

# VMZINC Rainwater

## 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 a 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.

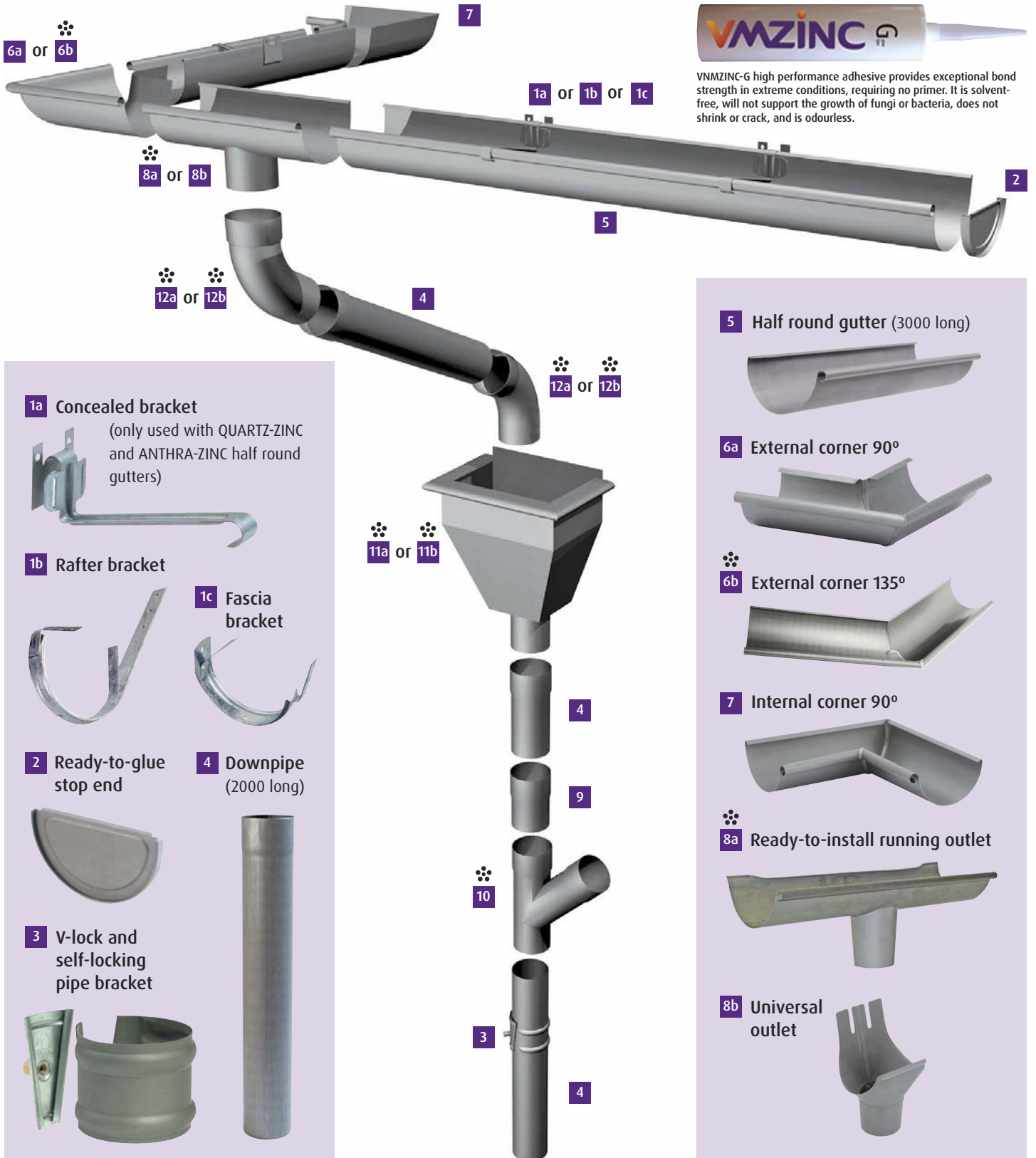
- Benefits**
- Comes in ready-to-use kit form
  - Stylish flowing gutter line through use of concealed galvanised steel brackets
  - Self-locking downpipe brackets
  - Sleeve connection on pipes
  - QUARTZ-ZINC, ANTHRA-ZINC and PIGMENTO finishes
  - Lightweight yet durable
  - Quick to install
  - Low 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



