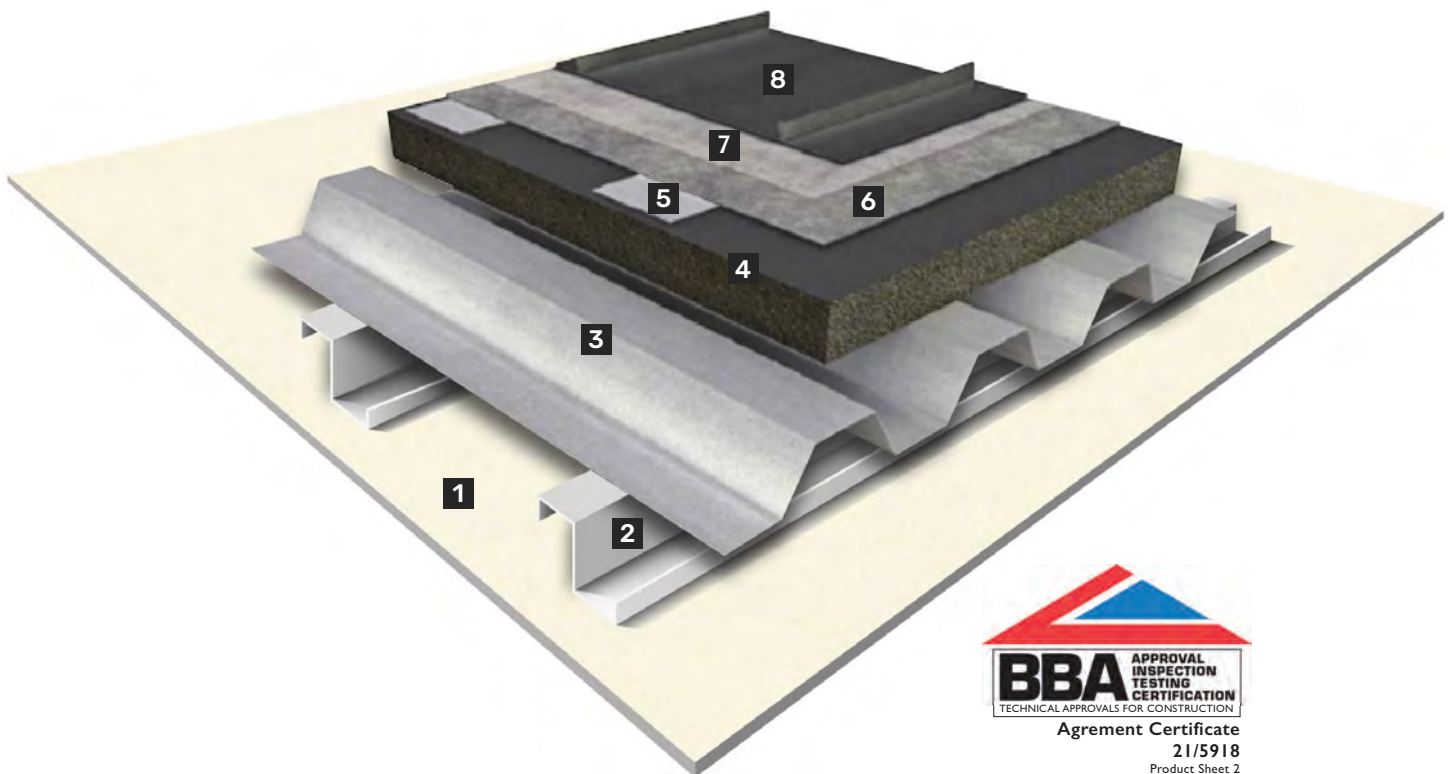
The Structural Roof includes fixing systems that allow both fixed and sliding clips to be installed without damaging the insulation but at the same time allowing the zinc panels to freely expand and contract.



Note:
The information relating to the installation of insulation is indicative only. The choice and installation of these products will be according to the recommendations of the insulation manufacturers.

Download the technical drawings of
this roof build-up from our website
www.vmozinc.co.uk

Standing seam on cellular glass insulation - Compact Roof



Key to construction build-up

- 1** Interior finish
- 2** Metal purlins
- 3** Continuous support (e.g. steel deck or plywood)
- 4** Cellular glass insulation (e.g. FOAMGLAS)
- 5** Galvanised steel plates
- 6** Bituminous membrane
- 7** Polyethylene separation layer
- 8** VMZINC® PLUS Standing Seam

Advantages of the Compact Roof

- Ideal for buildings with high humidity levels (including class 5, swimming pools)
- BBA certified - 21/5918 Product Sheet 2
- Almost no thermal bridges
- Excellent pull-out resistance



Galvanised steel plates inserted into FOAMGLAS insulation

Standing seam on cellular glass insulation - Compact Roof

Area of application

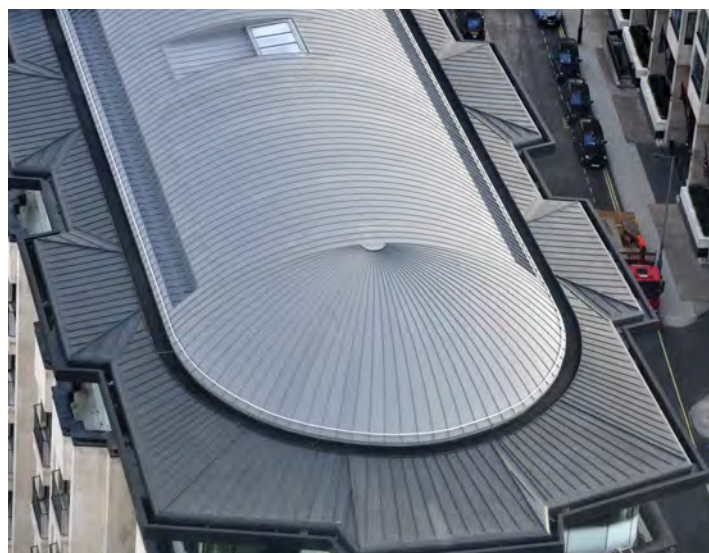
Suitable for use on roofs with pitches from 3° to 60°. The only solution for high humidity buildings (eg swimming pools), this system can be installed on plywood and steel decks to the manufacturer's specifications.

FOAMGLAS cellular glass insulation offers resistance in any type of humid situations. Tapered or uniform thickness cellular glass insulation is available in board or slab format. Double layering is possible. For further information on cellular glass insulation, please contact FOAMGLAS.

Structure

FOAMGLAS cellular glass insulation is adhered to the substrate using a cold adhesive; the staggered joints of the board are closely butted with the cold adhesive ensuring a vapour tight seal (no vapour barrier is required).

- The upper face of the cellular glass board has a bitumen and polyethylene protective layer.
- Galvanised steel plates are applied to the upper slab or board surface of the FOAMGLAS. Its bitumen upper surface is heated with a gas torch and the plates are inserted within the cellular glass insulation, forming a secure 'non thermal bridge' bond. The galvanised steel plates must be positioned in collaboration with the VMZINC® installer.
- A high performance bituminous membrane +3mm thick with a sanded finish is torch applied to the upper surface of the insulation with lapped joints, the flow of bitumen ensures the butted joints are sealed. This membrane covers the entire roof surface including the plates.
- Polyethylene film is installed to avoid any contact between the VMZINC® PLUS and the sanded torch-on bituminous membrane.
- The VMZINC® PLUS panels are fixed to this structure with VMZINC® clips screwed into the galvanised steel plates.

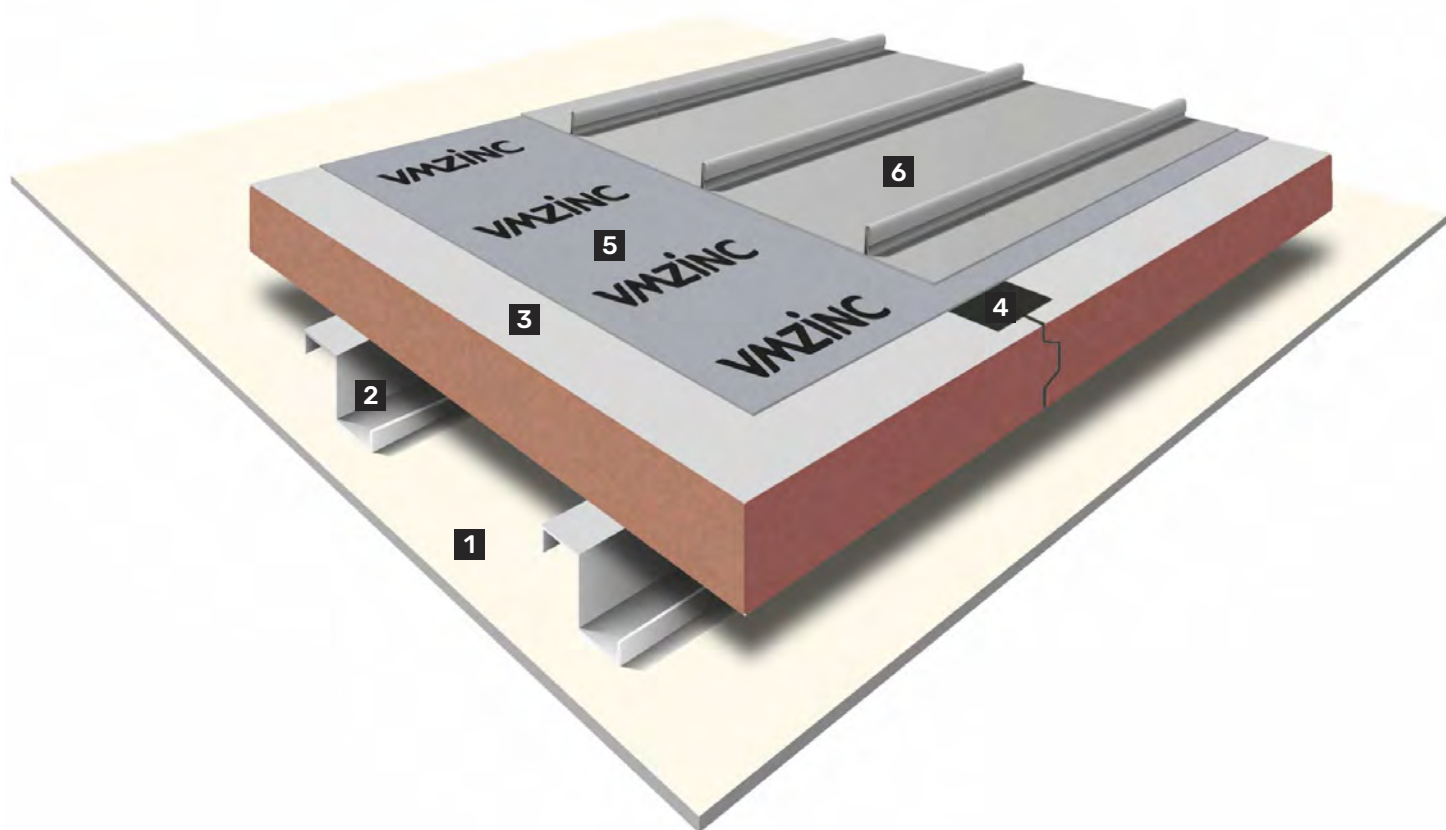


Note:

The information relating to the installation of insulation is indicative only. The choice and installation of these products will be according to the recommendations of the insulation manufacturers.

Download the technical drawings of
this roof build-up from our website
www.vmzinc.co.uk

Standing seam on insulated metal-faced panels



Key to construction build-up

- 1** Interior finish
- 2** Steel purlins
- 3** Insulated metal-faced panel (0.7mm steel thickness)
- 4** Aluminium-faced tape
- 5** VMZINC® Membrane
- 6** VMZINC® PLUS Standing Seam

Advantages of standing seam on insulated metal-faced panels

- BRE EN 15804 EPD.
- This solution provides good pull-out resistance
- Offers a fast track installation process over large areas
- Reduced thermal bridges
- Allows building to be temporarily weatherproofed rapidly



Standing seam on insulated metal-faced panels

Area of application

Suitable for buildings in 1 to 4 humidity classes (dwellings with high occupancy, sports halls, etc) and with pitches from 3° to 70°. The system can be used for wall cladding if a non-vented system is acceptable. For installation on metal-faced composite panels VMZINC® PLUS, with its specially protected underside, must be used. The outer skin must provide a minimum pull-out value of 50daN for the standing seam fixing clip (dynamic testing method).

Structure

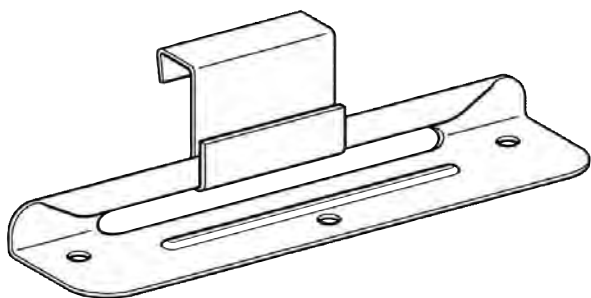
The insulated metal-faced composite panel must be made from galvanised steel on both the internal and external facing (minimum thickness 0.7mm for external facing). Fixings and clips must not inhibit the required expansion and contraction of the VMZINC® PLUS or cause any damage to the protective coating underneath.

The insulated metal-faced composite panel must provide a 100% vapour barrier. This is normally achieved using a panel with a vapour tight interlocking jointing system. It is the specifier's responsibility to ensure there is no risk of condensation in this type of roof construction and the use and humidity of the building should be considered before specifying this solution.

The warm side of the insulated panel joint must be sealed together with the top side. All joints and penetrations should be sealed appropriately.

The surface of the support that the zinc is to be laid on, must be even to within 2mm.

Clips and screws



It is important that all screws and clips used on an insulated metal panel must be flush to the surface of the panel within 2mm. For instances where this is not the case it is possible to use clips with a raised section that allows free thermal expansion and contraction of the zinc panel without any risk to the underside of the zinc.



Note:

The information relating to the installation of insulation is indicative only. The choice and installation of these products will be according to the recommendations of the insulation manufacturers.

