New generation of QUARTZ-ZINC® & ANTHRA-ZINC®

Technical data sheet

Benefits

Authentic pre-weathered zinc

- Incomparable texture
- A unique patina surface aspect.

Substantially improved performances

- Unrivalled properties against white rust
- Anti finger mark properties
- New easily removed protective film.

VMZINC®, the rolled zinc pre-weathering expert

- Broadest range of surface aspects. A unique choice !
- Market innovator since 1978 (pre-weathered zinc)
- Product quality : best process control.

Melbourne Convention Center - Architect: NH Architecture and Woods Bagot

VMZINC

Pre-weathered zinc

What is pre-weathering ?

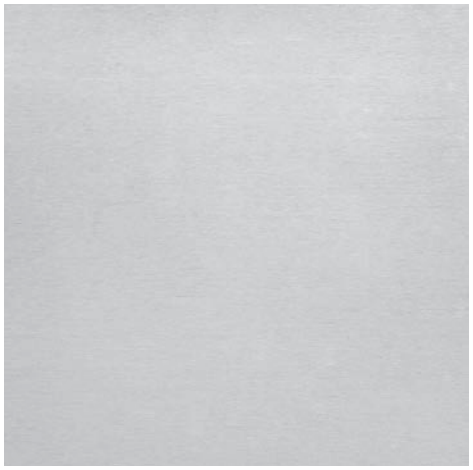
When natural VMZINC® leaves the rolling mill, it has a shiny metallic surface appearance which changes over time as a natural light grey patina is formed, as a result of a chemical reaction with oxygen, CO2 and H2O.

Some years ago VMZINC® (1978, ANTHRA-ZINC®) developed an innovative surface treatment which gives the zinc a patina-like aspect.

It is obtained by a chemical reaction which modifies the crystalline structure of the metal surface, (patina weight ~ 3g/m2). It is therefore not a coated finish but a genuine long-lasting treatment of the surface, with an authentic protective patina.

Light grey QUARTZ-ZINC® and slate grey ANTHRA-ZINC® are the result of such surface treatment.

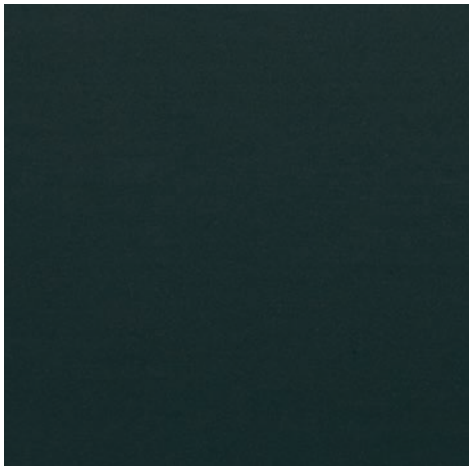
For further info, please call our office.



Natural zinc

House in Sydney - Architect: Fox Johnston

QUARTZ-ZINC®



ANTHRA-ZINC®

Resistance to atmospheric oxidation

The highest resistance to atmospheric oxidation available in the copper-titanium rolled zinc market.

This new generation offer results from extensive research, and offers a genuine layer of patina, together with a specific new anti-corrosion treatment which significantly reinforces resistance to white rust.

Many tests, both in laboratories and in real building environments have proven its performances.

Among those tests, the most demanding is the severe cyclic humidity test : the zinc is subjected to a 10 times 24 hours alternance test of 100 % relative and ambient humidity atmosphere, with different temperatures. White rust development, expressed as mass gain, is measured.

The new generation of QUARTZ-ZINC® and ANTHRA-ZINC® simply do not show any development of white rust after 240 hours of this highly demanding test.

In order to optimize its performance, QUARTZ-ZINC® and ANTHRA-ZINC® are always protected with a film. It is easy to remove, tough, durable, recyclable and indicates rolling direction and safety information.

Auditorium symphonique Fondation Shaw (Singapore) - Architect: CPG Consultants

Durable colour

This new generation of QUARTZ-ZINC® and ANTHRA-ZINC® stabilizes its colour for decades.

This is confirmed by Minolta 2500 colour test (SCI mode, brilliance included). After 2000 of UVA a slight increase in brilliance is observed which, in a natural setting, will be gradual and uniform. The differences before and after exposure are not visible to the naked eye.

Anti-finger mark properties

New QUARTZ-ZINC® and new ANTHRA-ZINC® have excellent resistance to finger marking. It has been largely tested, in particular on fairs, and the results reveals for better than any coated zinc with thin organic coating.

Mechanical specification

Manufactured according to:

- EN 988 standard (European standard for copper-titanium zinc)
- ASTM B69 (US standard for copper-titanium zinc)
- In particular,
    - Tensile strength > 150 N/mm
    - Creep resistance (1 hour under a load of 50 N/mm²) < 0,1%
- Non magnetic
- Non flammable.

Individual house, Pamplona (Spain)
Architect: Antonio Vaíllo i Daniel - Juan L. Irigaray Huarte. VAÍLLO & IRIGARAY + GALAR Arquitectos.

Use recommendations

The field of use of new QUARTZ-ZINC® and new ANTHRA-ZINC® is enlarged thanks to their greatly improved anti-corrosion resistance.

