VMZINC[®] FACADES

Fully Supported and Rainscreen Facade Systems

Design and specification requirements

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6



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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 and balustrades.

Front cover building credit Architect: Callison RTKL Project: Manchester Life Lampwick Quay

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Why use VMZINC® facades?

Introduction

Zinc is among the most sustainable metals used in construction today and was first used for roofing and gutters in large European cities at the beginning of the 19th century. Batten cap zinc panels were used for mansard roofs but towards the end of the 20th century architects began to use zinc as a way to clad facades. Over the past 20 years VMZINC[®] has developed a range of facade systems that vary in dimension, joint size and type.

All VMZINC[®] facade systems can be used for new build and refurbishment alike and in combination with many other building materials. As with all VMZINC[®] products exceptional durability, very limited maintenance and a wide range of beautiful finishes are offered by VMZINC[®] facades.

Benefits of the VMZINC[®] facade systems

- Lightweight and durable
- Fully recyclable
- Minimal expansion and creak
- A service life of 100 years or more for facade panels
- Virtually maintenance-free
- Complex shapes can be clad using VMZINC[®] facades
- All flashings and trim can be in the same material
- EN 15804 Environmental Product Declaration
- Conforms to EN 988
- Available in a choice of either Natural Zinc, engraved AZENGAR[®] or 9 pre-weathered finishes
- Cost effective
- Wide range of panel types
- Fully supported systems follow BS EN 501 and Code of Practice 143-5
- Fire classification A1 (Natural Zinc, QUARTZ-ZINC[®], ANTHRA-ZINC[®] and AZENGAR[®]) and A2-s1,d0 (PIGMENTO[®] and VMZINC[®] PLUS) according to EN 13501-1:2002





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 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.

Comparative energy expenditure in manufacture



Compared with other metals, very little energy is needed to manufacture zinc metal from ore – less than half the consumption of copper and stainless steel and less than a quarter of that used for aluminium. CO₂ and other greenhouse gas emissions are also, therefore, proportionally less.



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.

bre

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.









The systems

Underlying principles

Introduction

VMZINC[®] has been used as a material to clad facades for many decades. Initially traditional roofing systems such as standing seam panels were installed as 'roofs on walls'. Flat lock panels have also been installed for many decades. Both of these systems require vented continuous substrates and are commonly installed by traditional hard metal roofing contractors. Over the past two decades rainscreen facades have become very popular and VMZINC[®] offers a number of these rainscreen systems.

Rainscreen facades

A raincreen facade is an outer skin that is back-ventilated by an air space that is 38mm deep. The system can be used on both new build and renovation projects but always allows the outer layer to breathe whilst the inner layer deals with thermal insulation and air leakage. All joints are dry and do not use any form of sealant.

Joint types

VMZINC[®] wall panels can be joined using three mechanical joints:

- Standing seam
- Flat lock
- Reveal

VMZINC® PLUS

VMZINC[®] PLUS is a unique patented product that allows zinc to be installed on ventilated plywood.

The product consists of VMZINC[®] (in all finishes) having a 60 μ m 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. VMZINC[®] PLUS resists to an abrasion of 140 litres when tested in accordance with ASTM D 968.

Non Vented Warm Walls

VMZINC[®] PLUS can be used to clad non vented warm wall construction using standing seam and flat lock panels on substrates such as insulated metal sandwich panels. It is vital that the designer obtains acceptance from Building Control prior to installation.

Developments over 18m high (non or limited combustibility)

For buildings where combustible materials such as plywood cannot be used (for example residential developments over 18m in height) and in some situations 11m, galvanised steel decks can be used as a substrate for the flat lock and standing seam panels. By combining this with mineral board insulation, all materials in the wall build up are A1 or A2 according to EN 13501. The steel deck must be at least 0.7mm thick and have dimensions allowing clips to be attached at the required spacings. Corrugated steel deck can only be used on vertical surfaces. For all surfaces such as sills, parapets, etc the substrate must be continuous. The 38mm vented cavity can be fire stopped using continuous vertical cavity barriers and intumescent horizontal cavity barriers.



The systems

Underlying principles

Please contact us for further design assistance

Panel size and flatness

VMZINC[®] wall panels will offer very different aspects depending on the type of panel used. Whilst standing seam panels can offer a continuity from roof to wall they will not offer a very flat aspect even when 430mm wide. Flat lock panels also offer a more textured finish and the options on size and shape are very wide – see page 17.