Download the technical drawings of
this roof build-up from our website
www.vmzinc.co.uk

VMZINC® standing seam roofing



Studio Seilern

VMZINC® standing seam roofing



Farrells and Formation Architects

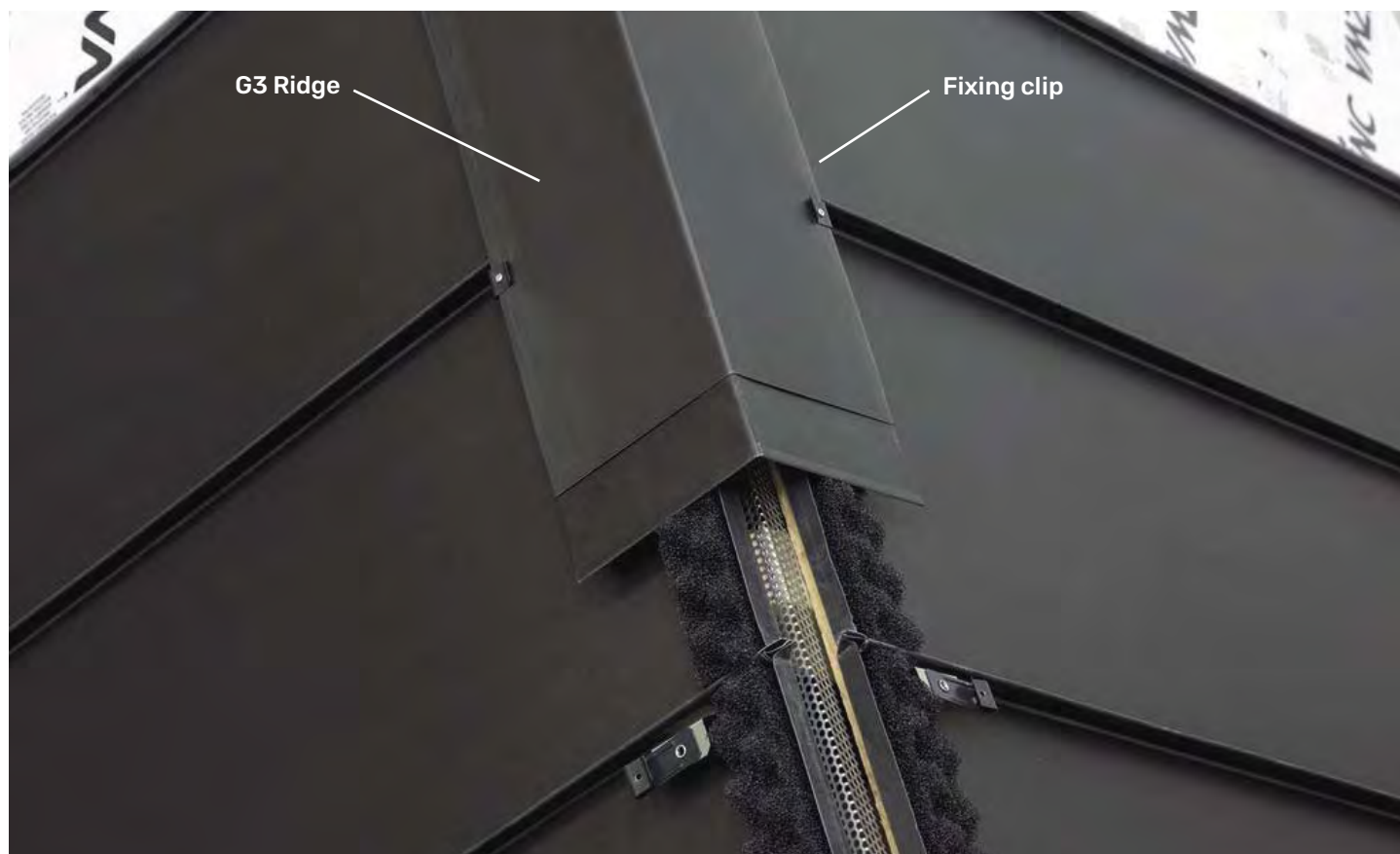


Urban Agency

Cold roofs (ventilated)

Introduction

Typical ridge detail



The VMZINC® G3 Ridge shown above:

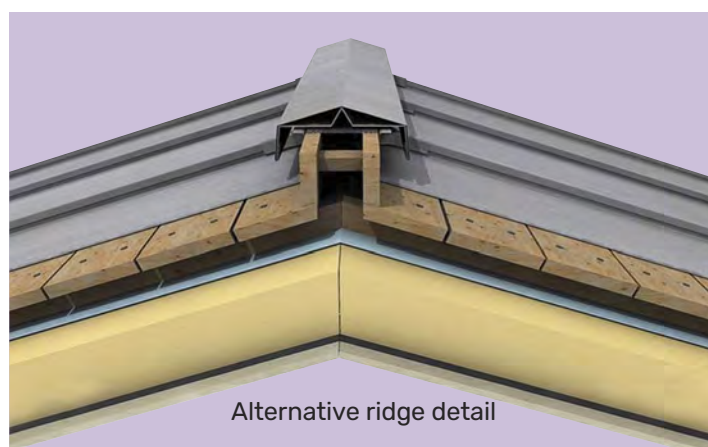
- Gives a sleek, aesthetic value to the roof
- Is a standard VMZINC® solution
- Is easy to install

VMZINC® PLUS

VMZINC® PLUS is a unique solution that offers a protective coating 60 microns thick on its underside to protect the zinc from possible corrosion. VMZINC® PLUS also allows all 10 available finishes to be installed on a cold vented roof.

Advantages of a cold vented roof

Traditional construction which has a long history and is covered by a Code of Practice 143-5:1964 and BS EN 501:1994. This type of build up can be used on roofs ranging from 3° to vertical as well as soffits.

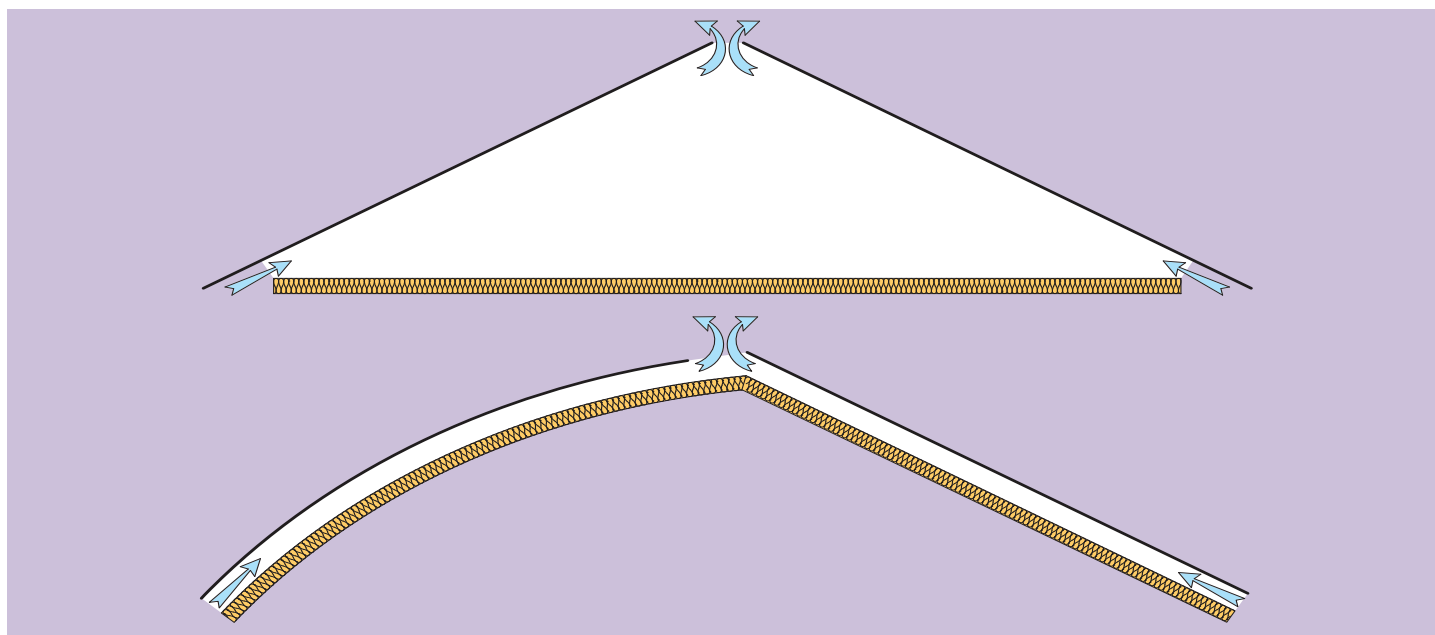


For more information contact us on
01992 921 300
or send an e-mail to
vmzinc.uk@vmbuildingsolutions.com

Cold roofs (ventilated)

Introduction

Typical cold roof arrangements



Air inlets and outlets are generally linear (at least 10mm wide) but can be individual (see photo). The ventilation must correspond to BS 5250: 2002.

Definition of cold roof in the UK

Cold ventilated roofs and warm non-ventilated roofs are two terms which do not always denote the same ideas to all building professionals. In order to put the cold ventilated roof system into context, we will refer to it as a roof where there is a continuous air space of at least 50mm between the substrate supporting the zinc and the insulation. This air space must be a vented space with openings generally at the eaves and the ridge. Linear air vents must be at least 10mm wide and are commonly protected by insect mesh. It is always good practice to include a vapour control layer in the build up and this should be installed on the warm side of the insulation.

Elements of the system

- VMZINC® PLUS must be used on plywood whereas VMZINC® is acceptable on open-gap softwood boards (see page 26)
- VMZINC® Membrane can be used to protect the insulation
- The substrate must be continuous and even, and the correct fixing clips must be used

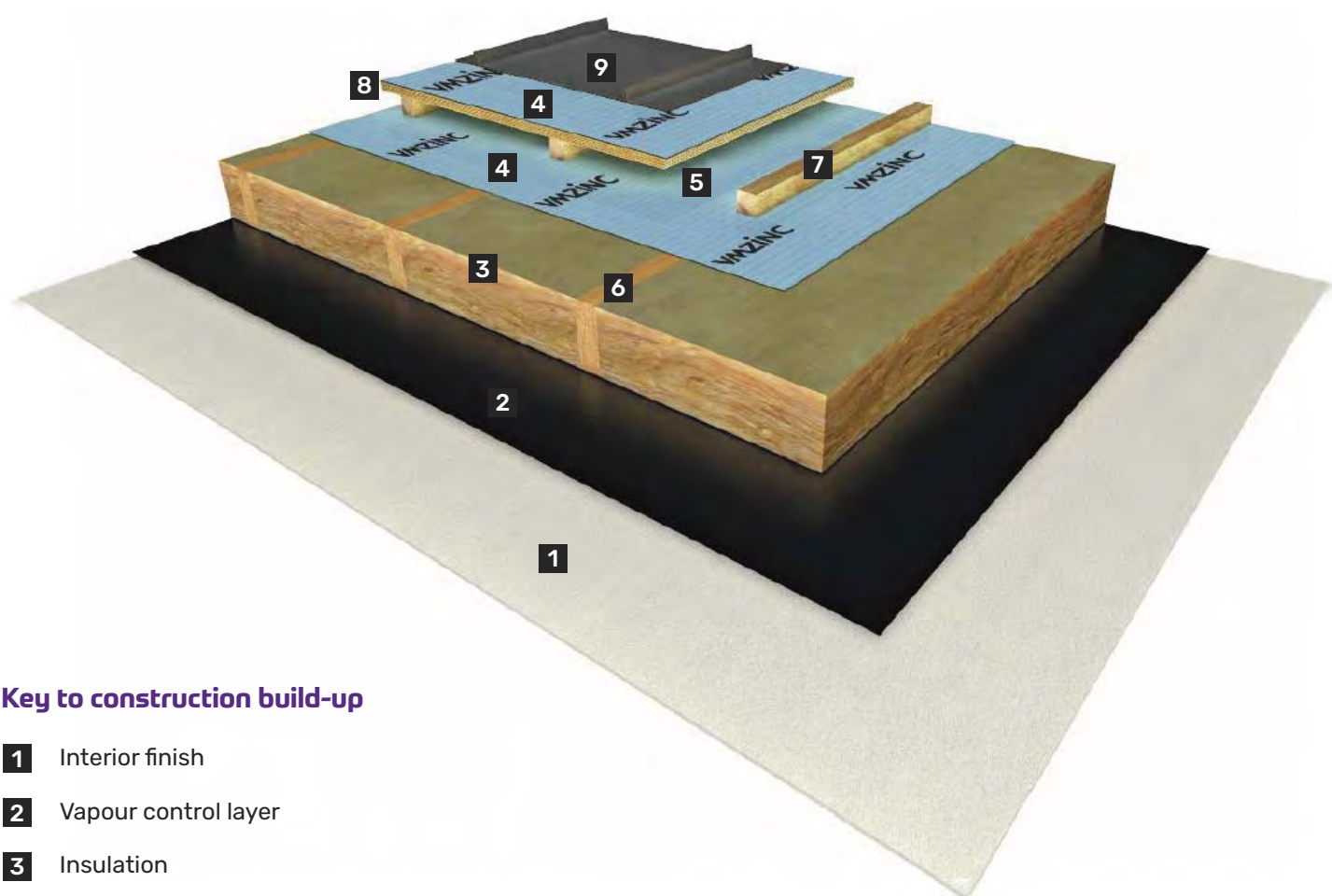
Cold roof standing seam constructions

With plywood **p24**

With open-gap timber boarding **p26**



Standing seam on vented plywood



Key to construction build-up

- 1** Interior finish
- 2** Vapour control layer
- 3** Insulation
- 4** VMZINC® Membrane
- 5** 50mm ventilated air space (minimum)
- 6** Rafter
- 7** Batten
- 8** 18mm thick plywood (see page 25 concerning temporary protection)
- 9** VMZINC® PLUS Standing Seam

Advantages of standing seam on vented plywood

- Provides a continuous rigid deck for the VMZINC® PLUS
- Plywood decking is readily available and widely used
- Excellent pull-out resistance
- BRE EN 15804 EPD



Standing seam on vented plywood

Area of application

Suitable for buildings in 1 to 4 humidity classes (dwellings with high occupancy, sport halls, etc) with pitches from 3° to the vertical. VMZINC® PLUS is installed on the plywood. A minimum 50mm continuous air gap must be left clear beneath the plywood. Continuous ventilation openings are made at the ridge and eaves. In order to maintain the integrity of the roof, a breather membrane should be installed on the cold side of the insulation, and a vapour control layer appropriate to the building's humidity levels laid on the warm side of the insulation.

