BRANZ

ISSUE595 BULLETIN

FACTORY-COATED METAL CLADDINGS

February 2016

Factory-coated metal claddings are roof and wall cladding products that have an organic coating factory applied to the metallic substrate.

This bulletin outlines the coating process, the coatings available and what to consider when specifying, installing and maintaining factory-coated claddings.

This bulletin replaces Bulletin 488 *Coil-coated metal claddings* and Bulletin 318 *Care of coil-coated claddings*.

1.0 INTRODUCTION

1.0.1 Factory-coated metal claddings are roof and wall cladding products that have an organic coating factory applied to the metallic substrate. A steel substrate will also incorporate a corrosion-resistant metallic coating.

1.0.2 The organic coating may be applied to the product in flat coil form prior to shaping into product or, particularly with tiles, be applied to the product in the factory after forming.

1.0.3 Factory coating (also known as coil coating) is the factory application and curing of organic coatings to a metal base of steel or aluminium to enhance durability, performance and appeal. Prior to factory coating, a steel base is given a corrosion-resistant coating of zinc or a zinc-aluminium alloy.

1.0.4 The advantages of factory coating include:
- the coating is applied under controlled conditions
- there is a consistent quality of finish
- the coating is less prone to chalking than a site-applied coating
- the material is prefinished, saving time on site
- it carries a factory warranty for both coating life and perforation
- all surfaces are coated not just those visible.

1.0.5 Drawbacks include:
- more care is required when handling, and the coating may be damaged during transportation, storage or installation
- the colour range is less extensive than with post-applied paint systems
- accessories must be colour matched prior to installation.

1.0.6 The performance of factory-coated product depends on the:
- base metal thickness and grade (yield strength – the point beyond which the metal will permanently deform)
- thickness and type of metallic coating applied to steel
- thickness and type of paint applied
- environment the material is used in
- profile
- building design
- maintenance carried out.

1.0.7 This bulletin replaces Bulletin 488 *Coil-coated metal claddings* and Bulletin 318 *Care of coil-coated claddings*.

2.0 PERFORMANCE REQUIREMENTS

2.0.1 The key performance requirements for claddings are given in New Zealand Building Code (NZBC) clauses B1 *Structure*, B2 *Durability* and E2 *External moisture*. In terms of NZBC compliance, the factory coating of claddings affects performance only in relation to its ability to comply with B2 *Durability*.

2.1 B2 *DURABILITY*

2.1.1 Factory-coated metal claddings and their fixings are part of the building envelope and are considered moderately difficult to access or replace. They must achieve a durability of not less than 15 years with normal maintenance.

2.1.2 Fascias, gutters and downpipes are considered easy to access and replace and are generally required to achieve a durability of not less than 5 years.

2.1.3 Materials and fixings used as a structural element in stressed skin construction or as a bracing element must achieve a durability of not less than 50 years.

3.0 CORROSION RISK

3.0.1 AS/NZS 2728:2013 *Prefinished/prepainted sheet metal products for interior/exterior building applications – Performance requirements* and ISO 9223:2012 *Corrosion of metals and alloys – Corrosivity of atmospheres – Classification, determination and estimation* categorise exposure zones into five main classes:
A – Very low
B – Low
C – Medium
D – High
E – Very high.

Table 20 in Acceptable Solution E2/AS1 also follows these general descriptions.

3.0.2 NZS 3604:2011 *Timber-framed buildings* combines classes D and E into one area for the purposes of determining fastener durability requirements. However, the mild steel corrosion rate in a class E zone can be three to four times that of class D. Therefore, for the purposes of assessing cladding durability, it is essential that the more specific classes in E2/AS1, AS/NZS 2728:2013 and ISO 9223:2012 are applied.

3.0.3 Table 1 gives general descriptors of corrosion zones, which may extend inland due to local conditions. It is recommended that specifiers confirm the environmental conditions with the cladding manufacturer to ensure the correct product is specified.