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## 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



VMZINC-G high performance adhesive provides exceptional bond strength in extreme conditions, requiring no primer. It is solvent-free, will not support the growth of fungi or bacteria, does not shrink or crack, and is odourless.

**1a** Concealed bracket  
(only used with QUARTZ-ZINC and ANTHRA-ZINC half round gutters)

**1b** Rafter bracket

**1c** Fascia bracket

**2** Ready-to-glue stop end

**4** Downpipe (2000 long)

**3** V-lock and self-locking pipe bracket

**5** Half round gutter (3000 long)

**6a** External corner 90°

**6b** External corner 135°

**7** Internal corner 90°

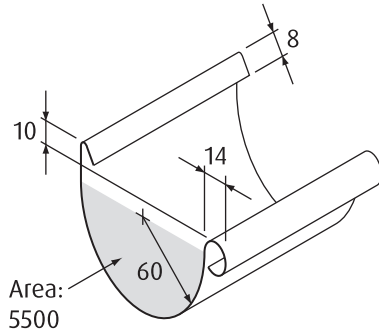
**8a** Ready-to-install running outlet

**8b** Universal outlet

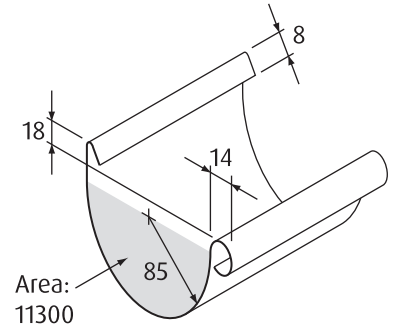
# VMZINC Rainwater

## Half Round rainwater system

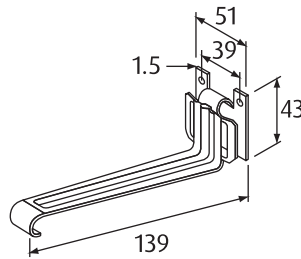
All gutters, pipes and fittings are available in QUARTZ-ZINC and ANTHRA-ZINC. They are also available in PIGMENTO except where indicated with an asterisk



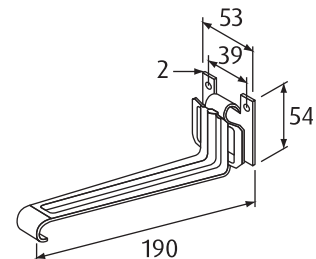
Half round gutter (3000 long):  
Type 250



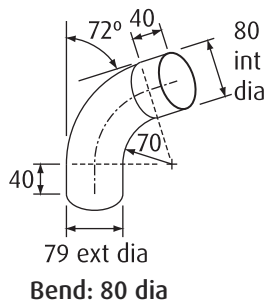
Half round gutter (3000 long):  
Type 333