Structure

VMZINC® PLUS must be used. VMZINC® Membrane can be used between the VMZINC® PLUS and the plywood, although this is optional but may have the advantage of protecting the plywood prior to the installation of the zinc. The ideal thickness of the plywood is 18mm and it must be weather and boil proof. WBP plywood is more precisely described as EN 314-2 (bond class 2) and EN 636-2 (timber performance). The substrate must be flush to within 2mm and all screws and nails must be countersunk. The 50mm air space must be continuous and vented by openings at the base and top of the roof which are generally linear vents at least 10mm wide protected by insect mesh and correspond to BS 5250: 2002. The VMZINC® membrane can be used to protect the insulation but the 50mm air space must not be compromised. It is also recommended to install a vapour control layer on the warm side of the insulation.

Prior to the installation of the VMZINC® PLUS roofing panels the plywood substrate must be kept dry (moisture content of less than 22%). One method of protecting the plywood is to cover it with VMZINC® Membrane. The VMZINC® Membrane does not have to be removed when the VMZINC® PLUS roof panels are installed.

Temporary protection of the plywood

VMZINC® PLUS can be installed directly over the plywood however it is important that this plywood is dry (moisture content below 22%). The plywood can be protected with a temporary roof, a tarpaulin or more commonly the VMZINC® Membrane. When correctly installed with the appropriate overlaps the VMZINC® membrane will temporarily 'dry in' the roof and has the added advantage of not having to be removed prior to installation of the VMZINC® PLUS panels.

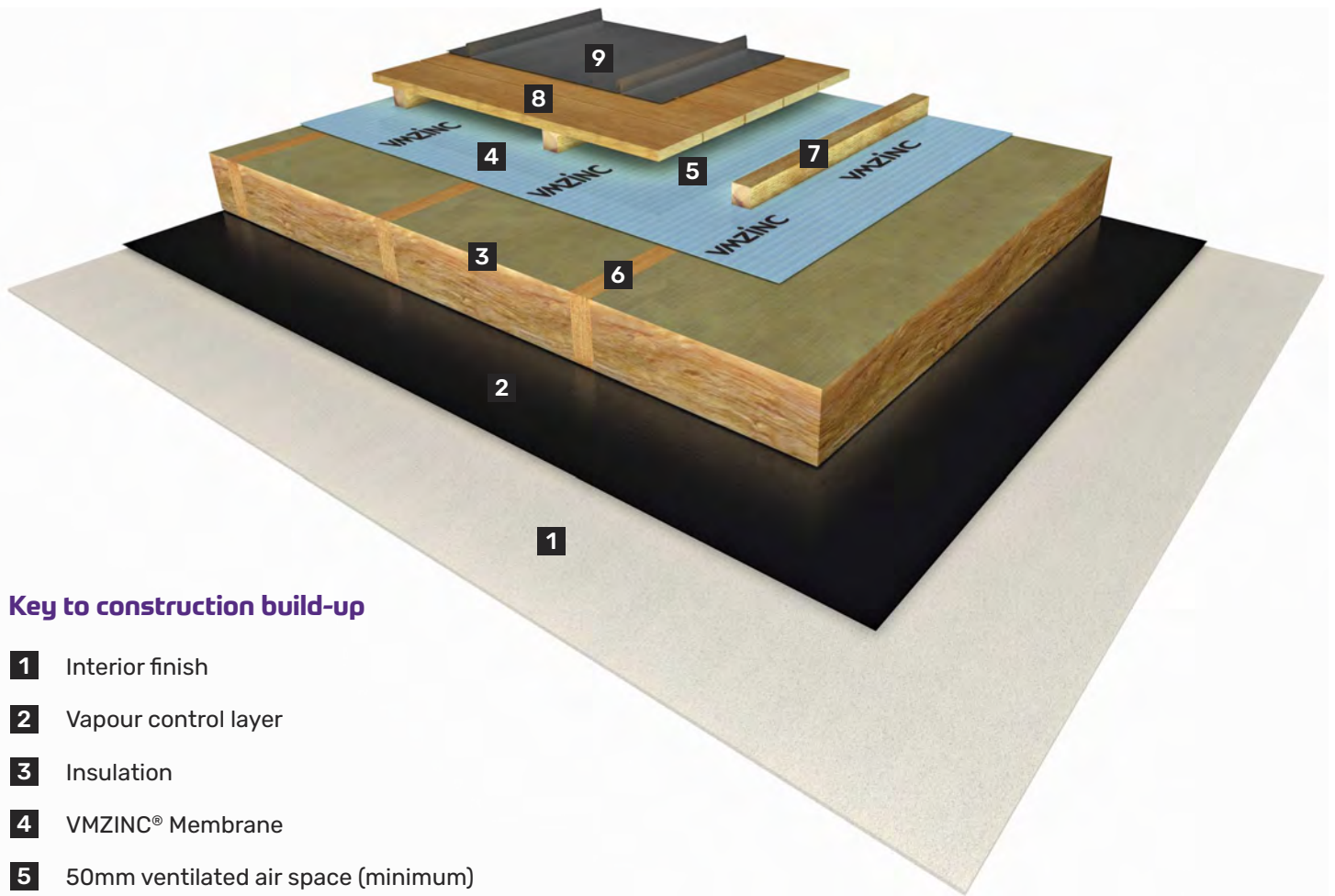


Note:

The information relating to the installation of insulation is indicative only. The choice and installation of these products will be according to the recommendations of the insulation manufacturers.

Download the technical drawings of
this roof build-up from our website
www.vmozinc.co.uk

Standing seam on open-gap timber boarding



Key to construction build-up

- 1** Interior finish
- 2** Vapour control layer
- 3** Insulation
- 4** VMZINC® Membrane
- 5** 50mm ventilated air space (minimum)
- 6** Rafter
- 7** Batten
- 8** 18mm thick open-gap timber boarding
- 9** VMZINC® PLUS Standing Seam

Advantages of standing seam on open-gap timber boarding

- A very versatile and easy to install substrate
- Flexible because it also permits complex shapes to be clad in zinc
- Excellent pull-out resistance
- Easy installation using traditional clips
- BRE EN 15804 EPD



Standing seam on open-gap timber boarding

Area of application

Suitable for buildings in 1 to 4 humidity classes (dwellings with high occupancy, sport halls, etc) with pitches from 3° to the vertical (as well as soffits). VMZINC® is installed on the roof boarding. A minimum 50mm continuous air gap must be left clear beneath the roof boarding. Continuous ventilation openings are made at the ridge and eaves. In order to maintain the integrity of the roof, a VMZINC® breather membrane should be installed on the cold side of the insulation, and a vapour control layer appropriate to the building's humidity levels laid on the warm side of the insulation.

Structure

VMZINC® must be installed directly over the open-gap softwood boarding without the use of any membrane. The boarding should be clean and dry, 100mm to 150mm wide, 18mm or 24mm thick, according to the rafter centres. Any wood treatment products (fungicides, insecticides) must be dry and completely neutral in relation to VMZINC®. See page 45.

The roof boards are fixed perpendicularly to the direction of the pitch leaving a 3mm to 5mm gap between them. They are securely fixed to the structure.

Maximum difference in height between roof boards should not be more than 1mm. The deflection measured under a rigid 600mm long straight edge cannot exceed 2mm in any direction. The roof board nails are countersunk in order to avoid any contact with the VMZINC®.

Metal salt solutions must not be used on the timber boarding.



Note:

The information relating to the installation of insulation is indicative only. The choice and installation of these products will be according to the recommendations of the insulation manufacturers.

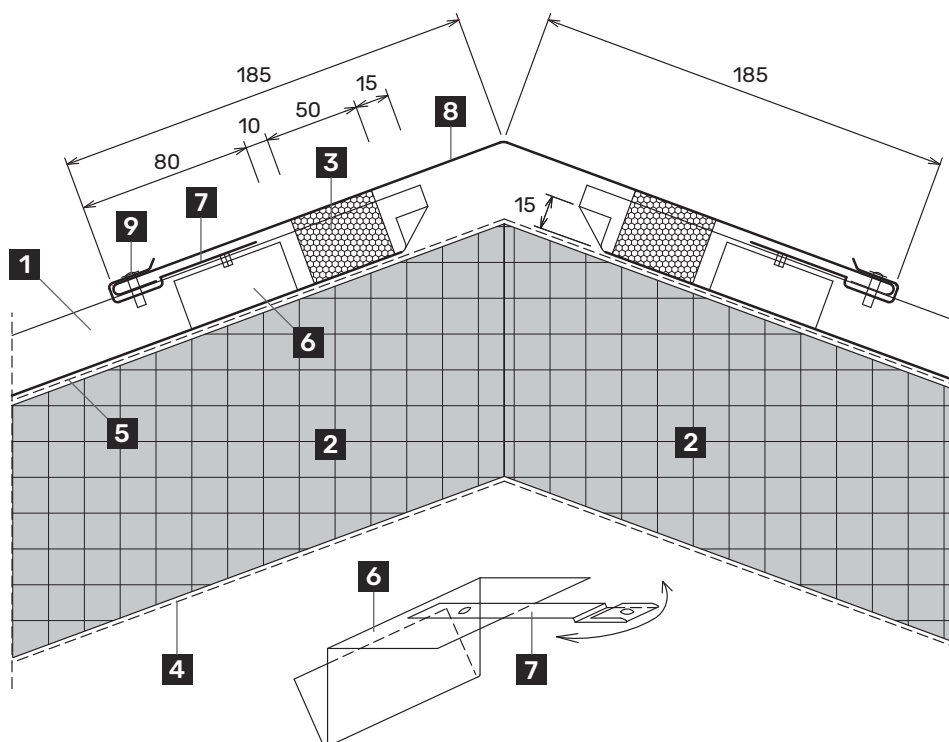
**Download the technical drawings of
this roof build-up from our website
www.v mzinc.co.uk**

Technical drawings

Download the complete set
of technical drawings
from our website
www.vmzinc.co.uk

Ridge detail

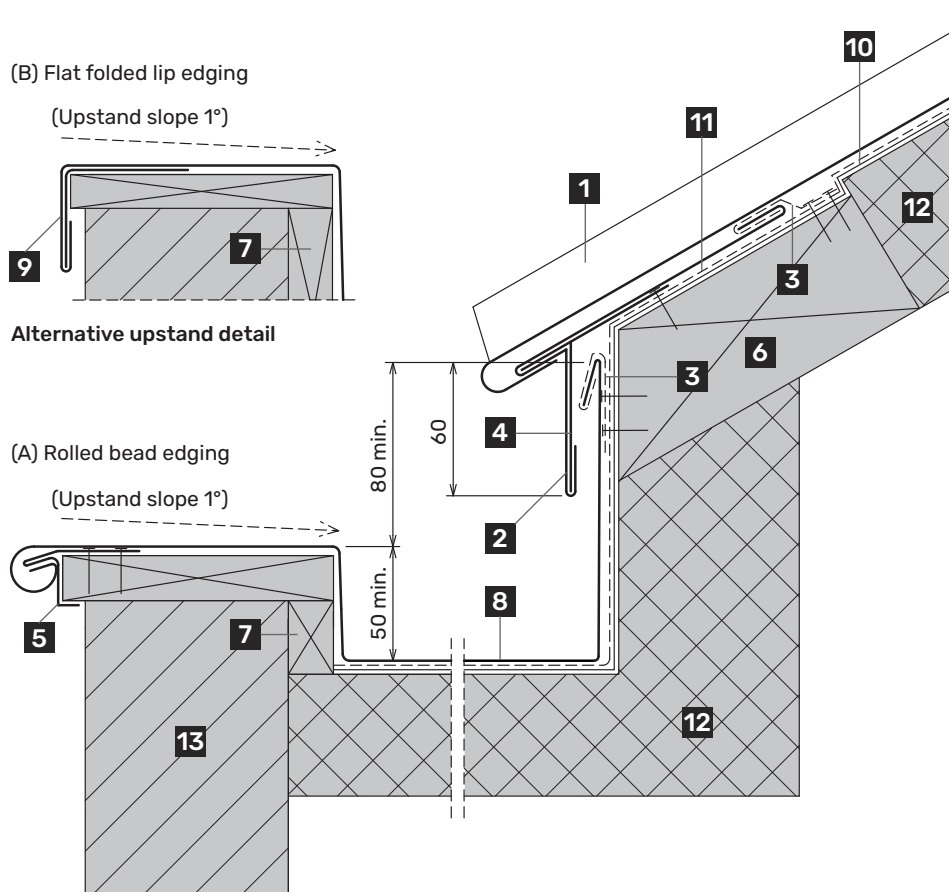
The ridge detail uses
Standing seam on rigid
insulation –
Structural Roof construction
(See p14)



- 1 VMZINC® PLUS Standing seam
- 2 Insulation: mineral wool or PIR
- 3 Decompression strip G3
- 4 Aludex Max vapour barrier supported by plywood or metal deck
- 5 VMZINC® Membrane
- 6 VMZINC® Ridge Clip G3 (fixed part)
- 7 VMZINC® Ridge Clip G3 (moving part)
- 8 VMZINC® Ridge G3
- 9 Clip fixing in accordance with the specification

Box gutter (inside wall) detail

The box gutter detail uses
Standing seam on cellular
glass insulation –
Compact Roof construction
(See p16)



- 1 VMZINC® PLUS Standing seam
- 2 VMZINC® PLUS continuous eaves apron strip
- 3 VMZINC® PLUS sheet clip, 0.7mm thick, width 80mm, 2 per m
- 4 VMZINC® PLUS continuous folded strip, 0.7mm thick
- 5 VMZINC® PLUS continuous apron strip, 0.7mm thick
- 6 Timber blocking, 5mm thinner than the insulation
- 7 Roof boarding
- 8 VMZINC® PLUS boxed gutter
- 9 VMZINC® PLUS continuous sheet strip, 0.7mm thick
- 10 Roofing membrane in accordance with the specification
- 11 PE film
- 12 Cellular glass insulation
- 13 Wall

