Technical Information

Magna Flow™

Pre-painted steel with magnesium added technology for superior corrosion resistance.

colorcote.co.nz

ColorCote®
The right roof always lasts longer

MagnaFlow™

A remarkable substrate that heals its own cuts

ColorCote® MagnaFlow™ takes our standard zinc/aluminium alloy-coated steel substrate to the next level with the addition of magnesium. This enables the zinc to 'flow', which seals the cut edges, preventing exposure to premature corrosion. This makes it ideal for harsher environments and those nearer the coast.

Warranties backed by Fletcher Building

35+

Performing in the Australian market for over 35 years

MagnaFlow™

MagnaFlow is a highly durable product with improved cut edge performance designed to give excellent colour retention and high formability at moderate cost.

Technical

ColorCote MagnaFlow
Conforms to AS/NZS2728:2013
Suitable for ISO9223:2012
Atmospheric Classifications C1 – C4

Substrate

Hot-dipped zinc/aluminium/magnesium alloy coated steel coil, 240gms/m^2 coating weight.

Pre-treatment

Corrosion resistant chromate conversion coating.

Primer

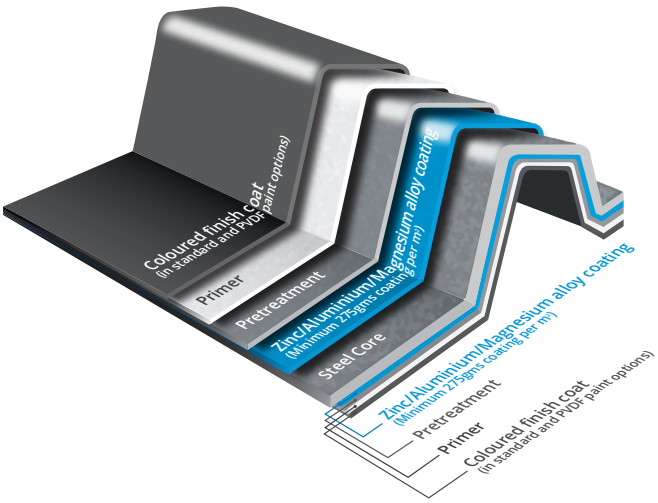
Flexible corrosion resistant chromated primer. Nominal film thickness 7µ ± 1µ on the top side and 5µ ± 1µ on the reverse.

Finish Coat

Flexible exterior acrylic, polyester or modified polyester coating. Nominal film thickness 18µ ± 2µ.

Backing Coat

Shadow Grey (standard colour) wash coat, 5µ ± 1µ nominal thickness.



Gloss

Typical gloss levels are 25 ± 5% measured in accordance with AS/NZS 1580.602.2 (60 degrees). A range of our colours can also be supplied in a low gloss version if required.

Strippable Film

Products can be supplied with an optional strippable protective film at extra cost. This material has a relatively short life span when exposed to sunlight and weather. It should be removed either just before, or immediately after installation. If stored indoors strippable film should be removed within 12 months of delivery from ColorCote.

Need an extra durable finish?

MagnaFlow X uses exactly the same substrate but comes with a more protective paint system for use in chemical or industrial environments.

Technical

ColorCote MagnaFlow X
Conforms to AS/NZS2728:2013
Suitable for ISO9223:2012
Atmospheric Classifications C1 – C4