3.0.4 Factory-coated claddings are designed to perform in a well washed, well ventilated environment. Surfaces kept wet for prolonged periods will deteriorate more rapidly than surfaces experiencing a wet/dry/wet cycle, as will surfaces not naturally washed by rain.

3.0.5 Unwashed areas will build up surface deposits of salt and other contaminants, which will, when wet, react with the substrate. Unwashed areas will have a corrosion rate approximately three times that of washed surfaces.

3.0.6 Contact with or run-off from other materials must also be considered (see tables 21 and 22 of

TABLE 1. COMPARISON OF CORROSION ZONES IN DIFFERENT STANDARDS.				
NZS 3604:2011	AS/NZS 2728:2013	ISO descriptions used in manufacturers' literature	ISO 9223:2012 (Table 1.1 of AS/NZS 2728:2013)	E2/AS1
	Category A – very low – alpine regions		C1	
Zone B (low)	Category B – low – dry rural areas and regions remote from the coast or pollution sources	Category 2 moderate: >1000 m from exposed coasts or >500 m from industrial emissions	C2	B
Zone C (medium)	Category C – medium – coastal but low salinity	Category 3 moderate: 500–1000 m from breaking surf	C3	C
Zone D (high)	Category D – high – coastal	Category 4 severe: <100–500 m from breaking surf	C4	D
Specific engineering design[1]	Category E-I – very high – industrial		C-5I	E
Zone D (high)	Category E-M – very high – marine, geothermal	Category 5 very severe: <50 m from high water east coast, <100 m from high water west coast	C-5M	

1. Includes industrial and corrosive atmospheres, contamination from agricultural chemicals or fertilisers and locations within 50 m of a geothermal hotspot.

E2/AS1 or Table 2 of this bulletin). Microclimates caused by industrial contamination, geothermal activity and fertilisers will also have an effect. Aluminium/zinc coated products should not be used in areas of intense animal husbandry or other alkaline environments.

4.0 BASE METAL

4.0.1 In New Zealand, steel and aluminium alloy are the metals that are factory coated (Table 3).

4.1 STEEL

4.1.1 The mechanical strength (yield strength) of steel is measured in megapascals (MPa). Typical grades used in cladding materials are G300 (lower strength) and G550 (higher strength).

4.1.2 Steel thickness is measured in base metal thickness (BMT) before the application of a metallic coating. In New Zealand, steel for factory coating is typically:

- 0.40 mm or 0.55 mm thick, G550 grade for roll-formed roof and wall claddings
- 0.55 mm thick, G300 grade for folding (such as fascia gutters, flashings), G550 for roofing and cladding
- 0.39 mm thick, G300 or G250 grade for pressed metal tiles (E2/AS1).

4.1.3 Thickness and grade (strength) should always be specified together.

4.2 ALUMINIUM

4.2.1 Aluminium alloys used for roof and wall claddings in New Zealand are usually from the 5000 series, with typical thicknesses of:

- 0.7 mm for fascia, spouting and tiles, typically hardness level H34 or H32
- 0.7 or 0.9 mm for roof and wall cladding, typically hardness level H36, which can also be used for simple flashings (that is, not lock seamed).

5.0 METALLIC COATINGS

5.0.1 Before factory coating, steel is protected from corrosion by a metallic coating applied by continuous hot dipping. This protects the base metal even when small areas of steel become exposed, such as at cut sheet ends, fixing holes or scratches.

5.0.2 Metallic coatings are typically:

- zinc (Z)
- aluminium/zinc alloy (AZ)
- zinc/aluminium alloy (ZA)
- zinc/aluminium/magnesium alloy (ZM).

5.0.3 Aluminium/zinc alloy (AZ – typically 55% aluminium, 43.5% zinc, 1.5% silicon) is the most widely used in New Zealand. Zinc/aluminium (ZA – typically 95% zinc, 5% aluminium) is less common.

5.0.4 AZ and ZA coatings are generally not recommended in harsh alkaline environments such as in contact with wet concrete or enclosed animal husbandry areas or fertiliser works.

5.0.5 Zinc/aluminium/magnesium (ZM) alloy-coated steel is considered to have better durability in marine and other aggressive environments. The addition of magnesium is said to improve resistance to edge corrosion.