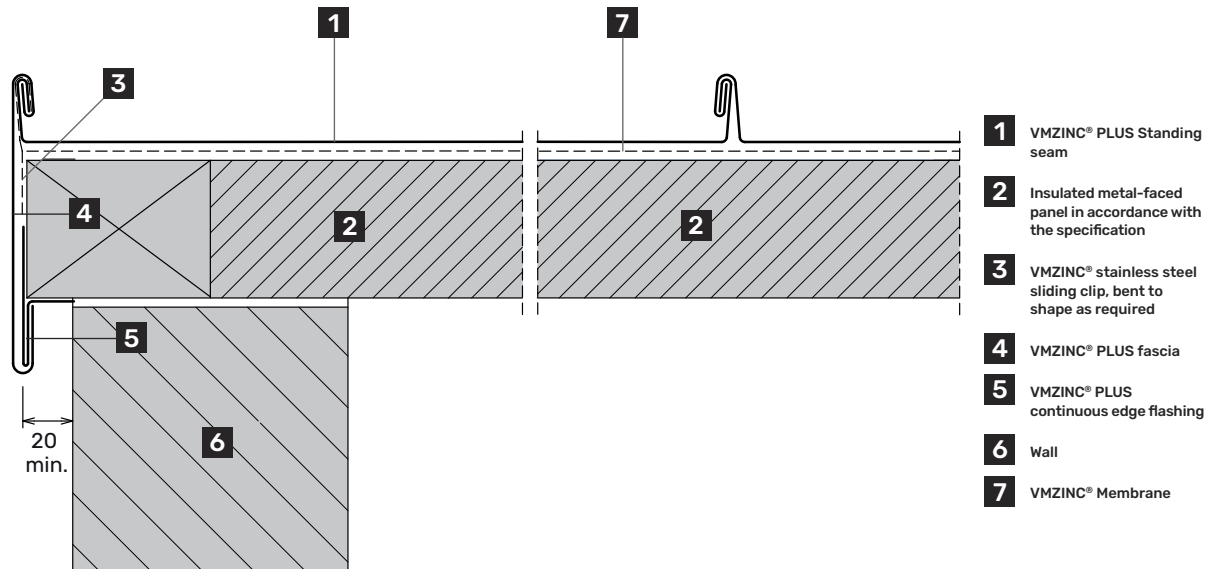
All dimensions in mm

Technical drawings

Download the complete set
of technical drawings
from our website
www.vmzinc.co.uk

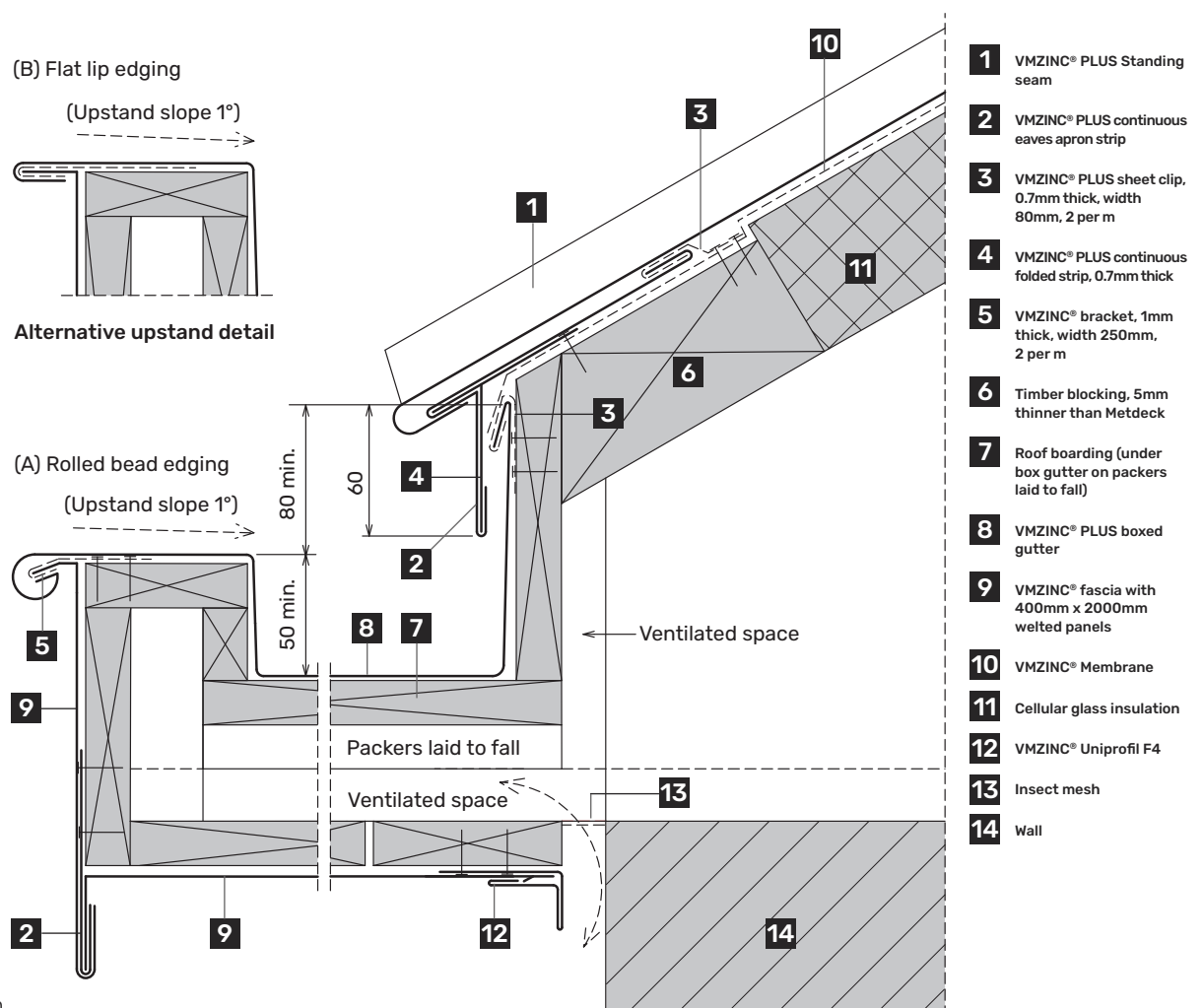
Verge detail

The verge detail uses
Standing seam on insulated
metal-faced panels
construction
(See p18)



Box gutter (outside wall) detail

The box gutter detail uses
Standing seam on cellular
glass insulation –
Compact Roof construction
(See p16)



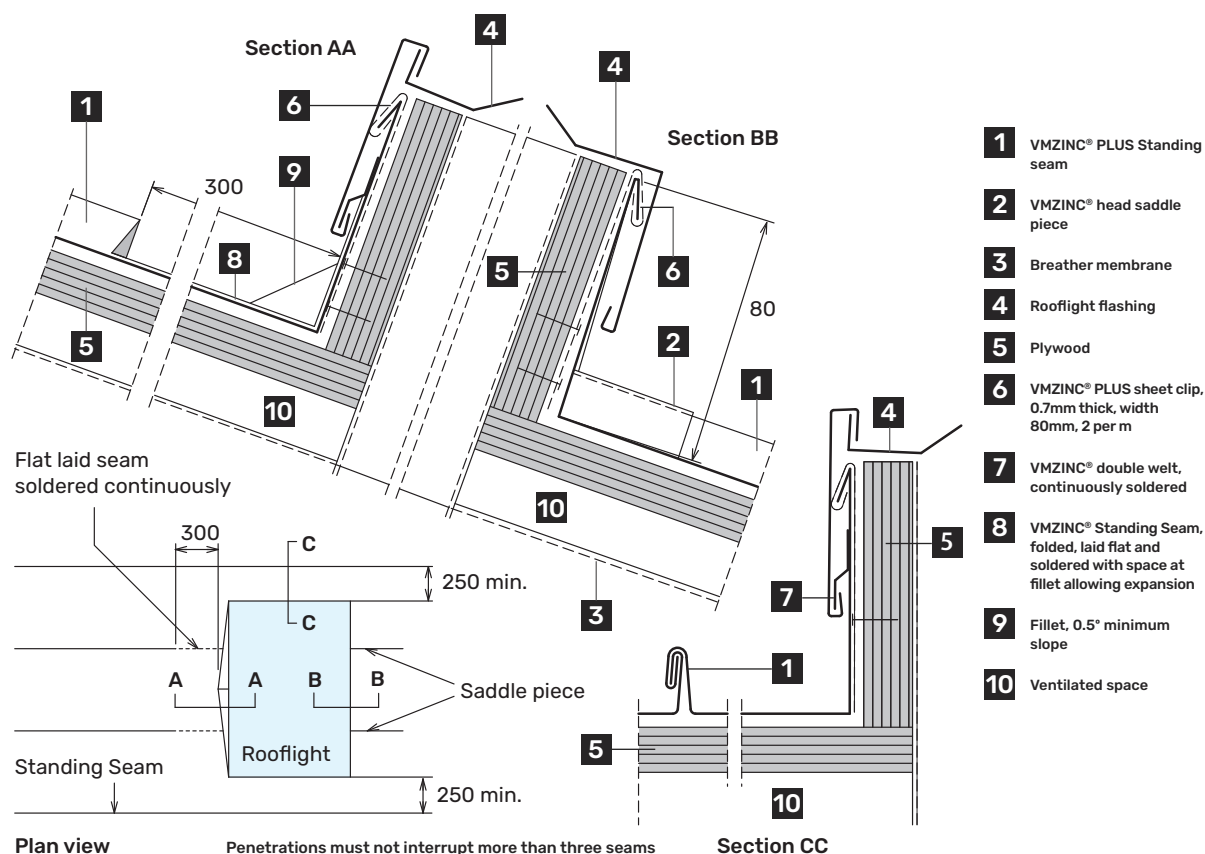
All dimensions in mm

Technical drawings

Download the complete set
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from our website
www.vmzinc.co.uk

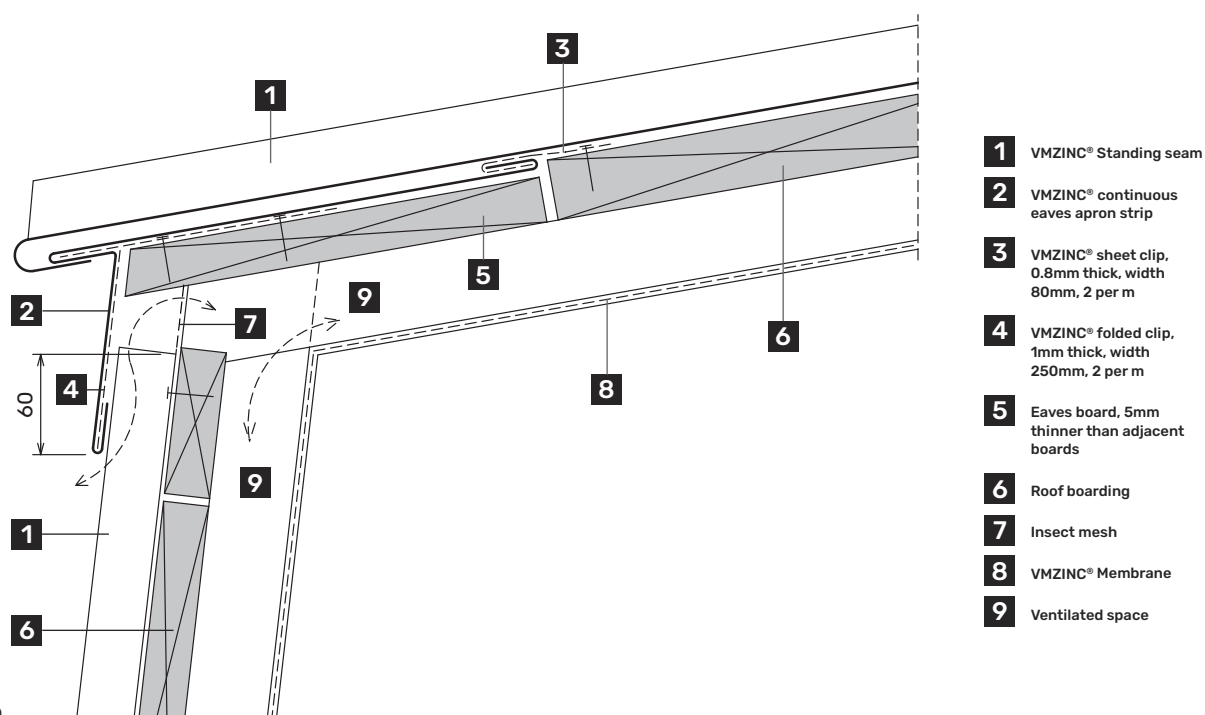
Rooflight detail

The rooflight detail uses
Standing seam on vented
plywood construction
(See p24)



Mansard detail

The mansard detail uses
Standing seam on open-gap
timber boarding
construction
(See p26)



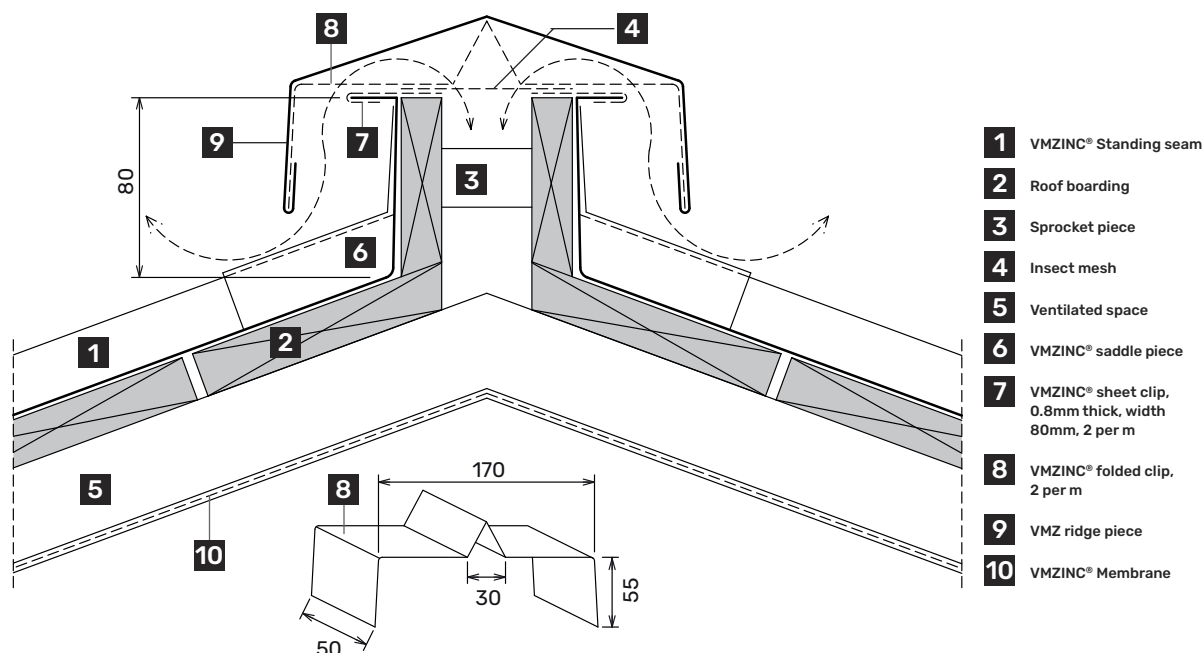
All dimensions in mm

Technical drawings

Download the complete set
of technical drawings
from our website
www.vmpzinc.co.uk