The interlocking panel system provides flat panels but they are limited to 333mm in width. For panels between 333mm and 600mm in width, Mozaik panels should be considered – see pages 23-25.





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.









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.















Bespoke PIGMENTO®

Standard **PIGMENTO®** CHARCOAL BLUE

Fully supported facades

VMZINC[®] facades

Standing seam

Typical standing seam panel system construction



Advantages of the standing seam panel system

- Covered by Code of Practice 143-5: 1964
- Concealed fasteners
- Roof to wall continuity
- Versatile
- Horizontal, vertical and diagonal installation possible
- Brooft4 certification is available for standing seam on vented plywood

Note: Supporting structure is indicative and can be blockwork or metal framing with a non-combustible deck or other appropriate materials.



Maximum panel size: 430 x 4000mm

- 1 Standing seam panels in VMZINC[®] PLUS
- 2 Fixing clip
- **3** 18mm plywood or steel deck (see page 6)
- 4 Battens creating a vented 38mm airspace
- 5 Insulation protected by VMZINC[®] Membrane

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

VM BUILDING

Standing seam

Overview

VMZINC[®] Standing Seam is a ventilated cladding system that can be used for both renovation and new build. As the name standing seam implies, the system consists of seams that can be crimped in a single or double lock (for greater flatness single lock seams sometimes referred to as angle seams are recommended). The system has a traditional look with the seams being 25mm high. The trays can be installed horizontally, vertically and at an angle.

This facade system offers the possibility to clad all types of walls: flat, curved or complex forms. Another great advantage of this zinc facade system is that it can be used on both walls and roofs, thus allowing roof and wall to blend as one (standing seam roofs require double lock seams). The cladding panels can be various sizes but we would not recommend that they be more than 4m in length and 430mm in width. Single lock panels should not exceed 430mm in width. All aspects of VMZINC[®] can be used with 0.8mm being the recommended thickness for facades.





Standing seam

Structure

The system is very lightweight as the panels weigh no more than 7 kg/m² and can be fixed back to both soft wood open gap boarding and plywood. Both substrates require the use of 18mm thick wood and a vented airspace should be left behind the timber of at least 38mm. The plywood must be weather and boil proof. WBP plywood is more precisely described as EN314-2 (bond class 2) and EN636-2 (timber performance). When soft wood open gap boarding is used it is possible to omit every other board, however a fully boarded substrate should be used in accessible areas. The substrate must be flush to within 2mm and all screws and nails must be countersunk. VMZINC® PLUS must be used on plywood substrates, however for vertical surfaces VMZINC® and VMZINC® Membrane can be used on vented plywood. For projects where combustible materials such as plywood cannot be used galvanised steel decks can be used as a substrate – see page 6 for further information.

Installation

The panels are installed in a sequential order from either left to right or right to left for vertical panels. Horizontal panels must be installed from bottom up. For panels less than 2m in length fixed clips can be used. For longer panels sliding clips must be used towards the bottom on vertical panels and to the left and right of the centre for horizontal panels. When using single lock all clips can be fixed. VMZINC[®] clips are made from 304 stainless steel and each clip must resist a pull-out force of 50 daN. 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.

The panels should be installed with the protective film in place.



Centre to centre distance between clips:

- 330mm on the main part of the facade
- 200mm on perimeter of the facade (at least 1100mm from building corner)
- 150mm in corner areas



Fully supported facades

Standing seam

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



All dimensions in mm

Flat lock

Typical flat lock panel system construction







Maximum panel sizes: 600 x 1000mm 530 x 2000mm 430 x 3000mm

- 1 VMZINC[®] flat lock panels in VMZINC[®] PLUS
- 2 Fixing cleat
- **3** Fixing strip
- 4 18mm plywood or steel deck(see page 17)
- 5 Battens creating a vented 38mm airspace
- 6 Insulation protected by VMZINC[®] Membrane

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Advantages of the flat lock panel system

- Covered by Code of Practice 143-5: 1964
- Concealed fasteners
- Offers great flexibility on panel size and shape

Flat lock

Overview

VMZINC[®] Flat Lock panels, sometimes known as shingles, are installed on a continuous vented substrate on both renovation projects and new build alike. The system consists of panels with 180 degree hems approximately 25mm wide that interlock and are held on the substrate using cleats. The system allows a great deal of flexibility as flat lock panels can be made to many shapes and sizes. The panels can be square, diamond shaped and rectangular. The maximum recommended visible width for a panel is 600mm with the maximum length being 3000mm. The thickness of the zinc used will depend on panel dimensions with small panels using 0.7mm zinc whereas the larger panels will require 1mm thick zinc. Increased zinc thickness will offer a flatter panel, however increasing panel dimensions will have the opposite effect and may induce some unevenness.