5.0.6 Aluminium coil does not require a metallic coating.

5.1 GALVANIC CORROSION

5.1.1 All metals have a different electrical potential. This is referred to as their nobility. When different metals come into contact with each other, especially when water is present, chemical reactions occur, causing the less noble metal to corrode in preference to the more noble metal. This is known as galvanic corrosion, dissimilar metal corrosion or bimetallic corrosion. Less noble metals such as zinc are applied to steel in order to protect the steel substrate by corroding in preference to the steel but at a slower rate. This is known as galvanic protection.

TABLE 2. MATERIAL COMPATIBILITY.[1]

Key
0 Suitable
§ Suitable but may stain
I Use with caution
X Not suitable

		Aluminium	Prepainted aluminium	AZ-coated steel	Zinc-coated steel	Prepainted AZ steel	Zinc	Copper/brass	Stainless steel	Lead	Plastics/glass	Concrete and plaster – wet[2]	Concrete and plaster – dry[3]	Acidic timber or containing copper compounds
Aluminium	Contact with	0	0	0	0	0	0	X	0	X	0	X	I	X
	Run-off onto	0	0	0	X	0	X	0	0	0	0	§	§	0
Prepainted aluminium	Contact with	0	0	0	0	0	0	X	0	X	0	X	0	X
	Run-off onto	0	0	0	X	0	X	0	0	0	0	0	0	0
AZ-coated steel	Contact with	0	0	0	0	0	0	X	X	X	0	X	0	X
	Run-off onto	0	0	0	X	0	X	0	0	0	0	§	§	0
Zinc-coated steel	Contact with	0	0	0	0	0	0	X	X	0	0	0	0	X
	Run-off onto	0	0	0	0	0	0	0	0	0	0	§	§	0
Prepainted AZ steel	Contact with	0	0	0	0	0	0	X	I	X	0	X	0	X
	Run-off onto	0	0	0	X	0	X	0	0	0	0	0	0	0
Zinc	Contact with	0	0	0	0	0	0	X	X	0	0	X	0	X
	Run-off onto	0	0	0	0	0	0	0	0	0	0	§	§	0
Copper/brass	Contact with	X	X	X	X	X	X	0	I	I	§	§	0	0
	Run-off onto	X	X	X	X	X	X	0	0	I	§	§	0	0
Stainless steel	Contact with	0	0	X	X	I	X	0	0	0	0	0	0	0
	Run-off onto	0	0	0	X	0	X	0	0	0	0	0	0	0
Lead	Contact with	X	X	X	0	X	0	I	0	0	0	0	0	X
	Run-off onto	X	X	X	0	X	0	0	0	0	0	§	§	0
Plastics/glass	Contact with	0	0	0	I	0	I	§	0	0	0	I	0	0
	Run-off onto	0	0	0	X	0	X	0	0	0	0	0	0	0
Concrete and plaster – wet[2]	Contact with	X	X	X	0	X	0	§	0	0	I	0	0	0
	Run-off onto	X	X	X	0	X	0	§	0	0	I	0	0	0
Concrete and plaster – dry[3]	Contact with	0	0	0	0	0	0	0	0	0	0	0	0	0
	Run-off onto	0	0	0	0	0	0	0	0	0	0	0	0	0
Acidic timber or containing copper compounds	Contact with	X	X	X	X	X	X	0	0	X	0	0	0	0
	Run-off onto	X	X	X	X	X	X	0	0	X	0	0	0	0

Notes:

1. Refer also to Tables 21 and 22 of E2/AS1.
2. Wet concrete includes uncured concrete, fibre-cement or within plaster walls.
3. Dry concrete includes cured concrete not exposed to rain.

TABLE 3. SHEET MATERIAL OPTIONS.