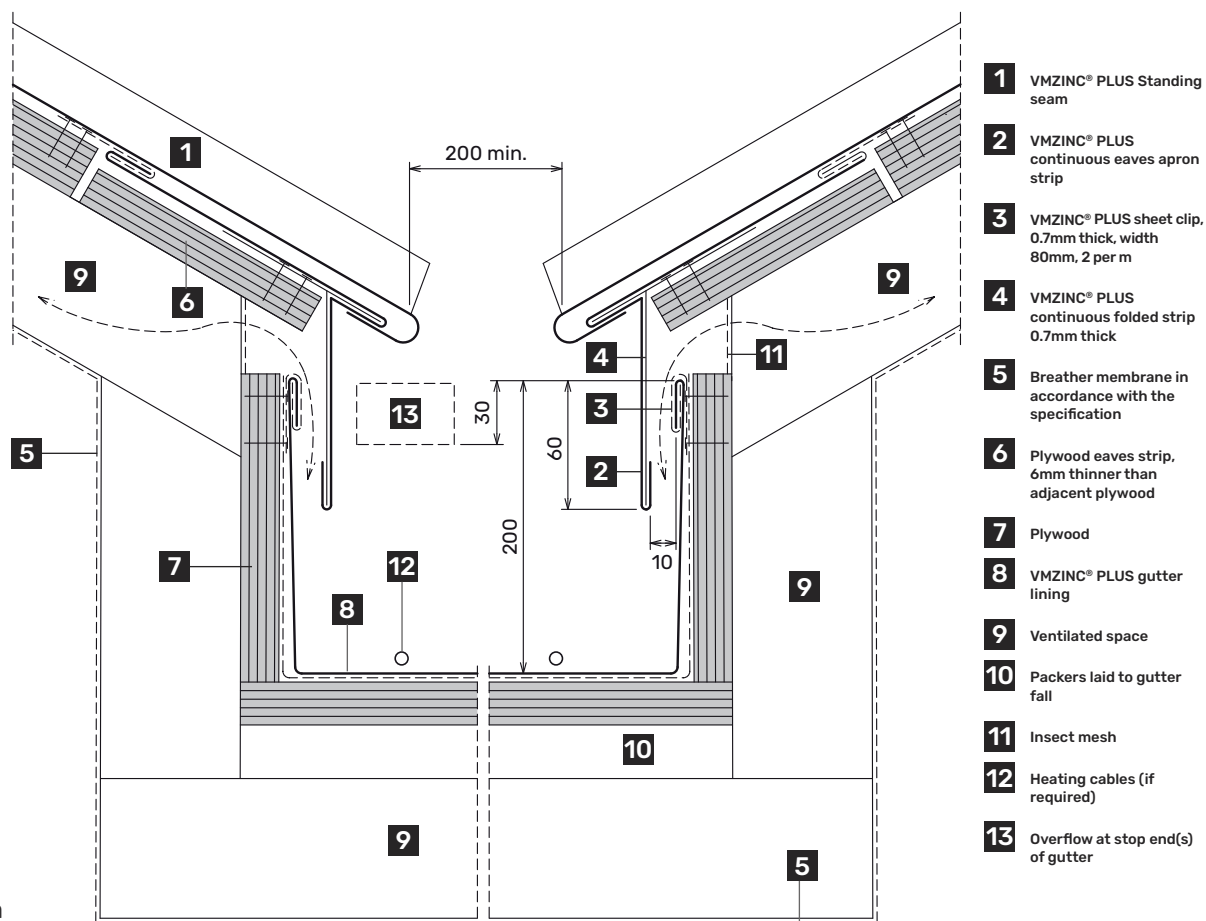
Ventilated ridge detail

The ventilated ridge detail
uses Standing seam on
open-gap timber boarding
construction
(See p26)



Box valley gutter detail

The box valley gutter detail
uses Standing seam on
vented plywood construction
(See p24)



All dimensions in mm

Half Round rainwater system

A complete gutter and downpipe range

Introduction

Through the use of concealed brackets, the Half Round rainwater system provides a stylish, flowing gutter line. The surface is resistant to the accumulation of dirt and debris thereby ensuring that good water flow and discharge rates are maintained.

Designed to be easily and quickly installed, the Half Round rainwater system's concealed brackets (fixed at 400mm max centres) simply clip onto the gutter sections, which in turn slide and twist together. The gutter joints are then bonded and sealed using a high performance gun-applied one component MS polymer solvent-free adhesive, VMZINC®-G.

Downpipes are secured to the wall using the simple but ingenious V-lock and self-locking bracket assembly. Downpipes are then push-fitted together but are not bonded, allowing the joints to expand and contract to accommodate varying thermal conditions.

Benefits

- Comes in ready-to-use kit form
- Stylish flowing gutter line through use of concealed galvanised steel brackets
- Self-locking downpipe brackets
- Sleeve connection on pipes
- QUARTZ-ZINC®, ANTHRA-ZINC® and PIGMENTO® finishes
- Lightweight yet durable
- Quick to install
- Low maintenance
- Long life expectancy
- Aesthetically distinctive
- Strength not affected by ultraviolet light
- Good flow rates and discharge of water
- Colour does not deteriorate as a result of ultraviolet light



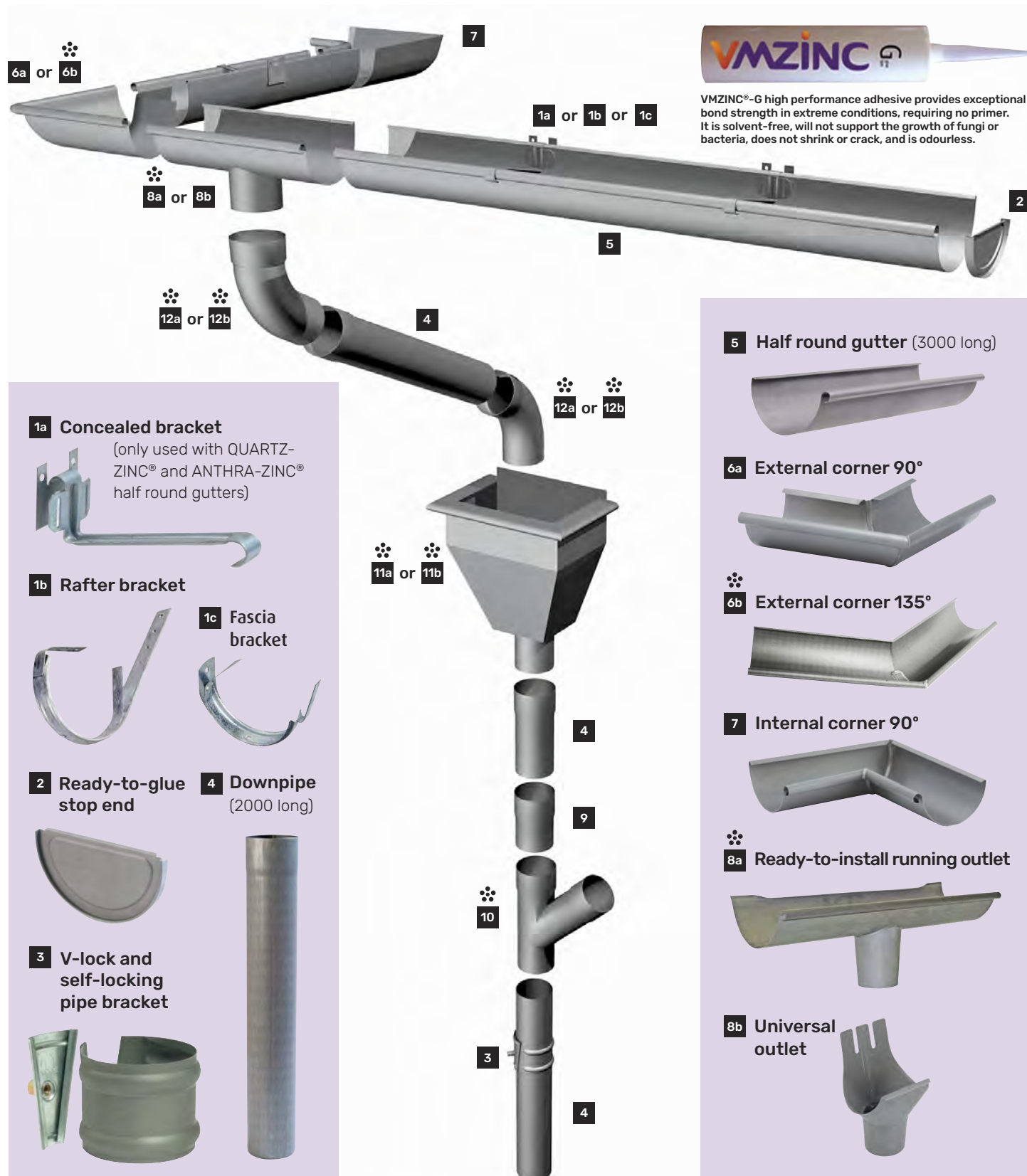
Half Round rainwater system

A complete gutter and downpipe range



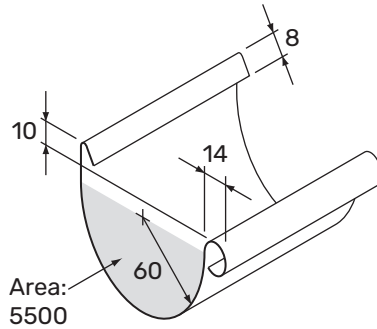
Half Round rainwater system

All gutters, pipes and fittings are available in QUARTZ-ZINC® and ANTHRA-ZINC®. They are also available in PIGMENTO® except where indicated with an asterisk.

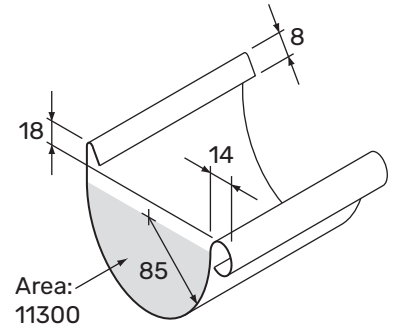


Half Round rainwater system

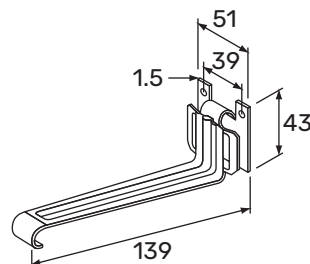
All gutters, pipes and fittings are available in QUARTZ-ZINC® and ANTHRA-ZINC®. They are also available in PIGMENTO® except where indicated with an asterisk



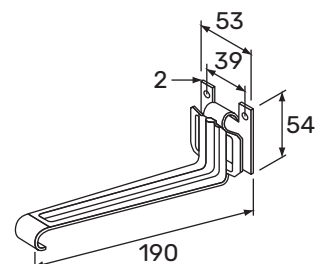
**Half round gutter (3000 long):
Type 250**



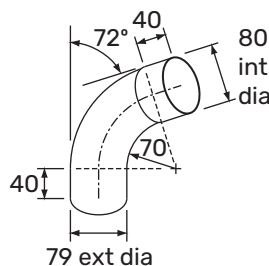
**Half round gutter (3000 long):
Type 333**



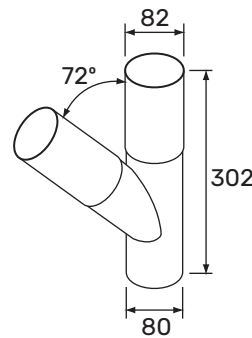
**Concealed bracket:
Type 250**



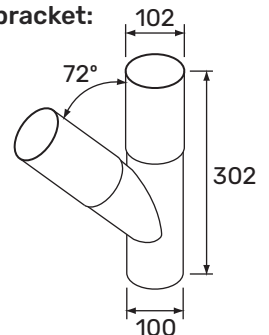
**Concealed bracket:
Type 333**



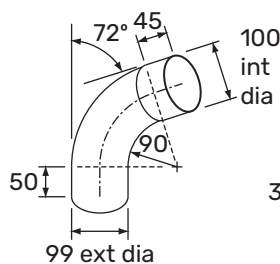
Bend: 80 dia



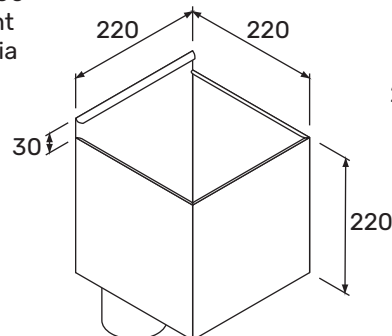
Y branch: 80 dia



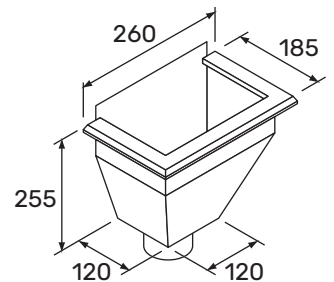
Y branch: 100 dia



Bend: 100 dia



**Box hopper head:
Outlet size 100**



**Hopper head:
Outlet size 80 or 100**

All dimensions in mm

Half Round rainwater system

Installation procedures

Installing the gutters



1 Using a rule, make a chalkline setting the fall (min 1:200) towards the running outlet and required position of the downpipe.



2 Cut the running outlet to the required length, starting from the rolled front edge.



3 Use the VMZINC® adhesive to seal and fix the stop end. To avoid cuts from edges, always wear gloves when handling zinc components.



4 Always use two concealed brackets to secure the running outlet.



5 Firmly fix the prepared running outlet according to the chalkline.



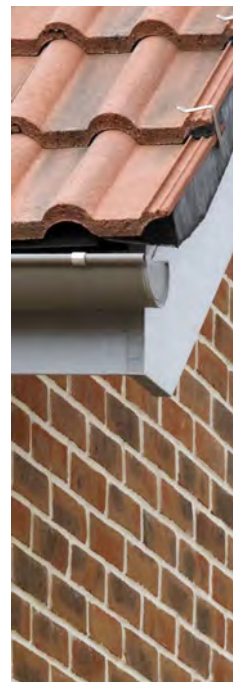
6 As for the running outlet, when cutting gutter to the required length, always saw from the rolled front edge first.