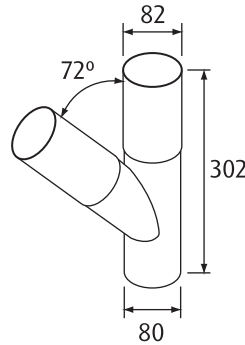
Concealed bracket:  
Type 250



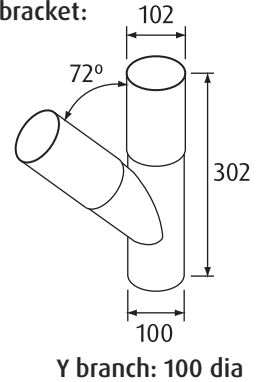
Concealed bracket:  
Type 333



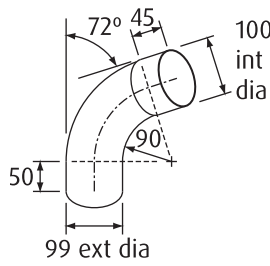
Bend: 80 dia



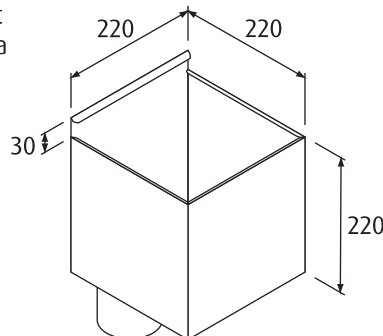
Y branch: 80 dia



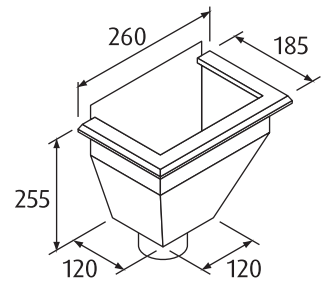
Y branch: 100 dia



Bend: 100 dia



Box hopper head:  
Outlet size 100



Hopper head:  
Outlet size 80 or 100

All dimensions in mm



# VMZINC Rainwater

## 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.



# VMZINC Rainwater

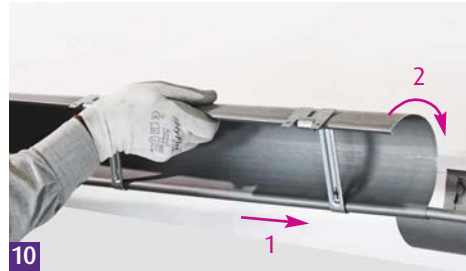
## Half Round rainwater system

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.