Material	Grade	Thickness (mm)	Metal coating	Pre-paint finish available	Relevant standards
Steel	G550	0.40 mm or 0.55 mm BMT	zinc, aluminium/zinc, zinc/aluminium/magnesium	yes	AS 1397-2011
	G300	0.55 mm BMT		yes	
Aluminium (plain or embossed)	5052	0.70 mm or 0.90 mm BMT	N/A	yes	AS/NZS 1734:1997
	5005	0.70 mm or 0.90 mm BMT		yes	

5.1.2 Brass, copper, lead and stainless steel are more noble than aluminium/zinc-coated steel and aluminium used for prepainted metal substrates. Direct contact with these dissimilar metals will cause rapid corrosion of prepainted metal products.

5.1.3 Water run-off from these noble metals onto factory-coated building products may also lead to discolouration, stain and/or corrosion problems, especially in aggressive environments and/or after long periods.

5.1.4 Refer to E2/AS1:
- Table 21 for compatibility of materials in contact
- Table 22 for compatibility of materials subject to run-off.

6.0 COATING AND FORMING PROCESS

6.0.1 The processes and coatings used differ between manufacturers but have many similarities.

6.0.2 In general, for the factory-coating process, the steel or aluminium coil is:
- unwound
- cleaned and pretreated to activate the surface
- primed (one or both faces)
- oven baked
- top coated on both surfaces
- oven baked
- inspected for defects (this happens continuously throughout the process)
- recoiled
- transported to the roll-forming factory.

6.0.3 Paint coatings are applied by rollers that ensure an even film over the coil. This is not a powder-coat finish.

6.0.4 The primer adheres to both the substrate and the top coat, providing intercoating adhesion and added corrosion protection.

6.0.5 The top coat prevents UV degradation of the primer and provides colour. It must also be:
- hard enough to resist damage during profiling and installation or in use
- flexible enough to form to relatively tight bends without excessive micro-cracking
- resistant to colour change, fading and chalking
- able to withstand extremes of temperature
- suitable for collection of potable water.

6.0.6 The standard grey back coat is generally less resilient than the top coat. Double-sided systems are readily available, but an exposed double-sided undersurface cannot be expected to be durable in a marine condition, even with regular maintenance.

6.0.7 The coated coil is made into products by:
- roll forming – profiled sheets for cladding, flashings, downpipes and gutters
- folding – flashings
- press forming – roofing tiles.

6.0.8 Evolving technologies in paint coatings include solar reflectance (minimising solar heat gain) and photovoltaic properties.

7.0 SPECIFYING THE MATERIAL

7.1 CORROSION RESISTANCE

7.1.1 For corrosion resistance, the selection of substrate and primer is more important than the top coat. On more aggressive sites (AS/NZS 2728:2013 categories D and E), aluminium base metal is the most resistant to corrosion.