7 Clip concealed brackets to the cut lengths of gutter at 400mm max centres.



8 Secure each bracket to the gutter by folding in the two tabs. Then thoroughly clean the gutter joints before gluing.



Half Round rainwater system

Installation procedures

Installing the gutters



9 Apply two, thin, parallel beads of VMZINC®-G adhesive to the inner surface of the running outlet at max 50mm from the edge.



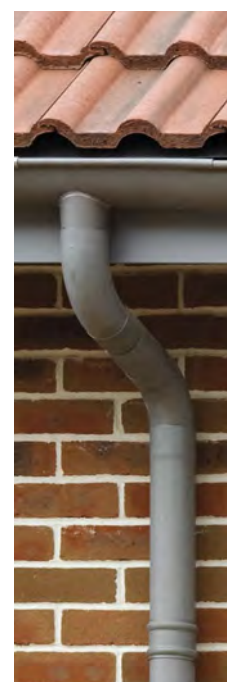
10 Insert the prepared gutter into the already installed running outlet via the rolled front edge first. Ensure a 50mm min overlap.



11 Fix the gutter brackets according to the chalkline.



12 Finally, fit the other stop end.



Installing the downpipes



1 Take two bends and measure the distance from the wall.



2 Once measured, fit the two bends together. It may be necessary to extend the assembly using a piece of downpipe.



3 At downpipe joints, mark positions for the V-locks at every 2 metres (maximum). Then firmly screw-fix the V-lock to the wall.



4 Place the self-locking bracket on the end of each pipe, then slide the assembly neatly into the V-lock to complete the installation.

Box gutters and other profiles

Complete gutter and downpipe ranges

Introduction

As well as the half round rainwater system VMZINC® offers a wide range of other gutter shapes and sizes that offers scope for use with buildings of varying style and function. These gutters have been developed over many years and have been in widespread use in Europe for all types of buildings in both the new build and refurbishment sectors.

The varying profiles allow the right gutter to be matched with the right architecture. The use of soldered joints for gutters provides a low maintenance jointing solution that has been used for over two hundred years and requires virtually no maintenance throughout the building's design life.

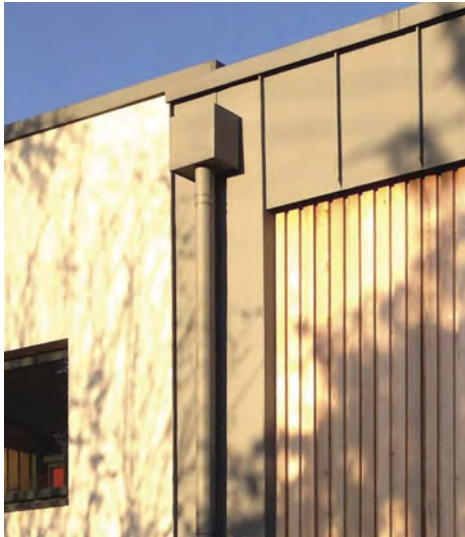
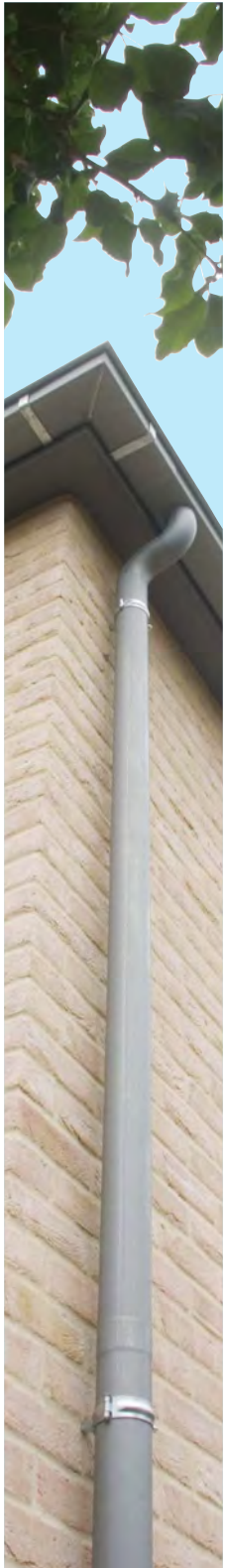
As with all VMZINC® solutions the products are in accordance with the BRE Global certification scheme and carry an Environmental Product Declaration, EN 15804. The box gutters and other profiles are manufactured from solid pre-weathered zinc so will not discolour, distort or become brittle over time. Due to the purity of rolled zinc used, cut edges will not corrode as the metal develops a natural self-protecting patina. By contrast, systems which utilise powder coated and even zinc-coated finishes may be susceptible when gutter lengths are cut or to surface abrasion. VMZINC® rainwater systems suffer no adverse effects of surface deterioration (surface staining is possible on non-rinsed surfaces within 1km of the sea) and, with the Box rainwater system in particular, faceted details can be accommodated without the need for bespoke components.

VMZINC® gutters are often used in conjunction with other zinc products including the ornaments range which produces dormer windows, finials as well as bespoke ornate roofing products. The gutters can also be used as an elegant addition with slate and tile roofs.



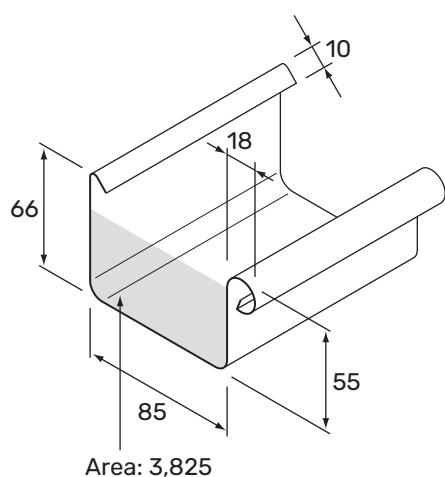
Box gutters and other profiles

Complete gutter and downpipe ranges



Box gutters and other profiles

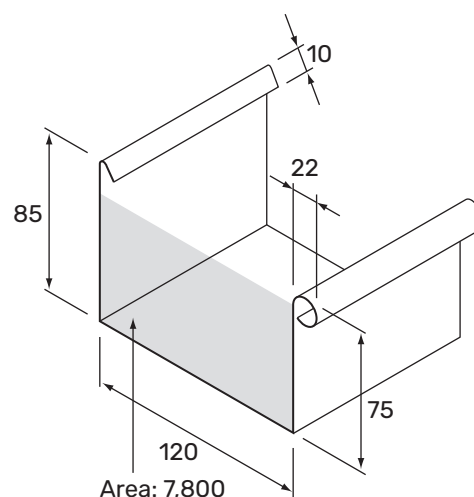
Gutters and fittings available in QUARTZ-ZINC®, ANTHRA-ZINC® and Natural Zinc



Box gutter: Type 250
(3000, 4000, 5000 or 6000 long)



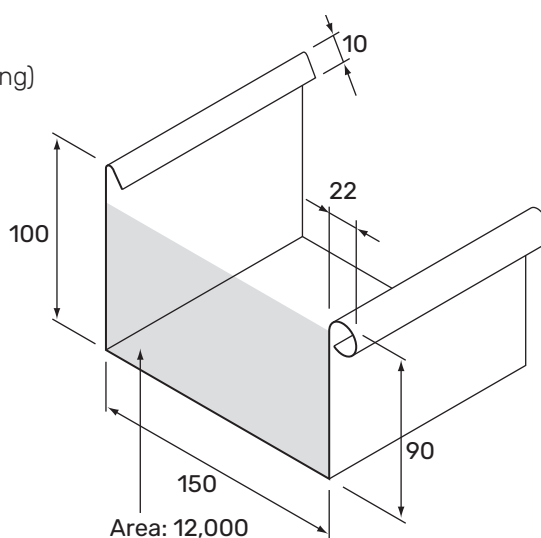
Typical external corner 90°
(Internal 90° corners also available)



Box gutter (3000 long): Type 333



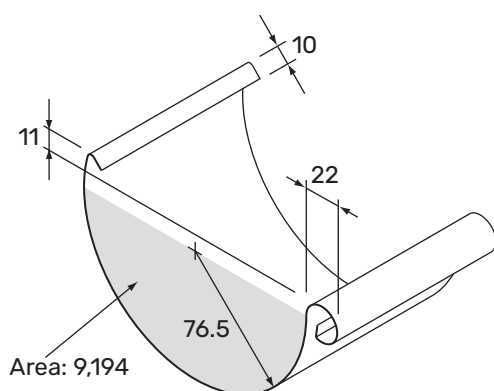
Rafter bracket



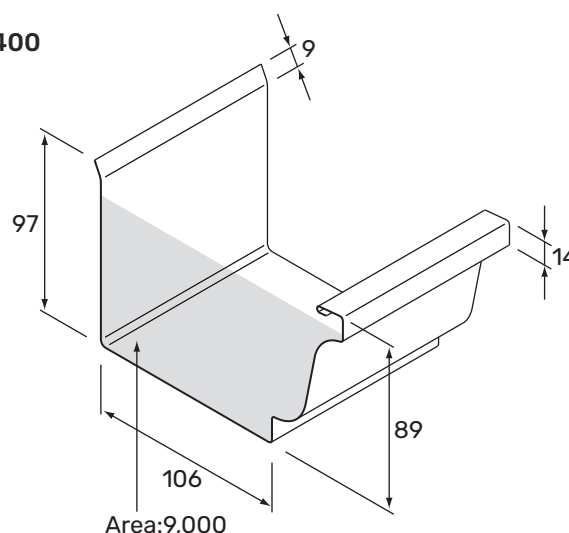
Box gutter (3000 long): Type 400



Stop end
(not available in all finishes
for all profiles)



**Half round gutter
for underslung bracket
(3000, 4000 or 5000 long):
Type 333**

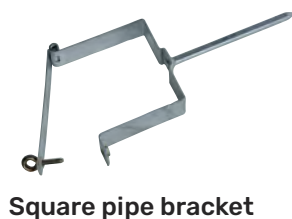
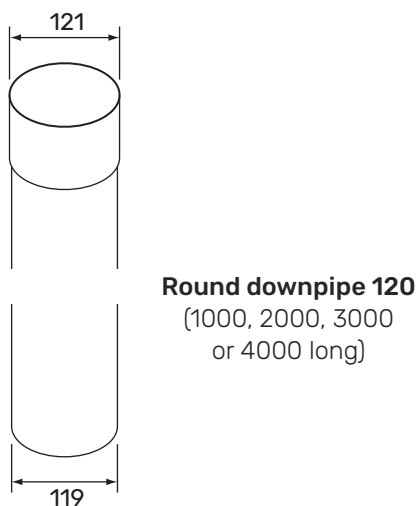
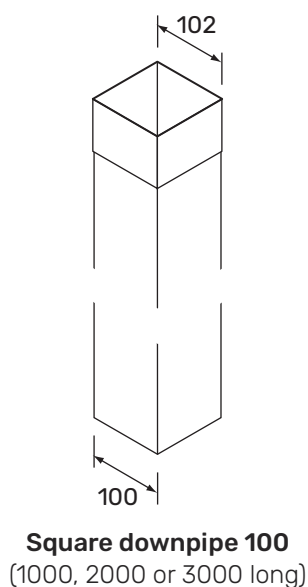
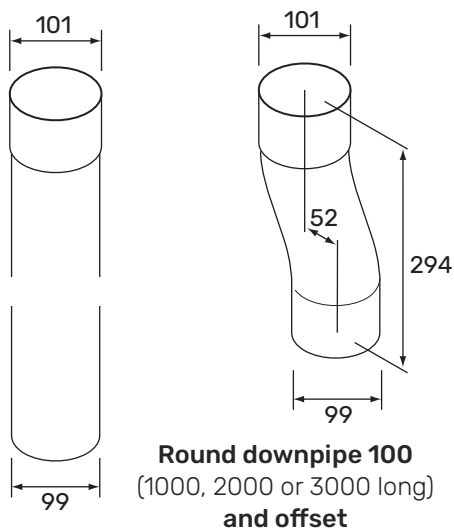
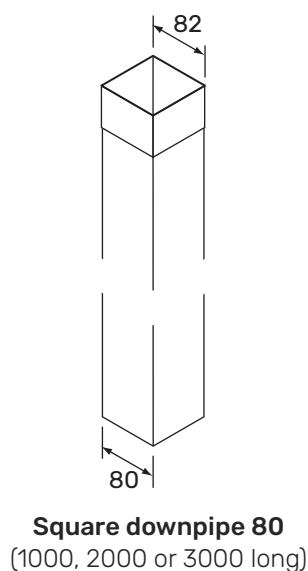
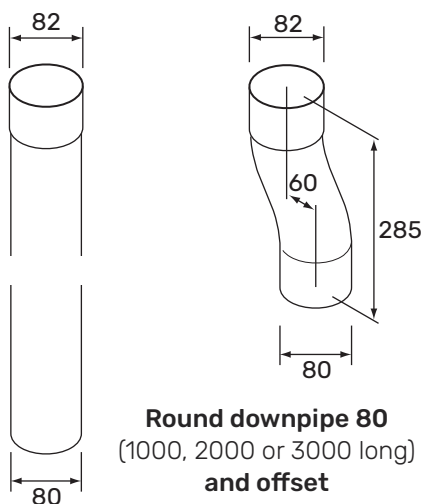


Ogee gutter (4000 or 5000 long): Type 333

All dimensions in mm

Box gutters and other profiles

Pipes and fittings available in QUARTZ-ZINC®, ANTHRA-ZINC® and Natural Zinc



The majority of VMZINC® gutter brackets whether they be hidden, underslung fascia fix or underslung rafter fix are manufactured from galvanised steel. However we also supply a number of underslung gutter brackets which are black powder coated. Please consult us for further information. For VMZINC® round downpipes, the selflocking brackets are made from zinc but the V-lock plate is manufactured from galvanised steel. As with the gutter brackets the traditional down pipe brackets are made from galvanised steel. However we also supply a number of brackets which are black powder coated for both round and square downpipes. Please consult us for further information.

Powder coated gutter brackets and downpipe brackets should be considered in locations within 5 km of the sea.