# VMZINC Rainwater

## 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.

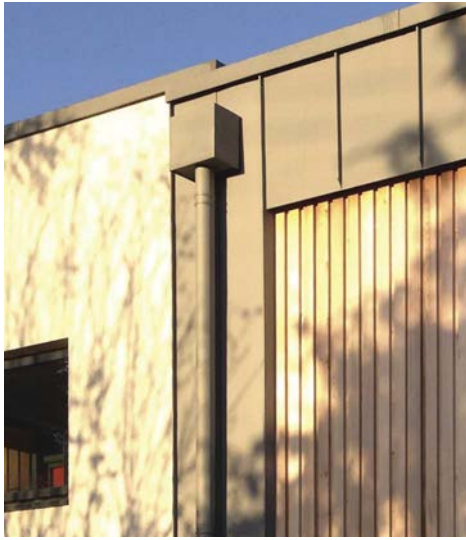




# VMZINC Rainwater

## Box gutters and other profiles

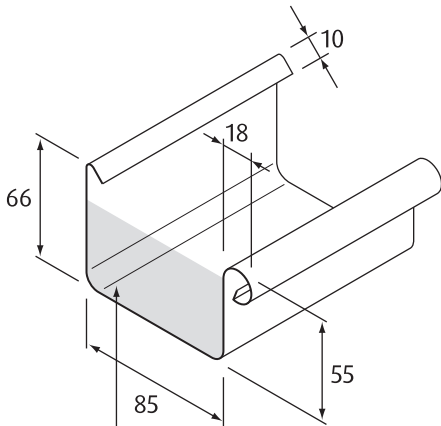
Complete gutter and downpipe ranges



# VMZINC Rainwater

## Box gutters and other profiles

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

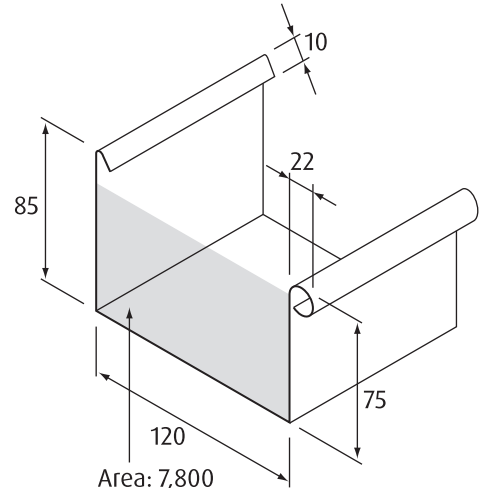


Area: 3,825

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



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

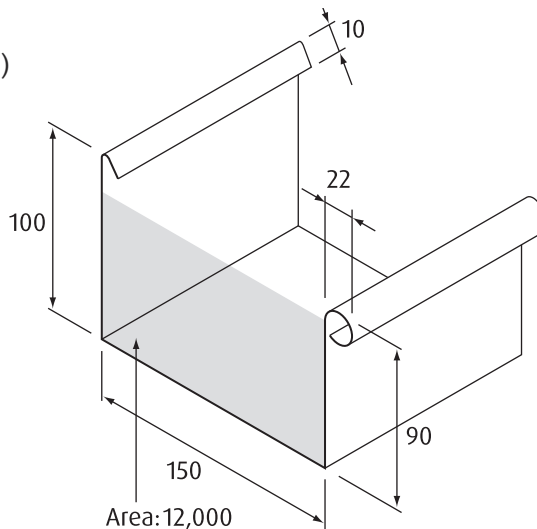


Area: 7,800

**Box gutter (3000 long): Type 333**



**Rafter bracket**

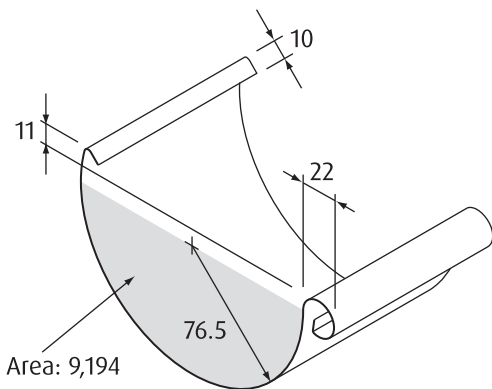


Area: 12,000

**Box gutter (3000 long): Type 400**

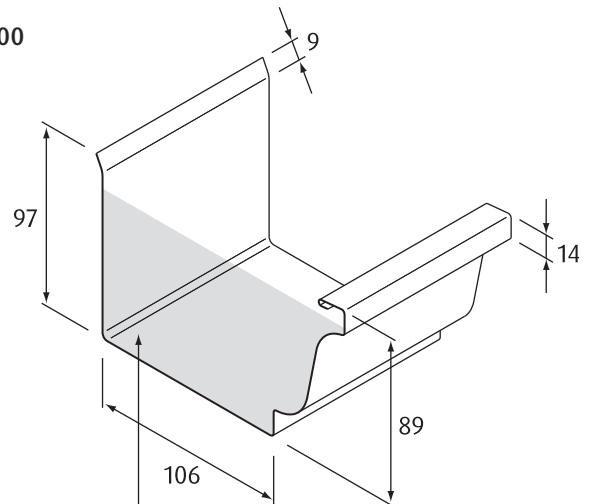


**Stop end**  
(not available in all finishes for all profiles)



Area: 9,194

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



Area: 9,000

**Ogee gutter (4000 or 5000 long): Type 333**

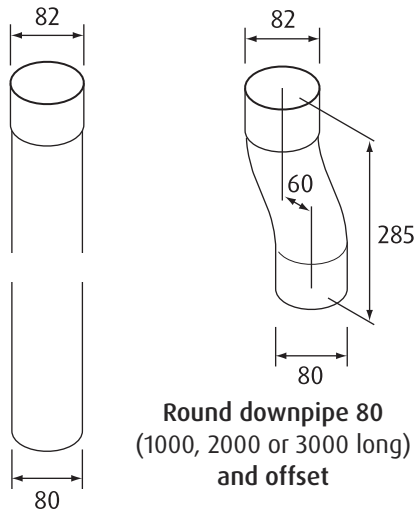