Primer

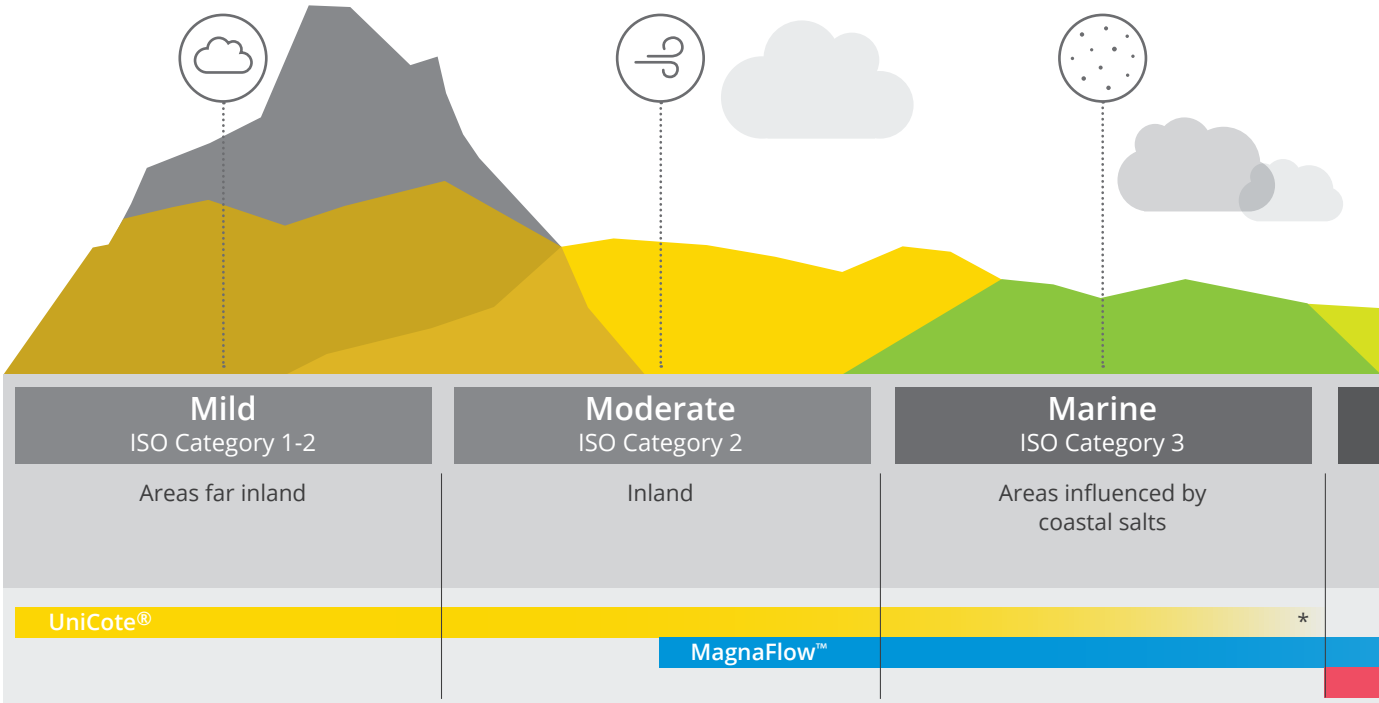
Flexible corrosion resistant chromated primer on both sides. Nominal film thickness 7µ ± 1µ on the top side and 5µ ± 1µ on the reverse.

Finish Coat

70% PVDF system (Polyvinylidene Fluoride). Nominal film thickness 20µ ± 2µ. The exterior coat of ColorCote MagnaFlow X is a PVDF paint system containing at least 70% PVDF resin in the dry paint film.

Atmospheric environments

Usage guide



Buildings with exposure to corrosive chemicals such as airports, petrol stations, fertiliser or dairy factories may require a P.V.D.F. paint system to ensure roof or cladding is protected from chemicals in the environment. Please contact Selection Steel for a recommendation if you are unsure which paint system is required.

MagnaFlow performance testing

Scratch resistance

Good scratch resistance. Testing includes needle scratch test – no marking of paint surface when a needle with a 2kg weight attached is drawn across. ASTM D5178-13.

Impact resistance

AS/NZS2728:2013 Table 2.2 and Appendix E. No loss of paint adhesion after a test piece is struck on the reverse side with a specified force, in line with the test methodology described in Appendix E.

Bend test

AS/NZS2728:2013 section 2.6.1 and Appendix F – No loss of adhesion or paint cracking when bent around a diameter equal to five times the thickness of the sheet.