Non-standard 304 stainless steel brackets and 304 stainless steel black powder coated brackets are also available upon request.

Box gutters are also available in the PIGMENTO® and AZENGAR® finishes, however these are non-standard products and therefore please consult us for further information. As the PIGMENTO® finish is only applied to one side of the zinc the front bead on gutters will have a QUARTZ-ZINC® aspect.

As with all zinc products some marks are possible on non-rinsed surfaces, especially in coastal environments. Whilst these marks will not adversely affect the integrity of the zinc they may affect its aesthetics.

All dimensions in mm

General recommendations for gutters

Flow rates using various gutter and downpipe combinations

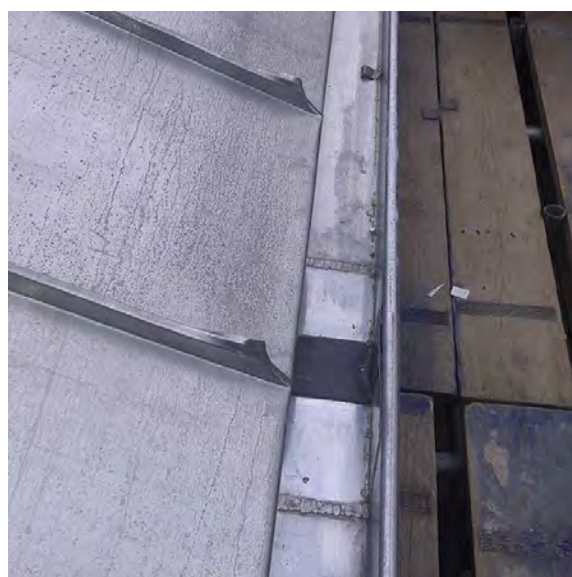
Gutter profile	Gutter size (mm)	Downpipe size* (mm)	Flow rate (l/s)	Maximum roof area** (m²)
Half round 250	60 radius	80 dia or 80 x 80	1.89	37
Half round 333	85 radius	80 dia or 80 x 80	2.6	52
Half round 333	85 radius	100 dia or 100 x 100	4.6	92
Half round 333	76.5 radius	80 dia or 80 x 80	2.6	52
Half round 333	76.5 radius	100 dia or 100 x 100	3.5	75
Box 250	85 x 66	80 dia or 80 x 80	1.0	20
Box 333	120 x 85	80 dia or 80 x 80	2.6	52
Box 333	120 x 85	100 dia or 100 x 100	2.61	52
Box 400	150 x 100	80 dia or 80 x 80	2.6	52
Box 400	150 x 100	100 dia or 100 x 100	4.6	92
Ogee 333	106 x 97	80 dia or 80 x 80	2.6	52
Ogee 333	106 x 97	100 dia or 100 x 100	3.2	64

***Note that the flow rates for round and square downpipes are the same:
i.e. round 80 and square 80 are both 2.6 l/s
i.e. round 100 and square 100 are both 4.6 l/s**

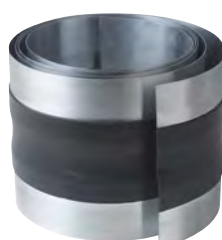
****Based on rainfall of 0.05 l/s/m².**

Correct design to BS EN 12056-3:2000, in conjunction with adequate maintenance, will ensure that the roof drainage system does not cause any problems during the life of the building.

Soldered gutters must allow for thermal movement. Traditional high point movement joints can be used as can soldered expansion joints. These must be installed between fixed points (eg outlets) with a maximum distance between expansion joints of 8m. Hanging gutters should include falls of at least 1:200. Internal box gutters must have minimum falls of 1:100 and include expansion joints and overflows. Other than internal gutters that combine a parapet in one piece, internal gutters should be 200mm deep.



Expansion joint soldered to gutter



Expansion joint



Downpipe outlet starter soldered to gutter

VMZINC® rainwater specification guidelines

Half Round rainwater system, Box gutters and other profiles

Introduction

Specification guidelines for VMZINC® Half Round, Box gutters and other profiles are given below.

For full specification advice, contact VMZINC®. Bespoke specifications are also available.

Specification guidelines

SYSTEM PERFORMANCE

General

Design Standard: To BS EN 12056-3, clauses 3-7.

Collection and Distribution of Rainwater: Fully complete, and without leakage or noise nuisance.

Design Parameters: Design rate of rainfall as per BS EN 12056-3: 2000, National Annex NB.2 - Category 1.

PRODUCT DESCRIPTION

Half Round rainwater system, Box gutters and other profile rainwater systems

Gutters, downpipes and fittings to
EN 988: Zinc, copper and titanium

Manufacturer
VMZINC®, Collier House, Mead Lane, Hertford, Herts SG13 7AX.

Half Round rainwater system gutter profiles and sizes
Half round – 120mm, 170mm.

Half Round rainwater system downpipe profiles and sizes
Round – 80mm, 100mm

Box gutters and other profiles - gutters

- Half round – 153mm
- Box – 85 x 66mm, 120 x 85mm, 150 x 100mm
- Ogee – 106 x 97mm

Box gutters and other profiles - downpipes

- Round – 80mm, 100mm, 120mm
- Square – 80mm, 100mm

Material
EN 988: Zinc, copper and titanium

Finishes
ANTHRA-ZINC®, QUARTZ-ZINC®, PIGMENTO®

Accessories

- Concealed brackets for gutter fixing
- V-lock/self-locking bracket assembly for downpipe fixing
- Gutter stop ends
- Internal, external gutters
- Running outlets
- Bends, offsets
- Y branches
- Hopper heads
- Rainwater diverters

Joining methods for Half Round rainwater system

- Gutters – glued with VMZINC®-G adhesive
- Downpipes – loose-fitted, not glued

Joining methods for Box gutters and other profiles

- Gutters soldered in accordance with manufacturer's recommendations
- Downpipes loose-fitted

EXECUTION PROCEDURES

Preparation

Before commencing work on the rainwater systems, ensure:

- Below ground drainage is ready to receive rainwater. Alternatively, make temporary arrangements for dispersal of rainwater without damage or disfigurement of the building fabric and surroundings.
- Painting of surfaces which will be concealed or inaccessible, is completed.

Installation generally

- Avoid contact with copper or areas washed by copper to prevent possibility of electrolytic corrosion.
- Compatible and incompatible timber species are given on page 45.
- Other rainwater systems only – Allow for thermal and building movement.
- Adequately protect gutters/pipework from damage and distortion during construction.
- Fit purpose-made temporary caps to downpipes to prevent ingress of debris.

Setting out gutters

- Set out to a true line and even gradient of at least 1 in 200 to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points 50 mm (maximum) below the roof.
- Align outlet positions with connections to below ground drainage, unless shown otherwise on drawings.

Fixing and jointing gutters

Half Round rainwater system

- Clip concealed brackets to gutters at 400mm centres and fold in tabs to secure.
- Use two concealed brackets to secure running outlets.
- Apply VMZINC®-G adhesive to each clean and dry gutter joint.
- Slide and twist gutter sections together.
- Screw-fix bracket/gutter assemblies to supporting background.
- Ensure roofing underlay is dressed into gutter.

Box gutter and other profile rainwater systems

- Underslung brackets should be at maximum 600mm centres.
- Soldered – see soldering recommendations.

Fixing and jointing downpipes

Half Round rainwater system

- Using the v-locks and self-locking brackets, fix securely with minimum of 3 brackets per pipe.
- Provide additional supports as necessary to support junctions and changes in direction.
- Tighten fixings as work proceeds so that every storey-length of pipework is self supporting.
- Push-fit downpipe sections together without adhesive to allow joints to accommodate thermal movement.

Box gutter and other profile rainwater systems

- Push-fit downpipe sections together, as Half Round rainwater system, to allow joints to accommodate thermal movement.
- For method of fixing to supporting structures, consult VMZINC® for recommendations.

Jointing gutters and pipework generally

- Cut ends of pipes and gutters clean and square.
- Remove burrs and swarf.
- Clean gutter joints before gluing together.

Gutter test

- Temporarily block all outlets.
- Fill gutters to overflow level and after 5 minutes closely inspect for leakage.

Care and maintenance

- Provide printed instructions of the recommended inspection, cleaning (generally once per year) and repair procedures.
- All VMZINC® gutters and downpipes develop a self-protecting surface patina that does not require frequent maintenance.

Further technical information

General for all zinc products

Zinc aesthetics

Zinc is a material that requires almost no maintenance as the rinsing effect of rainwater performs this task naturally. However when zinc is used on a **non-rinsed** surface such as a protected facade or soffit it is possible that the zinc may exhibit some superficial white stains. These stains will not affect the integrity of the zinc itself. It is for this reason that the very dark grey ANTHRA-ZINC® should be carefully considered before being designed on a **non-rinsed** facade or soffit. On surfaces that are **rinsed** by rainwater the majority of the staining will be removed.

In marine locations the risk of superficial staining in **non-rinsed** areas increases. Whilst stains are possible on QUARTZ-ZINC® and the PIGMENTO® range, the visual effect is greatly reduced and therefore these finishes may be more appropriate for some specific locations. However, in a **severe non-rinsed** marine environment (1km from the sea), staining is still possible and therefore PIGMENTO® should not be used in this application.

For severe coastal environments, if ANTHRA-ZINC® is being considered ANTHRA-ZINC® STRAT is likely to maintain its darker finish for longer on **rinsed** surfaces but again should not be used in these locations on **non-rinsed** surfaces.

VMZINC® manufacturing uses a colour management system based on the Y-Factor. The Y-factor ranges from 0 to 100: 0 is black and 100 is white. The range for ANTHRA-ZINC® is 5 to 7 and the range for QUARTZ-ZINC® is 22 to 25. Variations are possible within this range when different production batches are used. We recommend that one project uses one production batch.

Fixing system method

Clips have a dual function:

- Ensuring the mechanical resistance of the entire roof
- Allowing free expansion of the metal

VMZINC® clips are made of 304 stainless steel. The thickness of the fixing clip is 0.5mm. The sliding clips have a moving component, which is 0.4mm thick, and a 70mm long slot to allow free movement of the panel when it is under expansion and contraction. Each clip must resist a pull-out force of 50daN. It is recommended that screws be used to secure the clips with three being used per sliding clip. The use of nails offers significantly less resistance, but in the event of using nails, contractors are advised to use ring shank nails.

Centre to centre distance between clips:

- 330mm on the main part of the roof
- 200mm on perimeter of the roof (at least 1100mm or 1/8 of the projected roof)
- 150mm in the corners

All standing seam panels require a minimum of 5 fixed clips. When attaching PV panels, snow guards, etc it may be necessary to further increase the number of these clips. Standard panel width is 600mm, however for aesthetic or wind up lift reasons 530mm or even 430mm wide panels can be used. Please consult us for further information.

Single fix clips can be used on timber substrates. Due to the improved strength, clips can be placed at centres of up to 500mm with 1 screw per clip thus increasing speed of installation and therefore reduced cost.



Non-rinsed salt stains



Sliding clip



Fixed clip

Further technical information

General for all zinc products

Contact with limestone

Zinc can be installed adjacent to limestone. The run off from limestone onto zinc material is acceptable. However, limestone dust and gypsum dust generated during cutting operations can react with zinc in the presence of water and form a superficial layer of white rust. No dust should be in contact with unprotected zinc. To prevent white rust, good construction practices should be used to limit the amount of dust that comes in contact with the zinc.

Protective film

All VMZINC® roofing systems are supplied with a protective film. We recommend that the film be left on the panels during installation. The film should only be removed when other trades are no longer working in the vicinity of the completed zinc roof. The film must not be partially removed as this will lead to unsightly stains that will be difficult to remove. Panels adjacent to one another must not be left with one filmed and the other un-filmed. The zinc roofing panels should be delivered to site with the film completely covering panel faces but not so as to obstruct film removal in joints.

The protective film can left on the panels for up to 2 months after panel installation.

Once the film has been removed it must not be covered with timber, tarpaulins, etc as these will trap water and induce white rust staining.

Protective gloves should not only be used as a safety measure when working with zinc but also to avoid further staining the metal.



Partial removal of protective film.



Staining resulting from partial removal of protective film.

VMZINC® in relation to other materials

Compatible contact products
Metals
Lead
Aluminium (painted, anodised or bare)
Galvanised steel
Stainless steel
Woods
Pine
Spruce
Scots pine
Poplar
Miscellaneous materials
Polyurethane
Non-acetic silicones
MS polymer mastics
Organic timber treatments

Incompatible contact products & run-off*
Metals
Copper
Steel (non-galvanised)
Gypsum dust/limestone dust
Woods
Larch
Oak
Chestnut
Red cedar
Douglas fir
White cedar
All woods with a pH < 5
Miscellaneous materials
Mortar
Building paper
Bituminous membranes
Fire retardant & preservative treatments
Acidic cleaners (brick cleaner etc)
Acetic silicones
Metal salt timber treatments

* This list is not exhaustive

Further technical information

General for all zinc products

Profiling and folding zinc

As zinc is a rolled metal it has a rolling direction, which is also indicated on the protective film. It should be noted that light may reflect slightly differently on panels laid in opposite directions on a roof or wall. The zinc must also be folded in a way that creates a gentle radius rather than a sharp fold.

This is the case for all equipment whether it be hand tools, CNC equipment or profilers. Natural Zinc, QUARTZ-ZINC®, ANTHRA-ZINC® and AZENGAR® should always have an internal folding radius of at least 2 x the thickness of the zinc sheet, and the metal should never be folded if the temperature of the metal is less than +7°C.

When using PIGMENTO®, this radius should be increased to 3 x the thickness of the zinc sheet, and the folding should only be carried out when the temperature of the metal is at least +10°C. All folding of the zinc should be carried out with the protective film in place.

Storage

The zinc sheets, coils, and formed pieces must be stored in a well-ventilated, sheltered and dry area where temperature variation is kept to a minimum.