Flat lock

Structure

The system is very lightweight as the panels weigh no more than 8 kg/m² and can be fixed back to both soft wood open gap boarding and plywood. Both substrates require the use of continuous 18mm thick wood and a vented airspace should be left behind the timber of at least 38mm. VMZINC[®] PLUS must be used on plywood substrates. For vertical surfaces VMZINC[®] can be used on vented plywood with VMZINC[®] Membrane. When non-combustible substrates are required plywood can be substituted with 0.7mm galvanised steel deck.

Installation

The panels are installed in a sequential order from bottom up. The panels are held in place using cleats which can be stainless steel, zinc or galvanised steel. For larger panels galvanised steel cleats are recommended. The cleats should be fixed at a maximum of 330mm centres. For small diamond shaped panels the hems should be slightly notched thus allowing the cleat to sit securely. When installing large rectangular panels the short side should be fixed with a long fixing strip. It is recommended that screws be used to secure the cleats. The use of nails offers significantly less resistance, but in the event of using nails, contractors are advised to use ring shank nails. The panels should be installed with the protective film in place.





Flat lock

Availability

The sizes and shapes indicated in the table opposite are standard and are therefore more cost effective than completely bespoke sizes. The sizes indicated correspond to dimensions as seen on the finished wall. Diamond shingles are as standard supplied with non-aligned joints. All panels are delivered with stainless steel clips.

Standard flat lock panel sizes

Pattern	Width X (mm)	Length Y (mm)	Nos of clips	Pieces per/m²
	235	235	2	19
Square	420	420	4	6
	590	590	4	3
	235	470	3	10
	235	940	4	5
Rectangle	420	630	5	4
<u>i</u>	420	840	6	3
	590	885	6	2
	274	215	2	33
Diamond – Wide	290	230	2	29
	432	336	2	14
	371	193	2	27
Diamond – Narrow 🐺 🔭	391	206	2	24
	585	301	2	11

Please contact us for other sizes

Galvanised steel deck used as a substrate for flat lock wall panels





Fully supported facades

Flat lock

Corner details





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



Window details





1	VMZINC® PLUS Flat Lock Panel
2	Plywood
3	VMZINC® PLUS continuous folded strip
4	VMZINC® continuous folded strip, 0.7mm thick
5	Insect mesh
6	VMZINC® continuous welted strip
7	Compatible mastic sealant
8	VMZINC® PLUS flashing
9	Window frame
10	VMZINC® PLUS sheet clip, 0.7mm thick, width 80mm, 2 per m
11	Ventilated space from 20 mm to 38mm
12	VMZINC [®] Membrane
13	Loadbearing structure

-

All dimensions in mm

ADEKA

Overview

ADEKA is an innovative patented facade and roof system based on small preformed 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.

Brooft4 certification is available for Adeka on vented plywood.





10 1 14 3 12 4 VMZINC® ADEKA 1 2 Plywood 13 1 3 Thermal insulation 4 VMZINC[®] Unicprofile F4 2 8 9 5 Insect mesh 2 6 VMZINC[®] ADEKA reveal profile 4 5 7 Compatible mastic seal 8 VMZINC[®] PLUS flashing Head 9 Window frame Sill 10 11 9 7 12 Ventilated space 13 VMZINC[®] Membrane 14 Loadbearing structure 2 8 15 Timber fixing pack 5 11 16 VMZINC[®] soldered clip 16 v 14 3 12 2 60 1 13 All dimensions in mm

VMZINC® PLUS sheet clip, 0.7mm thick, width 80mm, 2 per m VMZINC® PLUS folded clip, imm thick, width 250mm, 2 per m

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®.



VMZINC[®] cassettes

Overview

In recent years zinc has been used far more as a metal for rainscreen cassettes. The system used will vary depending on panel size/format, joint type and whether fixings are visible or not and panel flatness.





ROSEB

VMZINC[®]corrugated panels

Typical corrugated panel variations

Opposite are some of the examples of corrugated panels that can be produced in 0.8mm or 1mm thick zinc.



