

METAL AND TIMBER COMPATIBILITY

This information is not intended to cover all contingencies where metals incompatibility can cause problems. The subject matter is selective in that it related to metal roofing/gutter situations, and as such is also pertinent for steel rainwater tanks.

Data provided is based on relatively small sections of AS 2179 and AS 2180, published as one booklet by Standards Australia. These two standards combine "Metal Rainwater Goods" together with "Selection and Installation of Metal Rainwater Goods". All trades and professions associated with this subject should read and observe the practices and recommendations contained in this useful publication.

Drainage systems should be designed so that direct contact between two or more incompatible metals or alloys does not occur. Drainage from copper or copper alloy roofs, pipes, etc, must not be discharged onto or into aluminium alloy, zinc, zinc-coated or zinc/aluminium alloy-coated steel gutters, downpipes and the like.

The table which follows is an extract from the BlueScope Technical Bulletin, Corrosion Dissimilar metals CTB-12 and should be read in conjunction with this. CBT-12 is available for download from the 'Tools and Resources' section at www.bluescopesteel.com.au

Contact with (or run-off from) some materials can damage coated steel products. Buildings can also be susceptible to condensation on inside surfaces.

The materials include certain metals, treated timbers and chemicals.

- Don't allow any contact of coated steel products with incompatible materials. (Table 2.1).
- Don't allow discharge of rainwater from incompatible materials onto coated steel products. (Table 2.1).
- Ensure that supporting members are compatible with the coated steel products or, alternatively, appropriately coated.

If there are doubts about the compatibility of other products being used, seek advice from our information line.

Incompatible materials include:

- lead
- copper
- monel metal
- bare steel
- stainless steel (except with SUPERDURA™ Stainless steel cladding)
- carbon (in pencils and some rubbers)
- green or some chemically-treated timber (like CCA or tanalith treatments)
- materials subject to cycles of dryness and wetness or which have excessive moisture content (such as improperly-seasoned timber)
- wet and dry concrete
- soils
- vegetable matter
- cleaning agents (e.g. brick cleaning)
- any material which will inhibit normal exposure to the atmosphere

Table 2.1

Acceptability of drainage from upper surface onto a lower metal surface and direct contact.

COMPATIBILITY OF DIRECT CONTACT BETWEEN METALS OR ALLOYS

ROOF DRAINAGE SYSTEM COMPONENTS & ANY CLADDING MATERIAL	ACCESSORIES OR FASTENER OR (UPPER SURFACE)								
	ZINCALUME® steel	GALVANISED (ZINC COATED STEEL)	ZINC	COLORBOND® steel, COLORBOND® ULTRA steel, COLORBOND® METALLIC steel	SUPERDURA™ Stainless steel	STAINLESS STEEL	ALUMINIUM ALLOYS	COPPER & COPPER ALLOYS ⁽¹⁾	LEAD
ZINCALUME® steel	YES	YES	YES	YES	NO	NO	YES	NO	NO
GALVANISED (ZINC COATED STEEL)	YES	YES	YES	YES	NO	NO	YES	NO	NO
ZINC	YES	YES	YES	YES	NO	NO	YES	NO	NO
COLORBOND® steel, COLORBOND® ULTRA steel, COLORBOND® METALLIC steel	YES	YES	YES	YES	NO	NO	YES	NO	NO
SUPERDURA™ Stainless steel	NO	NO	NO	NO	YES	YES	NO	NO	NO
STAINLESS STEEL	NO	NO	NO	NO	YES	YES	NO	NO	NO
ALUMINIUM ALLOYS	YES	YES	YES	YES	NO ⁽²⁾	NO ⁽²⁾	YES	NO	NO
COPPER & COPPER ALLOYS ⁽¹⁾	NO	NO	NO	NO	NO	NO	NO	YES	NO
LEAD	NO	NO	NO	NO	NO	NO	NO	YES	YES

⁽¹⁾ Monel - copper/nickel alloy.

⁽²⁾ For further guidance refer to AS/NZS 3500.3:2015.

⁽³⁾ In benign environments, mixing of stainless steel and aluminium may be acceptable.

ACCEPTABILITY OF DRAINAGE FROM AN UPPER SURFACE TO A LOWER METAL SURFACE

LOWER ROOF DRAINAGE SYSTEM MATERIAL	ACCESSORIES OR FASTENER OR (UPPER SURFACE)									
	ZINCALUME® steel	GALVANISED (ZINC COATED STEEL)	ZINC	COLORBOND® steel, COLORBOND® ULTRA steel, COLORBOND® METALLIC steel	SUPERDURA™ Stainless steel	STAINLESS STEEL	ALUMINIUM ALLOYS	COPPER & COPPER ALLOYS ⁽¹⁾	LEAD	GLAZED ROOF TILES, GLASS & PLASTIC
ZINCALUME® steel	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
GALVANISED (ZINC COATED STEEL)	NO	YES	YES	NO	NO	NO	NO	NO	YES	NO
ZINC	NO	YES	YES	NO	NO	NO	NO	NO	YES	NO
COLORBOND® steel, COLORBOND® ULTRA steel, COLORBOND® METALLIC steel	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
SUPERDURA™ Stainless steel	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
STAINLESS STEEL	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ALUMINIUM ALLOYS	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
COPPER & COPPER ALLOYS ⁽¹⁾	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
LEAD	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

⁽¹⁾ Monel - copper/nickel alloy.

⁽²⁾ For further guidance refer to AS/NZS 3500.3:2015.

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