- Temperature variations can cause condensation build-up, that in turn will cause zinc hydroxide (white rust) to form. Ensure that the zinc is stored in an area without great temperature variations. Zinc hydroxide forms when the surface of zinc comes into contact with humidity without carbon dioxide. Zinc hydroxide provides no protection and leaves unattractive, indelible marks on the zinc. Consequently, we do not recommend installing any panel that has been affected by zinc hydroxide
- The sheets, coils and formed pieces should be separated from the ground by pallet or similar storage device to allow sufficient ventilation of the zinc
- Pallets or similar storage device should allow the zinc sheet to be stored flat to reduce risk of deformation
- It is recommended that the coils be stored in their original packaging

If the coils are to be stacked due to lack of storage space the following recommendations must be followed:

- If coils are delivered on their horizontal axis, the pallets must be stored in their original packaging and individually on separating racks
- If coils are delivered on their vertical axis the pallets must be stored on top of one another with a maximum of 4 pallets for stability reasons
- Zinc must never be stored outside

Normal maintenance

Although zinc is a metal that requires very little maintenance and the rinsing effect of rain water is often sufficient to keep the zinc in ideal condition the following precautions should be followed. The roof should be regularly inspected and any foreign matter such as leaves, grass and other deposits should be removed. Special attention should be given to gutters, ensuring that they are clean and not blocked thus allowing the free flow of water (flat gutters which result in standing water are not recommended). This maintenance shall be at the owner's expense after the installation work has been completed.

Foot traffic

Normal foot traffic use implies traffic reduced to a strict minimum for normal maintenance defined above and for other work, such as installation and servicing of aerials, etc.

It is advisable to take all the precautions and useful provisions necessary so as not to cause any puncturing of the flat parts or deformation of the joints, roll capping, roof vents, etc. Care must also be taken to clean footwear prior to walking on the roof.

In the case where technical equipment requiring frequent inspections (air conditioning, for example) is installed on the roof, certain adaptive arrangements such as walkways should be considered.

Cleaning

As indicated above, the rinsing effect of the rain will often mean that no other cleaning is necessary. However, it is possible to wash the zinc with warm water and a mild detergent.

The zinc must always be cleaned in the direction of the grain of the metal. Pressure washers are not recommended. Cleaning with detergent can be supplemented with application of a very small amount of mineral oil.

The zinc must be completely dry prior to any application of mineral oil. It is always advisable that a small test area is cleaned and left for 24 hours prior to proceeding to a larger area.

Scratches

Due to the self healing nature of zinc we would recommend that small scratches be left to heal on their own. We do not recommend the use of touch-up paint.

VMZINC® Membrane

VMZINC® Membrane is a breather layer that allows water vapour to pass through it but is water proof to liquid water (up to a column of 2m). For roof pitches above 22° (40%) the membrane should be overlapped by 150mm. Below this slope, the overlap should be increased to 200mm. For pitches between 3° (5%) and 14° (25%) the overlap should be 200mm. VMZINC® Membrane has an incorporated tape.

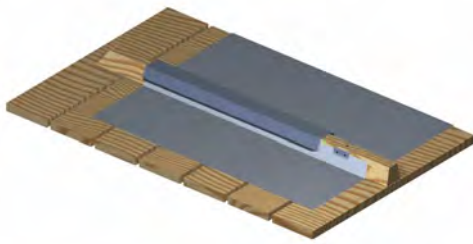
Other VMZINC® roofing systems

Batten Cap roofs

Overview

Zinc has been used as a roofing material since the beginning of the 19th century and the first systems involved batten cap roofs which are still widely used across the whole of Europe and frequently now as a replacement for lead.

The batten cap roofing system is often a more appropriate choice for traditional buildings.



Other VMZINC® roofing systems

ADEKA tiles and roofing shingles

Overview

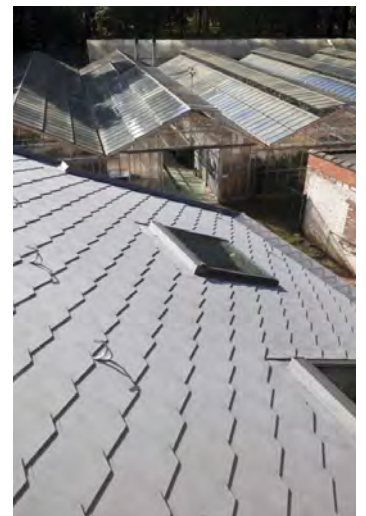
ADEKA is an innovative patented facade and roof system based on small pre-formed QUARTZ-ZINC® elements featuring a unique locking key. For other finishes please contact us.

8.8 elements are required to cover 1m². Due to the raised edges and 50mm overlaps ADEKA can be used for roofing for slopes of 15 degrees and over.

Installation and structure

ADEKA can be fixed to both vented open gap softwood boards and vented 18mm plywood with VMZINC® Membrane. The panels are installed from bottom up with the key fixing into the lower panel. Each ADEKA tile is then secured with 3 screws. ADEKA is not supplied with filmed VMZINC®.

Roofing shingles (flat lock panels) can also be installed on a roof in a similar fashion to the ADEKA tile however the minimum slope for the majority of projects using diamond shingles with non aligned joints is 45 degrees.



Other VMZINC® roofing systems

Rainscreen roofs

Overview

Zinc rainscreens can be considered for roofing, however, as these are not weather resistant when installed non vertically it is vital that a secondary water proofing layer be installed under the rails supporting the zinc panels. Alternatively a complex gutter system can be created in order to evacuate the rain water.

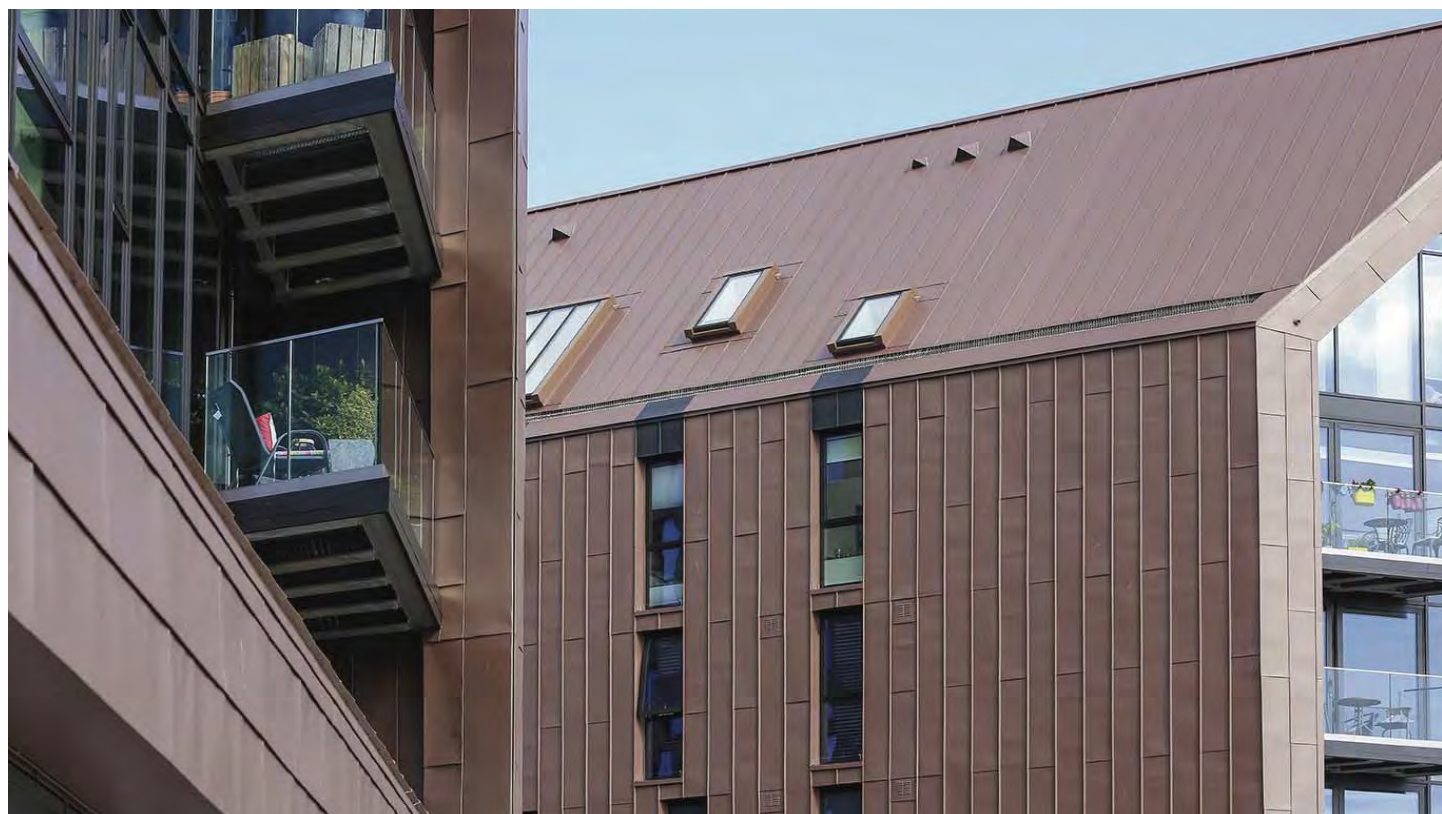
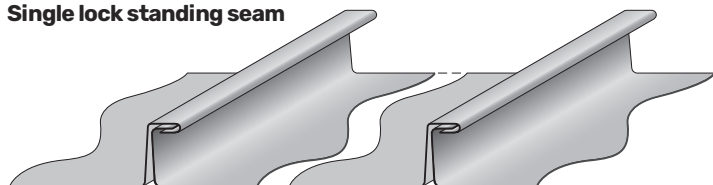


Standing seam facades

Standing seam panels as walls and soffits

VMZINC® can be used as a standing seam panel for all vertical walls as well as soffits. The structure must be a cold ventilated one using either VMZINC® on vented open gap boarding, VMZINC® PLUS on vented plywood (humidity classes 1 to 4) or VMZINC® on VMZINC® Membrane on vented plywood (this last build up is only acceptable on vertical surfaces). The vented air space must be at least 38mm wide. For buildings where the facade must be constructed of mostly EN13501 A1 or A2 materials, the plywood can be replaced with 0.7mm thick galvanised steel decking. The panels can be installed vertically, horizontally or even diagonally but panel length should not exceed 4m. Although zinc standing seam panels are not as flat as some other VMZINC facade systems it is possible to reduce unevenness by reducing panel width to 430mm and zinc thickness to 0.8mm. The use of a single lock also increases panel flatness but does reduce wind uplift resistance and should be avoided on wider panels.

Single lock standing seam

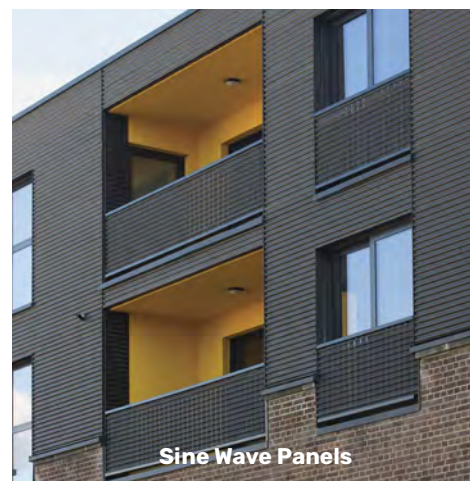
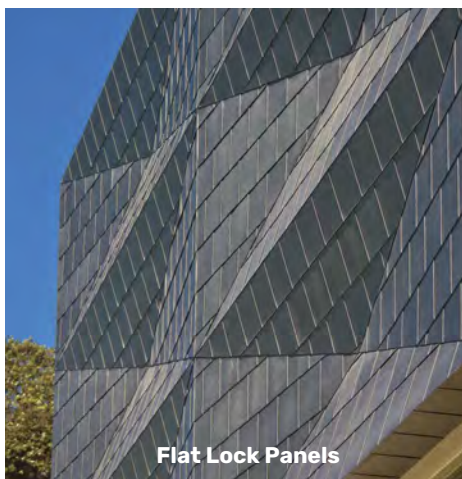


VMZINC® facades and ornaments

Other VMZINC® facade systems

VMZINC® can be installed using the principle of a rainscreen facade. There are a number of panel types and sizes available. These include **Interlocking Panels** which can be installed horizontally or vertically in all finishes. For slightly wider panels the **MOZAIK** cassettes offer an excellent solution.

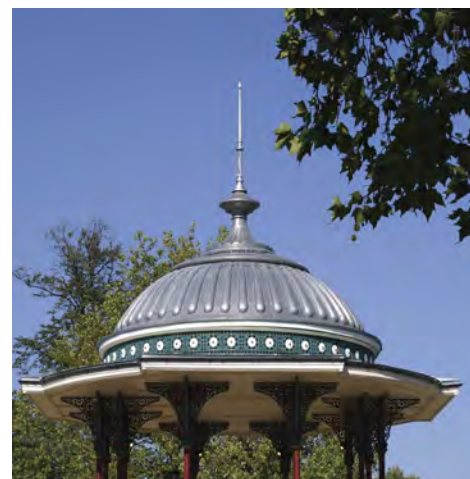
Sine Wave Panels offer an alternative design in zinc as do **Overlapping Panels** whilst remaining cost effective solutions for rainscreen cladding. **Flat Lock Panels** can be used on a facade in many formats, sizes and in all finishes of VMZINC®.



VMZINC® ornaments

VMZINC® has been used as a material for heritage projects for almost two hundred years. VMZINC® produces ornaments such as finials, weathervanes and bull's eye windows. These elements exist in both standard shapes and sizes as well as completely bespoke products.

[Please click for further information](#)



Usage and contact information

Use a Professional

As well as following design recommendations it is critical that VMZINC is installed in the correct manner and by trained professionals.

VMZINC® provides training for installers with experience in metal roofing and cladding in partnership with the Lead Sheet Training Academy and the NCTS. This training is designed to supplement trained professionals with specific information concerning VMZINC®.

VMZINC at Work

We would also recommend that contractors be members of associations such as the Federation of Traditional Metal Roofing Contractors. Furthermore, VMZINC® offers a list of recognised contractors that adhere to specific conditions concerning experience and training, namely VMZINC® at WORK.

RIBA Approved CPD Seminars

Please contact us to book a CPD seminar entitled 'Zinc as Building Envelope' or 'Zinc as a Facade Material'. This seminar covers many subjects including aesthetics, applications, design requirements, installation methods as well as sustainability.

CAD Details

A large library of CAD drawings in both .dwg and .pdf format is available. We also offer BIM objects.

NBS Specifications

We offer specifications for all of our systems. These can be either downloaded or sent out from our office.

Bespoke Roof and Wall Design

Panel layouts and project specific details can be created for projects when standard detailing may not quite be enough.

Samples

Please contact us for material samples on all of our finishes. We can also send out larger samples for planning. All our literature is available online.

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