798mm

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

possible

vertical

texture



VMZINC[®]corrugated panels

Overview

VMZINC[®] corrugated panels can be fixed to a wooden or a metal framework. Along with VMZINC[®] Sine wave panels this is one of the few VMZINC[®] facade systems that relies on visible fasteners. Most Corrugated panels are available in both 0.8mm and 1mm thicknesses. The system can be used to clad walls both horizontally and vertically.

Structure

The system is fixed back to timber or metal (galvanised steel at least 1.5mm thick or aluminium at least 2mm thick) rails that are typically at centres of between 0.8m and 1.2m (depending on loading). The rails must have a supporting face width of 40mm and should allow a minimum vented space between the VMZINC[®] Corrugated panel and the insulation/sheathing of 38mm.

Installation

The panels are installed in a sequential order from bottom up when installed horizontally. Panels are fixed in place with stainless steel screws which can be lacquered. The maximum length for the panels is 6m. For panels over 3m in length slotted or over-size holes must be pre-drilled to allow the thermal expansion and contraction of the panels to take place. The panels should be installed with the protective film in place. VMZINC[®] PLUS must be used on all non-vertical flashings if open gap softwood boards are not being used.







Rainscreen facades

Mozaik

Typical Mozaik cassette system construction



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



Maximum panel size: 600 x 2400mm

- 1 VMZINC[®] Mozaik cassette panels
- 2 Metal framing creating a vented 38mm airspace
- 3 VMZINC[®] Membrane
- 4 Insulation
- **5** Supporting structure (blockwork as shown or metal framing or other appropriate supporting structure)

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

Advantages of a typical Mozaik cassette system

- Wide range of panel sizes and depths
- Concealed fastening
- All finishes available
- Bespoke perforation possible

Mozaik

Overview

Mozaik is a rainscreen cassette system that is available in all finishes of 1mm thick VMZINC[®] and can be installed both vertically and horizontally. The maximum panel size is 2400mm x 600mm and panels can have a depth of 40, 60, 80 or 100mm. Vertical and horizontal joints are 15mm. Timber battens can be used to support the panels but metal rails are more commonly used (2mm aluminium or 1.5mm galvanised steel). Centre to centre spacing of the rails is typically 600mm but can vary depending on the loading requirements of the facade in question.

Structure

The system is typically fixed to Aluminium cladding rails with a minimum thickness of 2mm at maximum 600mm centres using stainless self-tapping screws with a diameter of 4.8mm or 5.5mm.

Installation

Horizontal panels are installed bottom up whereas vertical panels can be ordered for installation left to right and right to left. The 15mm joint is automatically created, thus eliminating the need for shims during installation. The panels are fixed with the self-tapping screws. The protective film should only be removed upon completion of the façade and when no other trades are working nearby.

VMZINC[®] PLUS must be used on all non-vertical flashings if open gap softwood boards are not being used.





Rainscreen facades

Mozaik



Customised panels

Perforated panels

Almost all VMZINC[®] rainscreen facade panels can be perforated. This can vary from standard perforations to custom perforations creating various patterns, even images and logos.









Customised panels

Perforated QUARTZ-ZINC[®]





Customised panels

Interlocking panels - perforated and solid



Flat lock panels



Customised panels

Curved interlocking panels in ANTHRA-ZINC°, QUARTZ-ZINC° and Natural VMZINC°



Custom-stamped Natural VMZINC[®] standing seam roofing and wall cladding panels



Interlocking panels

Typical interlocking panel system construction





- Elegant linear panels
- Concealed fastening
- CWCT tested by UK fabricators
- Variable joint size
- Horizontal and vertical installation possible



Maximum panel size: 333 x 6000mm

- 1 VMZINC[®] interlocking panels
- 2 Metal framing creating a vented 38mm airspace
- 3 VMZINC[®] Membrane
- 4 Insulation
- **5** Supporting structure (blockwork as shown or metal framing or other appropriate supporting structure)

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

Interlocking panels

Overview

Interlocking panels consist of a panel face, reveal joint and are fixed in position using hidden fasteners. The panels can be orientated horizontally or vertically and can be applied equally to soffits. Panels are available in all finishes of 1mm thick VMZINC[®] with standard panel widths being 200mm, 250mm and 300mm. The maximum panel width is 333mm and length 6m, panels of less than 0.5m are not recommended. Joint widths can be either 10mm or 20mm. It should be noted that panel width = panel face + joint. The depth of the panel is 25mm.