Heat resistance

Suitable for continuous service up to 100ºC. Continuous service at higher temperatures may cause some colour change and damage to the paint film.

Tested under New Zealands most demanding environmental conditions and ready for the harsh Australian landscape.

Results from lab tests are backed up with ongoing testing through out New Zealand providing real world testing in demanding industrial & marine environments.

Salt spray

Meets the requirements of AS/NZS2728:2013 Sections 2.8 and 2.10

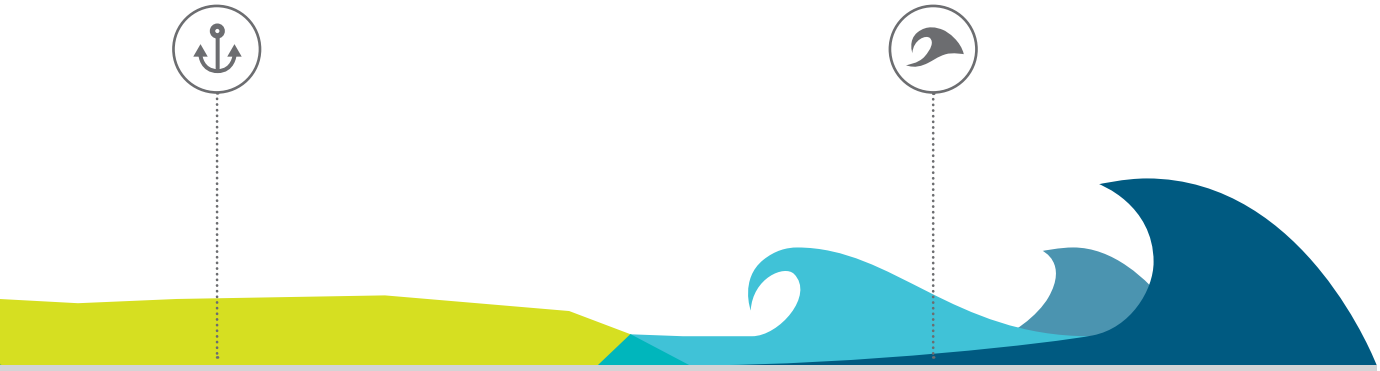
Humidity resistance

Meets the requirements of AS/NZS2728:2013 Sections 2.8 and 2.9

QUV resistance (durability of coating system)

Meets the requirements of AS/NZS2728:2013 Section 2.8 and Table 2.4

Note: Tests are conducted on a flat panel.



Severe marine
ISO Category 4

Very severe
ISO Category 5

BEGINS between 100-400 metres from the coast. May extend inland depending on local conditions	Off shore and within 100-400 metres from the coast. May extend inland depending on local conditions	Close to breaking surf (typically 50-500m). Close to corrosive industrial emissions (typically 0-100m)

AlumiGard™ *

These are general guidelines only. Building location, design & aspect need to be taken into account.
Visit selection.com.au to check which product is best suited.

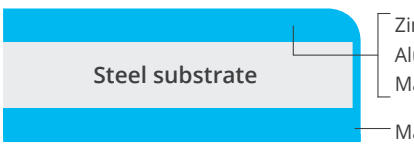
***To ensure warranty will be given, check with Selection Steel before using in these areas.**

The magic of magnesium

A steel roof is most susceptible to the elements along cut edges – but not MagnaFlow.
The addition of magnesium to the standard zinc/aluminium alloy makes all the difference.
As time goes on it allows the protective metal coating to microscopically flow over the cut edge.
At this point a sacrificial anticorrosive reaction takes place and a robust seal is created.

Exposed cut on standard zinc/aluminium coated steel

Anticorrosive reaction of MagnaFlow



Magnesium allows alloy to flow over cut edge and provides long term protection

Warranty terms

Depending on the environment, Pacific Coilcoaters offers warranties of differing lengths on MagnaFlow for residential buildings.