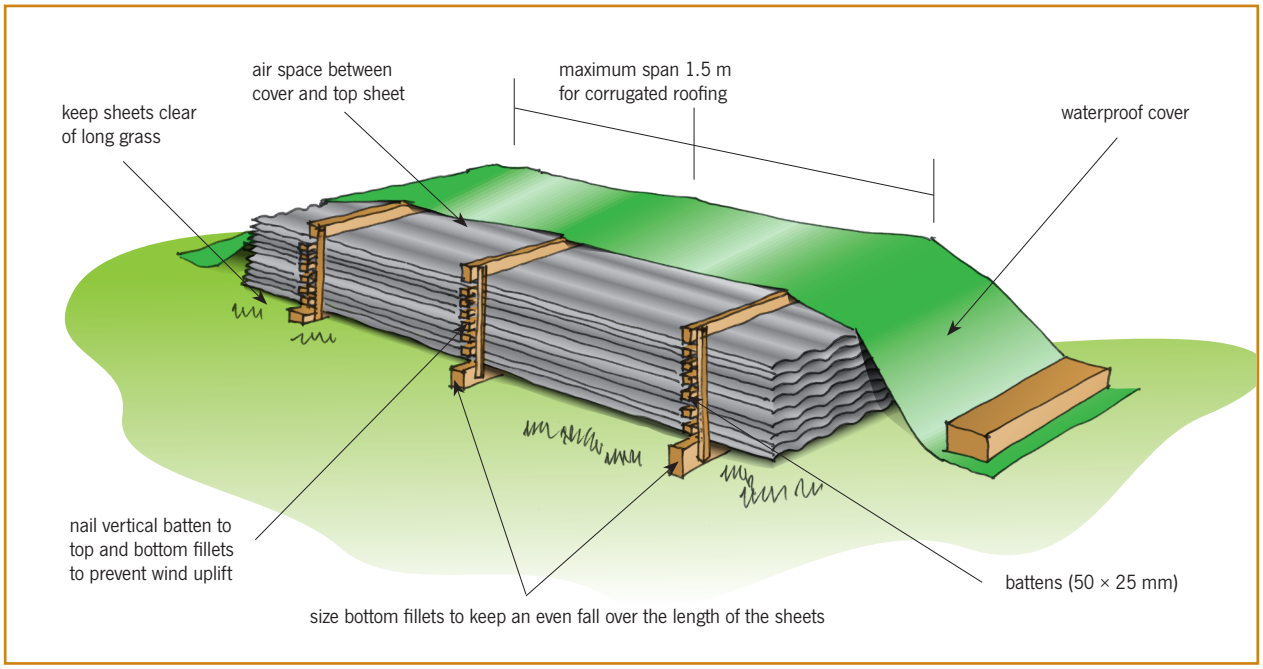

Figure 1. Storage on site.

7.1.2 Factory-coating manufacturers or suppliers will normally nominate specific factory-coated products for use in specific environments rather than identify the composition of primer and top coat.

7.1.3 The manufacturer should provide a warranty for a specific coating and profile for the proposed use on the building and building location.

7.1.4 Corrugated profiles with smooth curves rather than profiles with sharp angles should be used in severe environments (AS/NZS 2728:2013 categories D and E) to minimise the risk of micro-cracking that can cause premature failure of coatings.

7.2 COLOUR RANGE

7.2.1 A range of colours is available from factory-coating manufacturers and suppliers.

7.2.2 Where a colour is not held in stock or is non-standard, a lead-in time and a minimum order requirement may apply.

8.0 DESIGN

8.0.1 Good design can maximise the performance of a factory-coated product by taking account of environmental factors, construction features and associated corrosion risks. Environmental factors include:

- salt spray, particularly to unwashed areas
- overhanging trees – these will shelter cladding from the sun, prolonging time of wetness, and may drop corrosive debris
- industrial pollution and vehicle exhaust
- geothermal activity.

8.1 DESIGN FACTORS

8.1.1 Design factors that may accelerate deterioration of a factory-coated product include the build-up of salt, dirt, debris and moisture.

8.1.2 Design to avoid or minimise:

- areas that will not be rain washed, such as beneath eaves and solar panels
- areas of ponding caused, for example, by low pitch or excessive spans
- areas prone to capillary action
- complex junctions and complicated flashings
- exposed undersides of factory-coated products
- obstructions to water flow where debris may accumulate.

8.1.3 When ponded water evaporates, it leaves a salty residue that will increase deterioration. Ponded water may also penetrate through laps or joints.

8.1.4 If a roof is expected to take construction or later maintenance loads, select the roofing profile/gauge and purlin spacings accordingly.

8.2 ACCESS AND SERVICES

8.2.1 When mounting services directly on factory-coated materials, use proprietary mounting brackets that do not penetrate the pan and allow airflow and rain washing beneath the fixture.

8.2.2 Specify proprietary roof access walkways or use a plank to spread the load when working on the roof.

9.0 GOOD SITE PRACTICE

9.1 TRANSPORTATION

9.1.1 When the sheets are transported to the site, check that the strappings:

- are not too tight (causing buckling or damage)
- pass completely around the bundle
- have padding at the edges of the bundle.