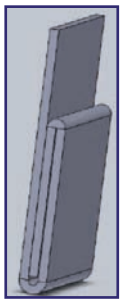
Use in corrosive environment (marine climate) : salt in the air or in water after drying on zinc surfaces leaves stains which have a whitish appearance. These white residues will normally be washed away by rainfall. However, in drier marine environment, it may remain on the surface. Salt deposit will tend to develop near the shore on zinc soffits and other protected areas of a building such as, but not limited to eave flashing, gutter underside, etc..., water naturally condenses and then evaporates from zinc surfaces having some salts. Spray also contributes to this condition. This is a natural occurrence and Umicore cannot be held responsible for the appearance of salt deposits on zinc surfaces.

Important bending recommendations:

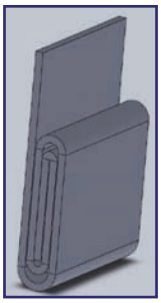
Minimum internal radius/European Coil Coating Association (ECCA) or US (ASTM B69) bend:

PIGMENTO® thickness (mm)	Minimum internal radius (mm)	E.C.C.A. bend	ASTM B69 bend
0.7	2.1	3 T	6 T
0.8	2.8	3.5 T	7 T
1.0	3.0	3 T	6 T

Correspondence min radius/ASTM B69 (US standard) bend:
Example in 0.7 mm: min. radius of 2.1 mm i.e. 6 T as 2.1 = (6 x 0.7) / 2. (x 2 for ECCA)
ASTM B69 bend = number of internal thicknesses
Min radius = number of internal thicknesses / 2
For natural zinc, QUARTZ-ZINC® & ANTHRA-ZINC®, the min internal radius is 1.5 times the thickness (i.e. 3T).



ECCA 0.5 T bend



ECCA 1.5 T bend

Other important information for successful bending

- Preferably bend perpendicular to direction of rolling
- No bending below 10°C
- If necessary, reheat the metal before forming using hot air blower (gas or electric)
- If necessary, reheat the metal before mechanized crimping using a hot air device combined with the crimping tool. In case of manual crimping, preheat the seal using a manual hot air device (heat gun, etc.)
- Make rectilinear bends
- Do not scratch the zinc with a very sharp object (could start a crack)
- Protect the tool jaws to avoid damaging the surface of QUARTZ-ZINC® and ANTHRA-ZINC®
- For siding with a vertical standing seam, use a manual crimping tool with rollers such as Wukopli or Mask, with manual crimping of the first bend
- Note: in the workshop, hot bending improves results.

Recommendations concerning technical solution chosen for building envelope: choose a system that limits the number of cut edges and their exposure

In all cases, bends must be used whenever possible instead of cut edges.
For unrinsed surfaces exposed to corrosive environments, choose the system/configuration that minimizes the exposure of the cut edges.

For unrinsed surfaces, we recommend washing periodically, as usual.

For further info, please call our office.

Implementation, maintenance and up keep

- QUARTZ-ZINC® and ANTHRA-ZINC® must be worked at a minimum forming temperature of 10°C.

- QUARTZ-ZINC® and ANTHRA-ZINC® have special forming recommendations, in particular regarding bending. The minimum bending radii are specified in this document (p.5).

The results of the bending, stamping, scratch, shock and adherence tests demonstrate the excellent mechanical strength of QUARTZ-ZINC® and ANTHRA-ZINC®. These results can be presented if requested.

- Cleaning before braze welding: the new generation of QUARTZ-ZINC® and ANTHRA-ZINC® must be cleaned on both sides. They offer increased resistance to chemical cleaning on its rear side. We prefer mechanical cleaning by abrasion. In case of chemical cleaning, it is best to use Decalaq to remove the colored coating and then VMZ Deca to remove the QUARTZ-ZINC® substrate.

- The QUARTZ-ZINC® and ANTHRA-ZINC® expansion ratio is identical to that of the other VMZINC® rolled zinc products.

- Refinishing paint is not planned. The cleaned or graded surfaces will gradually take on a natural patina that will blend with the entire colored surface.

- Film: there is no color difference between the filmed parts and the non-filmed parts.

- As for the previous generation, QUARTZ-ZINC® and ANTHRA-ZINC® do not require any special care.

- In case of graffiti, cleaning can be performed. However, no graffiti cleaning is inoffensive for QUARTZ-ZINC® and ANTHRA-ZINC® and an indication will remain on the treated areas.

  Any cleaning products must be tested before use in order to check that the cleaning product is not aggressive for the organic layer.

- The sole purpose of this document is to describe the main technical characteristics of VMZINC® products manufactured by Umicore. The specification and installation of these products are the sole responsibility of the architects and building professionals who must, in particular, ensure that these products are used in away suited to the end purpose of the building and that they are compatible with the other products and techniques used. The specification and installation of the products implies respecting the standards in force and the manufacturer's recommendations. In this regards, Umicore publishes and regularly updates specification and installation manuals for specific geographic areas and provides training courses (contact local VMZINC® team for any information). Umicore cannot be held responsible for any specification or use of its products that has not respected all these standard, recommendations and practices.

- Aesthetic type criteria are by nature subjective non warranted and related to each market. The photos and samples may vary from the finish of the project book in the samples.

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