

FASTENERS

FOR ROOFING AND WALLING PRODUCTS

Fasteners used to fix GALVSTEEL™, ZINCALUME® coated steel or COLORSTEEL® products must be compatible with the materials they are joining. The fasteners must also be selected so that they have the same, or superior, durability to that of the products they are joining, in the environment in which they will be used.

CHOICE OF FASTENER FOR LONG LIFE

When a long lasting product is used for roofing, walling or accessories, it is vital the performance of fasteners used to fix cladding and accessory materials have the same or superior service life as the New Zealand Steel product with which they are to be used. Consequently, the correct selection of fastener for these jobs is of paramount importance for long-term structural performance and aesthetics.

A general guide to selecting the correct fastener for your roofing and cladding materials is as follows;

FASTENER RECOMMENDATIONS					
Environmental Category*	ISO	GALVSTEEL™	ZINCALUME®	COLORSTEEL® ENDURA™	COLORSTEEL® MAXX™
Coastal:					
Very Severe	C5	NR	NR	NR	4
Severe	C4	NR	NR	4	4
Moderate	C3	3,4	3,4	3,4	3,4
Industrial:					
Very Severe	C5	NR	NR	NR	4
Severe	C4	NR	NR	4	4
Moderate	C3	3,4	3,4	3,4	3,4
Inland:					
Moderate	C2	3	3	3	3

NR: New Zealand Steel product not recommended for these environmental categories.

4: Heavy zinc or zinc-tin coatings or zinc alloy coated heads complying with AS3566.2–2002 Class 4.

3: Heavy zinc or zinc-tin coatings complying with AS3566.2–2002 Class 3.

* Refer to New Zealand Steel Limited 'Environmental Categories' Brochure.

DURABILITY

In almost all environments, but particularly in marine environments, ZINCALUME® products have considerably better durability than do galvanised steel products. It therefore makes good sense where possible to use ZINCALUME® washers.

For nails and screws, equivalent or near equivalent durability to ZINCALUME® AZ150 product can be achieved with a heavy galvanised coating (40 microns minimum).

It should be remembered that unpainted ZINCALUME® roofing is not recommended in an environment closer than 500 to 1000 metres from an exposed coast.

SEALING WASHER TYPE

Sealing washers that contain carbon black filler levels of more than 15% by volume or 25% by weight, have been found to cause corrosion of ZINCALUME® and COLORSTEEL® roofing. This is because at these levels of carbon, the washer becomes electrically conductive. Sealing washers should therefore contain less than 15% by volume of carbon black and be impermeable to prevent absorption and retention of moisture.

FASTENING PATTERNS

Fastener type and fastening patterns depend on a number of factors such as wind loads and cladding profiles. Cladding or fastener manufacturers should be consulted for their recommendations.

GALVSTEEL™

COLORSTEEL®

Zincalume®



COMPATIBILITY

ZINCALUME® products and galvanised steel are compatible with each other when in direct contact, and galvanic corrosion will not normally occur between these two materials. For fasteners, this means that corrosion will not occur between the galvanised nail and ZINCALUME® washer, or between a ZINCALUME® spring washer in direct contact with a galvanised roofing profile. In the case of fasteners, there is no detrimental effect from run off from a ZINCALUME® washer onto a galvanised roof, due to the relatively small size of washer compared with the large area of roof. Provided crest fixing is used there is no problem with the use of galvanised fasteners on a ZINCALUME® roof. For pan fixing of a roof, an alternative fastener should be used. Pan fixing of ZINCALUME® wall cladding with galvanised fasteners is acceptable. Below is a table which covers the above cases.

ACCESSORY / FASTENER MATERIAL	CLADDING MATERIAL			
	GALVSTEEL™	ZINCALUME®	COLORSTEEL® ENDURA™	COLORSTEEL® MAXX™
Stainless Steel (300 Series)	No	No	No	No
GALVSTEEL™ and zinc	Yes	Yes*	Yes*	Yes*
ZINCALUME®	Yes*	Yes	Yes	Yes
Aluminium	Yes*	Yes	Yes	Yes
Copper and Brass	No	No	No	No
Lead	Yes**	No	No	No
Monel	No	No	No	No
Carbon Black***	No	No	No	No

* Inert catchment situation may apply. (see Information Bulletin 1)

** Not recommended for severe or very severe environments.

*** As found in some washers, roof penetration flashings and black 'lead' pencils etc.

SHANK CORROSION

In certain end-uses, fasteners may be exposed to a greater risk of corrosion as a result of internal environments (eg. high condensation, industrial buildings, intensive animal farming). In such cases consideration must be given to corrosion protection of the fastener shank. Under AS3566.2-2002, corrosion classification is based on the fastener heads rather than the shank. The fastener manufacturer should be consulted with regards to shank corrosion resistance.

FURTHER INFORMATION

For additional information, literature or technical assistance, please contact:

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