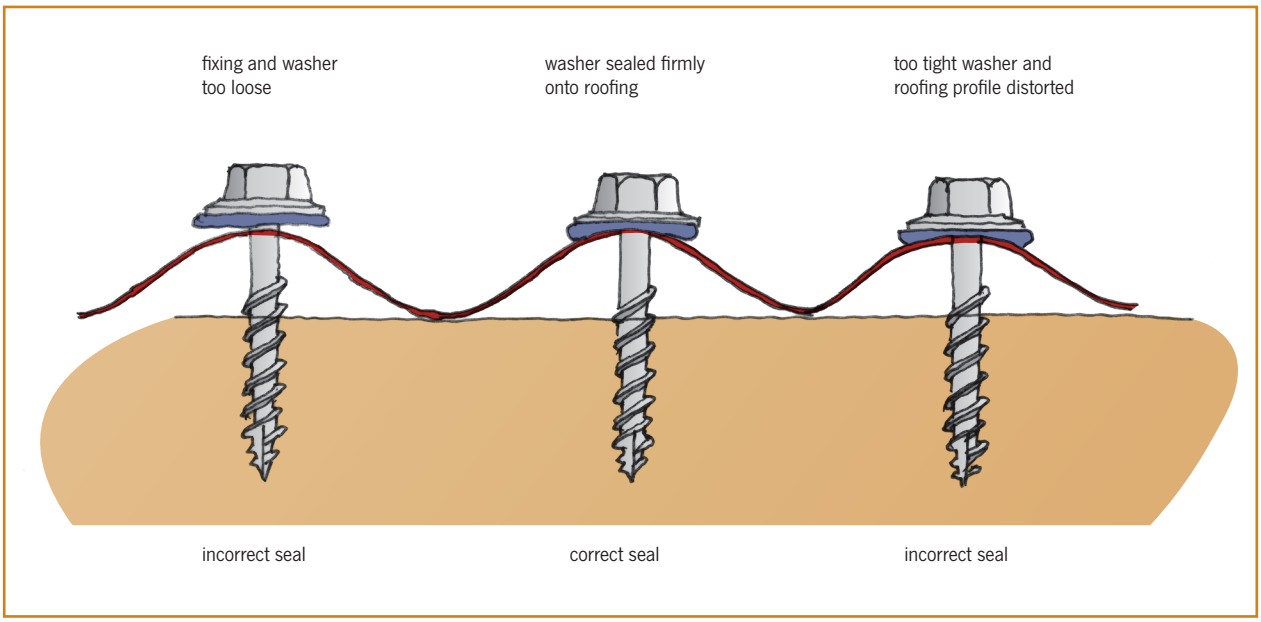

Figure 2. Installation of screws and sealing washers (roofing screws for fixing into steel purlins shown).

TABLE 4. FASTENERS FOR FACTORY-COATED METAL.				
Substrate	Exposure zone	Fastener class	Fastener (screws)	Rivets
Aluminium	All	C5	Stainless steel* or aluminium	Aluminium
ZA, AZ, ZM steel	D	C5 (pref) C4 (min)	Factory-coated steel	Aluminium
	B, C	C4	Factory-coated steel	Aluminium

* Type 304 stainless steel minimum.
Use slotted hole and washer to separate materials.

9.1.2 If shrink-wrap packaging is used, check that the bundles are dry.

9.1.3 Do not use chains with factory-coated products.

9.1.4 Unload sheets carefully. Do not drag them across other sheets or tip them off the truck. Inspect the material at the time of delivery, checking:
- for scratches, buckling, puncturing or rubbing marks
- for patchy, uneven colour
- for wetness – if sheets are wet, they should be separated so that they can dry out
- that material is of the same brand and is as specified
- for signs of white rust or other corrosion.

9.1.5 Any badly damaged sheets should be rejected.

9.2 STORAGE ON SITE

9.2.1 After inspection, the sheets will usually be stacked on site until needed. Stacking should be:
- for as short a time as possible
- in an open area well clear of the construction area and any other work
- clear of the ground, long grass and other materials
- slightly sloped so that moisture can run off
- with untreated timber spacers between each sheet (preservatives in damp treated timber may attack the coating)
- covered, allowing adequate ventilation while protecting the sheets from water and dirt (Figure 1) – ventilation is important to help prevent any moisture collecting between sheets.