Application		Environment (ISO CAT) 1-3	4	5
Roofing	Paint	20 yrs	20 yrs	15 yrs*
	Perforation	30 yrs	25 yrs	15 yrs*
Wall cladding	Paint	15 yrs	15 yrs	15 yrs*
	Perforation	25 yrs	20 yrs	15 yrs*
Guttering & Downpipes	Paint	20 yrs	12 yrs	10 yrs*
	Perforation	20 yrs	12 yrs	10 yrs*
Fascia	Paint	20 yrs	15 yrs	10 yrs*
	Perforation	20 yrs	15 yrs	15 yrs*

* A warranty on MagnaFlow in ISO 5 is subject to prior approval by Pacific Coilcoaters.
Refer to specific warranty information for full terms and conditions, including exclusions and minimum maintenance requirements.
Buildings close to industrial areas which are be exposed to corrosive chemicals may require MagnaFlow X (for added protection via PVDF paint). Visit colorcote.co.nz and complete the warranty enquiry form.

Performance

Outdoor durability

ColorCote MagnaFlow and MagnaFlow X, under normal well washed conditions of exposure, can be expected to show no cracking (other than that which may occur during forming), flaking or peeling of the paint film for 15 years from the date of installation.

Colour change during service will depend on the colour chosen, aspect, design of the structure and the environment.

Some chalking may occur. A maximum rating of 2 is expected after 20 years exposure, when measured in accordance with AS/NZS1580.481.1.11:1998.

Scale is between 0 and 5 with a lower number indicating less chalking.

The above are subject to minimum maintenance requirements (refer to minimum maintenance section on page 8).

Recommended end uses

MagnaFlow has very good colour and gloss retention and is suitable for roofing, cladding, and rainwater goods. MagnaFlow is ideal for animal shelters, flashings, interior uses, and exterior environments where corrosion levels are moderate. It is also suitable for fencing applications.

MagnaFlow X has outstanding colour and gloss retention and is suitable for roofing, cladding, and rainwater goods. ColorCote MagnaFlow X is ideal for interior uses, and for exterior applications such as severe marine and industrial sites where there is a high risk of deterioration from corrosive elements in the environment.

For information concerning product use in areas not covered by ColorCote MagnaFlow or MagnaFlow X, refer to the ColorCote AlumiGard technical information brochure or contact ColorCote for details.

You can check which ColorCote product is right for your building by completing the warranty enquiry form online at colorcote.co.nz

Roof pitch

Do not use a pitch less than three degrees (eight degrees for corrugated profile) to avoid ponding and premature degradation of the coating system.

Important

ColorCote MagnaFlow and MagnaFlow X are not suitable for use in the following situations:

- **For water tanks or areas where a constantly wet environment is maintained.**
- **In direct contact with concrete or where lime deposits are evident.**
- **In contact with soil (allow a 75mm run off below cladding sheets to ground level).**

Handling and rollforming

To avoid damaging the paint surface the material must be handled carefully during transport and rollforming.

Pacific Coilcoaters does not recommend the use of rollforming lubricants on our products.

The use of rollforming lubricants will affect performance of pre-painted metal and will lead to staining and uneven, premature fading.

Storage of coil

On no account should coils be allowed to get wet. Rain or condensation is drawn between the surfaces by capillary action, and then cannot evaporate normally. This can cause deterioration of the coating leading to a reduced life expectancy and poor appearance. The same applies for finished roofing and cladding sheets.

Rollforming performance may be affected if coils are stored for more than 12 months.

Touch-up paint

ColorCote is a baked on paint system which has different weathering characteristics to standard air drying paints. **Do not use touch-up paint on ColorCote products.** Scratches should be left alone to heal.