All dimensions in mm



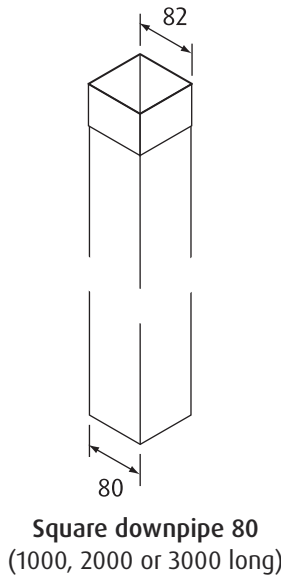
# VMZINC Rainwater

## Box gutters and other profiles

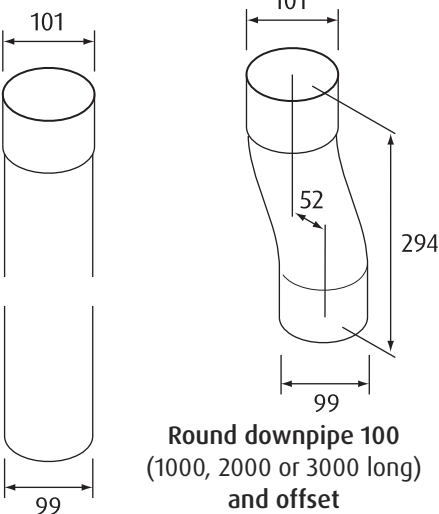
Pipes and fittings available in QUARTZ-ZINC, ANTHRA-ZINC and Natural Zinc



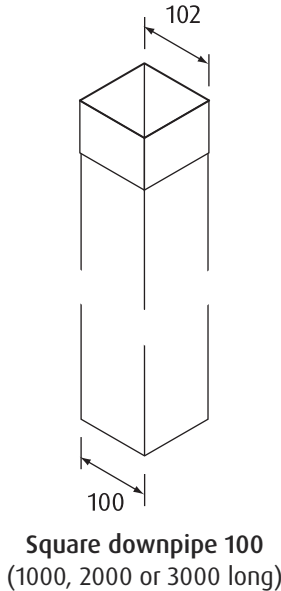
**Round downpipe 80**  
(1000, 2000 or 3000 long)  
and offset



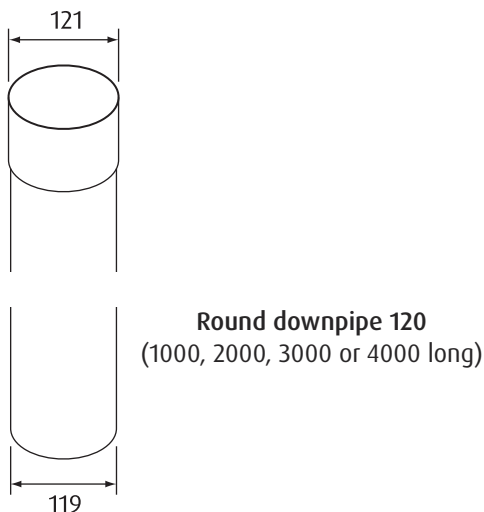
**Square downpipe 80**  
(1000, 2000 or 3000 long)



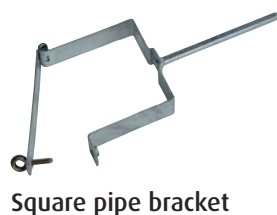
**Round downpipe 100**  
(1000, 2000 or 3000 long)  
and offset



**Square downpipe 100**  
(1000, 2000 or 3000 long)



**Round downpipe 120**  
(1000, 2000, 3000 or 4000 long)



**Square pipe bracket**

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

# VMZINC Rainwater

## 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** (m <sup>2</sup> )
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/m<sup>2</sup>.

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 46.
- 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.