Interlocking panels

Structure

The system is relatively lightweight as the panels weigh no more than 12 kg/m^2 and can be fixed back to both timber and metal sub frames. Support rails are installed at 600mm centres (maximum). Aluminium rails are 2mm thick with both timber and aluminium rails requiring a supporting face of at least 40mm. All panels that are over 2m in length must allow for thermal expansion and contraction by using stainless steel clips. The fixed point being at the top of the panel for vertical installation and in the middle for horizontal installation.

Installation

The panels are installed in a sequential order from top to bottom for horizontal panels. The upper edge of each panel is engaged into the lower edge of the panel above. The panels are mechanically attached using screws and/or the panel fixing clip that allows for thermal movement. The panels should be installed with the protective film in place.

VMZINC[®] PLUS must be used on all non-vertical flashings if open gap soft boards are not being used.



Panel fixing clip



Rainscreen facades

Interlocking panels



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

1	VMZINC [®] Interlocking Panels
2	VMZINC® continuous welted strip
3	10 or 20mm joint
4	Panel fixing clip
5	Timber or metal framework
6	Roofing membrane
7	VMZINC® capping piece max 500mm wide
8	$VMZINC^{\otimes}$ folded clip, 1mm thick, width 250mm, 2 per m
9	Roof boarding
10	Insect mesh
11	Intermittent timber fixing packs to provide ventilation pathways
12	VMZINC [®] Membrane
13	Loadbearing structure
14	Roof deck

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Window details





1	VMZINC [®] Interlocking Panels
2	Timber or metal framework
3	Insect mesh
4	$VMZINC^{\texttt{B}}$ welted panels with perforated grids
5	VMZINC [®] cover profile
5	Compatible mastic seal
7	Timber fixing pack
8	VMZINC [®] flashing
9	$VMZINC^{\diamond}$ folded clip, 1mm thick, width 250mm, 2 per m
0	VMZINC [®] soldered clip
1	Window frame
2	VMZINC [®] sheet clip, 0.8mm thick, width 80mm, 2 per m
3	Intermittent timber fixing packs to provide ventilation pathways
4	VMZINC [®] Membrane
5	Loadbearing structure

UK fabricators can offer CWCT tested panels

Sine wave

Typical sine wave system construction





Maximum panel size: 836 x 6000mm

- 1 VMZINC[®] sine wave panel
- 2 Stainless steel screw
- 3 Metal framing creating a vented 38mm airspace
- 4 VMZINC[®] Membrane
- 5 Insulation
- **6** Supporting structure (blockwork as shown or metal framing or other appropriate supporting structure)

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

Advantages of the sine wave system

- Offers a more industrial aesthetic
- Very simple installation
- Cost effective
- Available in all finishes

Sine wave

Overview

VMZINC[®] Sine wave is a corrugated profile in zinc that can be fixed to a wooden or a metal framework. This is one of the few VMZINC[®] facade systems that relies on visible fasteners. The standard profile for the panel is an 18/76mm module which is available in both 0.8mm and 1mm thicknesses. The system can be used to clad walls both horizontally and vertically. Sine wave can be installed on a roof, however a secondary waterproofing layer is required.







Sine wave

Structure

The system is fixed back to timber or metal (galvanised steel at least 1.5mm thick or aluminium at least 2mm thick) rails that are typically at centres of between 0.8m and 1.2m (depending on loading). The rails must have a supporting face width of 40mm and should allow a minimum vented space between the VMZINC[®] sine wave panel and the insulation/sheathing of 38mm.

Installation

The panels are installed in a sequential order from bottom up. Panels are fixed in place with stainless steel screws on every other wave. The maximum length for the panels is 6m. For panels over 3m in length slotted or over-size holes must be pre-drilled to allow the thermal expansion and contraction of the panels to take place.

The panels should be installed with the protective film in place.

VMZINC[®] PLUS must be used on all non-vertical flashings if open gap soft boards are not being used.