Clean up

Installation procedures involving self-drilling screws, drills and hacksaws etc will leave deposits of swarf and metal particles. These particles including blind rivet shanks, nails and screws should be swept and washed from the roof regularly. **Refer to the SA HB 39:2015 Installation code for metal roof and wall cladding.**

Site practice

If nestable profiles become wet while closely stacked, formation of wet storage stain or 'white rust' is inevitable.

To minimise the possibility of inadvertent damage:

- **Inspect deliveries on arrival.** If moisture is present, individual sheets should be dried immediately with a clean rag and then stacked to allow air to circulate and complete the drying process.
- **Well ventilated storage is essential.** Always store metal products under cover in clean, well-ventilated buildings.
- **Cross stack or fillet sheets** where outside storage is unavoidable and make provision for a fall to allow water to run off. Cover the sheets.

It is the responsibility of the roofing contractor to avoid damaging the roof sheeting during its installation and fixing. Never drag sheets from a pile. Remove by 'turning off' the stack. Lift sheets onto the roof, and do not drag over the eaves or the purlins. Use clean footwear. Remove swarf and other contaminants regularly. Avoid transferring sunscreen from hands or knees on to painted MagnaFlow as this can degrade the paint quality. **Refer to the SA HB 39:2015 Installation code for metal roof and wall cladding.**

Installation

Refer to the SA HB 39:2015 Installation code for metal roof and wall cladding for correct installation guidelines, particularly in regard to underlays/building papers, penetrations, flashings, fasteners, pitch etc.

Dissimilar metals

When dissimilar metals come into contact with each other, the electric potential difference between the metals establishes a corrosion cell, and accelerated corrosion can occur.

To avoid this problem, the following precautions should be observed:

- **Avoid discharges of water from brass or copper pipes on to ColorCote MagnaFlow and MagnaFlow X.**
- **Do not use non-galvanised steel, copper, brass, lead, stainless steel or monel metal in direct contact with ColorCote MagnaFlow and MagnaFlow X.**
- **Do not use lead flashings in contact with ColorCote MagnaFlow and MagnaFlow X products. Soft edge aluminium or notching of flashings are the best solutions.**
- **Tanalised timber contains copper, so must not be used in direct contact with ColorCote MagnaFlow and MagnaFlow X products. Use PVC tape or similar barrier to isolate potential problem points of contact between materials.**

Fastenings

Class 4 coated screws will give the best service life with ColorCote MagnaFlow and MagnaFlow X products. Galvanised nails with pre-painted MagnaFlow washers can be used on MagnaFlow.

Do not use stainless steel or monel fasteners on ColorCote MagnaFlow and MagnaFlow X products.

In all cases ensure the fasteners are installed correctly with the ColorCote MagnaFlow and MagnaFlow X product.

For further details refer to the SA HB 39:2015 Installation code for metal roof and wall cladding or consult your fastening supplier.

Sealing and jointing

Where sealed joints are required, use only neutral cure silicon rubber sealant together with mechanical fasteners such as aluminium rivets. **Do not weld or solder ColorCote products.**

Cut edge sealing

Coil-on is not required for ColorCote MagnaFlow and MagnaFlow X.

Minimum maintenance

The service life is extended by regular washing. A mechanical wash every six months is recommended, more often if contaminants build up. At these times inspect for damage and failing fasteners, and repair these.

Unwashed areas

These are typically those areas that are not washed by natural rainfall, such as the underside of eaves, sheltered roofs or wall cladding, under solar panels etc. These areas are excluded from warranty. ColorCote recommends the exclusion of unwashed areas by design wherever possible.

In cases where this is not possible, then a regular washing programme should be put in place. Contaminants should be removed by mechanical washing with water and a soft bristle brush at least every six months, or more frequently if contaminant build-up keeps occurring.

Warranties backed by Fletcher Building

Performing in the Australian market for over 35 years

64-66 Ventura Place, Dandenong South, Victoria 3175 Australia
Telephone: 03 9799 6111
www.selection.com.au / www.colorcote.co.nz

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The right roof always lasts longer

PACIFIC® COILCOATERS

SELECTION STEEL