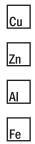
smart sheet[™] Architectural Sheetmetal



metal compatability / dissimilar materials

During the design phase of any project it is important to investigate metal compatability of the materials you intend to use on your project.

Direct contact

When different types of metals come into contact with each other, and particularly when water is present, chemical reactions take place. If these metals are at different ends of the metal galvanic table, the metal lowest on the table will start to deteriorate and effectively fail in time.

Copper, and stainless steel are higher up the galvanic table than aluminium or steel used for most pre-painted metal roofing and cladding products. Most of these products are zinc coated prior to being painted so any direct contact between these dissimilar metals will cause the pre-painted products to corrode.

The best solution is to make sure there is no direct contact between dissimilar metals. If necessary, inert membranes can be used to isolate two different metals.

Water Runoff

In addition to direct contact conflict, careful consideration has to be given to water runoff when designing and selecting products for your project. Water runoff from copper spouting will cause corrosion to pre-painted metal roofing and cladding .

CCA treated timber

Tanalised timber (CCA) and some other timbers such as cedar can also cause galvanic corrosion. In mild atmospheres seal the timber surface with an inert membrane at the points of contact. In severe and very severe conditions the two surfaces must be fully isolated by a rubber or neoprene gasket.

Green concrete:

Green (uncured) concrete and plaster can cause a reaction with pure titanium zinc which should be should be protected by an inert material such as stainless steel where they come into contact.

In all cases its advisable to consult the attached table



 Suitable Suitable but may stain Use with caution X Not suitable 		Aluminium	Pre-painted aluminium	AZ coated steel	Zinc coated steel	Pre-painted AZ steel	Zinc	Copper/Brass	Stainless steel	Lead	Plastics/glass	Concrete & plaster - wet	Concrete & plaster - dry	CCA treated timber
Aluminium	Contact with	0	0	0	0	0	0	×	0	×	0	×	•	\times
	Runoff onto	0	0	0	×	0	×	0	0	0	0	•	•	0
Pre-painted aluminium	Contact with	0	0	0	0	0	0	×	0	×	0	×	0	×
	Runoff onto	0	0	0	×	0	×	0	0	0	0	0	0	0
AZ coated steel	Contact with	0	0	0	0	0	0	X	•	X	0	X	0	X
	Runoff onto	0	0	0	×	0	×	0	0	0	0	•	•	0
Zinc coated steel	Contact with	0	0	0	0	0	0	×	•	0	0	0	0	×
	Runoff onto	0	0	0	0	0	0	0	0	0	0	•	\odot	0
Pre-painted AZ steel	Contact with	0	0	0	0	0	0	×	•	×	0	×	0	×
	Runoff onto	0	0	0	×	0	×	0	0	0	0	0	0	0
Zinc	Contact with	0	0	0	0	0	0	×	•	0	0	×	0	×
	Runoff onto	0	0	0	0	0	0	0	0	0	0	•	•	0
Copper/Brass	Contact with	×	×	×	×	×	×	0	•	•	•	•	0	0
	Runoff onto	X	X	X	X	X	X	0	0	•	\odot	•	0	0
Stainless steel	Contact with	•	•	•	•	•	•	0	0	0	0	0	0	0
	Runoff onto	0	0	0	×	0	×	0	0	0	0	0	0	0
Lead Plastics/glass	Contact with	×	×	×	0	×	0	•	0	0	0	0	0	×
	Runoff onto	•	X	X	0	X	0	0	0	0	X	•	0	0
	Contact with	0	0	0		0		0	0	0	0	•	0	0
	Runoff onto	0	0	0	X	0	×	0	0	0	0	0	0	0
Concrete & plaster - wet	Contact with	X	×	X	0	X	0	0	0	0		0	0	0
Comments of the state of the	Runoff onto	×	•	×	0	×	0	•	0	0	×	0	0	0
Concrete & plaster - dry	Contact with	•	0	0	0	0	0	0	0	0	0	0	0	0
CCA tracked that are	Runoff onto	•	0	0	0	0	0	0	0	0	0	0	0	0
CCA treated timber	Contact with	X	X	X	X	X	X	0	0	X	0	0	0	0
	Runoff onto	X	X	X	×	X	×	0	0	X	0	0	0	0

Use with caution - may mean separation required, or unsuitable in severe environments. Wet concrete includes uncured concrete, fibrecement, or within plaster walls. Dry concrete includes cured concrete not exposed to rain.