Rainscreen facades

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

Sine wave

Expansion joint detail



Window details





VMZINC [®] sine wave profile
Timber or metal framework
Insect mesh
VMZINC [®] flashing
VMZINC [®] continuous welted strip
Compatible mastic sealant
Timber fixing pack
VMZINC® folded clip, 1mm thick, width 250mm, 2 per m
VMZINC® PLUS sheet clip, 0.8mm thick, width 80mm, 2 per m
Window frame
Ventilated space
Loadbearing structure

1

All dimensions in mm

Rainscreen facades

VMZINC[®] facades

Overlapping panels

Typical overlapping panel system construction





Panel size: 200 x 3000mm

- 1 VMZINC overlapping panels
- 2 Timber framing creating a vented 38mm airspace
- 3 VMZINC Membrane
- 4 Insulation
- **5** Supporting structure (blockwork as shown or metal framing or other appropriate supporting structure)

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

Advantages of the overlapping panel system

- Cost effective
- Concealed fastening
- Full system available in stock

Overlapping panels

Overview

The overlapping panel system comprises of an economical kit of panels and flashings that can be easily installed on either timber battens or metal cladding rails. The system is fixed with screws or with a nail gun resulting in the panels being held in place with no visible fasteners. Overlapping panels are 200mm wide and have a depth of 13mm . They are installed horizontally and available in 3m lengths in both QUARTZ-ZINC[®] and ANTHRA-ZINC[®]. Overlapping panels can be supplied in PIGMENTO[®]/AZENGAR[®] upon request.





Overlapping panels

Structure

The overlapping panels are installed on vertical cladding rails at 600mm centres. The rails can be either softwood timber with a 50mm supporting width or 40mm wide metal rails (2mm thick aluminium or 1.5mm thick galvanised steel). A vented air space of at least 38mm must be allowed for behind the panels.

Installation

In a sequential order the panels are installed from bottom to top and fixed with a nail gun for timber supports and screwed into position when using metal cladding rails. The panels should be installed with the protective film in place. A full set of standard flashing trim is available for base, top, corners and windows.

VMZINC[®] PLUS must be used on all non-vertical flashings if open gap soft boards are not being used.







Rainscreen facades

Overlapping panels



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

1	VMZINC [®] Overlapping Panel
2	Ventilated space
3	VMZINC [®] Membrane
4	VMZINC [®] Unicprofile F6
5	Window frame
6	VMZINC [®] Unicprofile F7 (adapted)
7	VMZINC [®] Unicprofile F4
8	Insect mesh
9	Modified VMZ Overlapping panel
10	Timber block
11	VMZINC [®] Unicprofile F1 (adapted)
12	VMZINC [®] Unicprofile F2 (adapted)
13	Compatible flexible sealant
14	Clip
15	Timber board with fall
16	VVMZINC [®] Unicprofile F1

Further technical information

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 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. In marine locations the risk of superficial staining in these 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.

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.

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.

Protective film

All VMZINC® facade 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 facade. The film must not be partially removed as this will lead to unsightly stains. Panels adjacent to one another must not be left with one filmed and the other unfilmed. The zinc facade 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.

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). VMZINC® Membrane should be used to protect the internal leaf of the rainscreen wall which is often the insulation.

Fire protection

Zinc has a fire performance rating of A1 or A2-s1,d0 (non or limited combustibility) and when installed using the standing seam technique on a vented plywood no flame spread or penetration is shown following Brooft4 testing. For facades requiring only A1 and A2 materials to be used the plywood and can replaced with a galvanised steel deck for traditional fully supported zinc façade systems. The vented cavity can be dealt with by creating flashings that compartmentalise the vented cavity or by using intumescent fire barriers that maintain the ventilated cavity in normal conditions, leaving the 38mm continuous free air space, but, in the * This list is not exhaustive event of fire, the intumescent ventilated fire barriers guickly expand to seal off the cavity to prevent fire spread. Not all fire-retardant materials are compatible with zinc, therefore please contact us should you require project-specific information.

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

Other VMZINC® systems

Roofing systems

VMZINC[®] has been used as a roofing system for almost 200 years. The most common system is standing seam roofing. However, for heritage projects, batten cap roofing is a popular option.

Ornaments

VMZINC[®] ornaments were first made by 19th century workshops in Paris. The tradition continues with VMZINC[®] ornaments fabricating both standard and bespoke ornaments that are sent to all corners of the world.

Rainwater systems

Whether for new build or refurbishment, VMZINC® rainwater systems have been designed to complement a wide range of building materials and styles. Pre-weathered finishes offer exceptional colour stability while developing the natural, selfprotecting patina for which zinc is renowned. This ensures that maintenance requirements will be minimal throughout the systems' design life and that the material's installed appearance will be retained for many years.

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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 National Construction Training Service. 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. VMZINC[®] at WORK partners are able to offer 50-year material warranties.

RIBA Approved CPD Seminars

Please contact us to book a CPD seminar entitled `Zinc as Building Envelope`. 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.

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