9.2.2 Until the sheets are used, inspect stacks regularly for condensation.

9.2.3 If sheets are not kept dry during storage, white rust or other corrosion can develop, most noticeably on the areas of the cladding profile where the coating has been deformed. Affected areas should be scrubbed with a nylon bristled brush to remove the deposit. If the cladding is ventilated and dry, the corrosion should not reform.

9.3 CUTTING

9.3.1 Cut with tin snips or a nibbler, not circular saws or abrasive wheels.

9.3.2 Cutting should be neat. Any site forming should be performed slowly to minimise damage. Roughly cut edges and holes rapidly lead to corrosion. At low temperatures, the paint coating may become brittle and crack if bent, resulting in weak areas prone to corrosion.

9.4 FIXING AND FASTENERS

9.4.1 Fixing methods used are nails, screws and pop rivets in conjunction with sealants. General points to note:
- Avoid damaging the coating when fixing the cladding in place.
- Do not weld or solder the cladding.
- Use self-centring drill bits when drilling.
- Use only screw fasteners for fixing cladding, Class 4 minimum. Do not use leadhead nails or twist shank nails.
- Use non-conductive EPDM washers with screws and ensure screws are correctly tightened (see Figure 2).
- Use only neutral-cured silicone or MS polymer sealants, and avoid acid or amine-cured silicone sealants.
- Separate coated metal from mild steel structural members or butyl rubber with a non-conductive, non-absorbent strip material.
- Manufacturers of factory-coated metal do not recommend stainless fixings in contact with coated steel cladding.
- Sweep cladding clean of all metal turnings, pop rivet shanks and other debris after fixing.

9.4.2 Match the fastener to the substrate and coatings and the expected life of the cladding. Indicative fastener types are given in Table 4. Refer to the manufacturer for product-specific fasteners.

9.5 ACCESSORIES

9.5.1 Accessories such as flashings, valley gutters and downpipes are available with factory-coated finishes to match the cladding. If accessories are painted after installation, the weathering characteristics of the site-painted material will differ from that of the factory-coated cladding and a colour and/or performance difference may be visible in a short time.

9.5.2 Ensure that flashings and other accessories are used and fixed as recommended by the manufacturer. If sealant is being used, it should be applied to avoid voids and trapped air. Crevices should be avoided, as dirt and salt can become trapped and may initiate and promote corrosion.

10.0 INSTALLATION

10.0.1 The installer must ensure that all possible care of the finish is taken during installation:

- Do not drag sheets.
- Do not drop or drag ladders and tools on the cladding.
- Pad ladders where they rest against the cladding.
- People walking on the cladding should wear soft-soled shoes without a deep tread that might pick up grit.
- Walk on batten positions for pressed metal tile roofs.
- Install walkways if the roof will have a lot of foot traffic.
- Advise other trades of these precautions.
- Sweep and clean the roof daily with a soft broom to remove all loose swarf.

10.0.2 Avoid damaging the coating or substrate with other materials:

- Organic solvents and oils may stain the surface or result in accelerated chalking or colour fading.
- Chemicals leaching out of treated timber may cause deterioration of the coating and/or corrosion of the substrate.
- Cleaners used on concrete or glass may attack the coating if they come in contact with the factory-coated material.
- Water run-off may stain or mark the coating.
- Contact with dissimilar metals (such as brass, copper or lead) may corrode the metal substrate.
- Wet cement splashes are alkaline and may corrode the cladding. Dried cement splashes that have not been removed may cause further corrosion.
- Sunscreen lotions may contain semi-conducting ingredients such as titanium dioxide (TiO_2) and zinc oxide (ZnO) that can accelerate the degradation of paint systems.

10.0.3 A protective film may be applied in the factory to help prevent damage to the finish during storage and transportation. If unexposed to weathering (for example, when in storage) the film will give protection for 6–9 months before needing to be removed.

10.0.4 This film cannot be relied on for protection of the finish during installation. It should be removed within 24 hours before installation. If exposed to weathering, it will quickly become difficult to remove.

10.0.5 Site-applied paint to cover exposed metal should not be used, otherwise appearance problems will quickly develop. The rate of weathering of the two paint types will be different, and this leads to a noticeable colour difference.

10.0.6 Allow for thermal movement at the fixing points, particularly with long lengths of cladding. If not, the cladding will buckle and possibly tear as it expands and contracts, fasteners may shear and noise problems may ensue. Aluminium has approximately twice the thermal expansion characteristic of steel.

10.0.7 After installation and fixing, check the roof to ensure that:

- there are no screws, pop rivets, swarf or pieces of metal on the roof or in the guttering
- touch-up paint has been sparingly used
- there are no mortar splashes, paint or sealant spills on the roof.

11.0 MAINTENANCE AND LIFESPAN

11.0.1 The Building Act requires that, when the job is completed, the building contractor must give the client copies of any guarantees/warranties for the materials. They must also explain what maintenance work must be done, especially if this is required to meet NZBC requirements or guarantee/warranty requirements.

11.1 WASHING

11.1.1 A roof that is subject to uniform rain wetting should get sufficient cleaning from rain, but leaves and other debris should be cleared from gutters regularly to avoid water ponding. Higher-risk areas such as around flues and under aerials and trees may require more regular cleaning to remove bird droppings and lichen.

11.1.2 Dirt, salt and other pollutants may accumulate on wall claddings even when they are rain washed. Obvious deposits such as bird droppings should be washed away as soon as they are seen to avoid poultice corrosion. Walls should be washed in accordance with the manufacturer's recommendations to meet warranty conditions.

11.1.3 Areas not rain washed such as the undersides of soffits, spouting and areas sheltered by eaves are particularly vulnerable to corrosion. These areas should be washed in accordance with the manufacturer's recommendations to meet warranty conditions.

11.1.4 Roofing joints and laps, if any, may trap moisture and dirt and should be inspected for signs of deterioration or corrosion.

11.1.5 Inspect the fasteners as well, and replace immediately if they are showing signs of failure or rust.

11.2 REPAINTING

11.2.1 While factory-coated finishes are more durable than site-applied coatings, they need to be regularly repainted. Repainting should be undertaken before the top coat has worn away exposing the primer to UV degradation.

11.2.2 If repainting occurs before the top coat has weathered away, a primer will not be needed. Prepare the surface with a high pressure hose or water and a stiff nylon brush. Avoid sanding through the existing organic coating, especially on bends.

11.2.3 Top coat with a proprietary roof paint to the paint manufacturer's recommendation.

11.3 LIFESPAN

11.3.1 In New Zealand's harsh environment, any paint system exposed to the weather will be subject to UV degradation. Generally, factory-coated products will need to be recoated within 15–20 years.

11.3.2 Ultimate life is typically 30–50 years, but this will depend on the environment, design, material used and maintenance. Maintenance may include the replacement or repair of protective coatings in high-risk areas such as penetration back flashings.

12.0 FURTHER INFORMATION

Standards
AS/NZS 1734:1997 *Aluminium and aluminium alloys – Flat sheets, coiled sheet and plate*
AS/NZS 2728:2013 *Prefinished/prepainted sheet metal products for interior/exterior building applications – Performance requirements*
AS 1397-2011 *Continuous hot-dip metallic coated steel sheet and strip – Coatings of zinc and zinc alloyed with aluminium and magnesium*
AS 1562.1-1992 *Design and installation of sheet roof and wall cladding – Metal*
ISO 9223:2012 *Corrosion of metals and alloys – Corrosivity of atmospheres – Classification, determination and estimation*
NZS 3604: 2011 *Timber-framed buildings*

BRANZ
Good Practice Guide *Long-run Metal Roofing*
Good Practice Guide *Profiled Metal Wall Claddings*
Bulletin 441 *Sealed joints in external claddings – 2: Sealants*
Bulletin 519 *Fasteners selection*
Bulletin 567 *E2/AS1 flashing requirements*

NZ Metal Roofing Manufacturers Inc
Code of Practice for Metal Roofing and Wall Cladding

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