

IWS FR Fire Retardant Treated Wood CORROSION INFORMATION



**FIRE RETARDANT PANELS
AND FRAMING TIMBERS**

IWS FR fire retardant has been demonstrated to be non-corrosive to metals. It contains predominantly borates combined with other non-phosphate, non-corrosive ingredients and is a neutral pH. Borates are known to be excellent corrosion inhibitors with solutions and treated timber having excellent anti-corrosion properties. Based on these results and the market experience of borate treatments, timber treated with IWS FR can be expected to be non-corrosive to fixings and fasteners.

Corrosivity of IWS FR Solution towards Metals

The corrosivity of IWS FR solution towards aluminium and mild steel was measured.

A 15% m/m strength treatment solution was used for testing and deionised water used as the control.

Strips of aluminium and mild steel, with dimensions approximately 150mm x 25mm x 1.5 mm, were degreased with acetone then cleaned by light scrubbing with a nylon pad. The steel strips were also soaked in tri-ammonium citrate solution to remove rust. The strips were washed with deionised water, dried then weighed. The method of test involved placing a test strip into a glass jar containing 200g of solution or water so that about 2/3rd of the test strip was immersed. The jars were covered with a plastic bag to reduce evaporative losses and stored in the laboratory at 15-25°C for 6 weeks.

The strips were removed, lightly scrubbed again with a nylon pad, re-cleaned with tri-ammonium citrate solution in the case of the mild steel, washed, dried and reweighed.

The mean mass losses in mg/cm immersed are given in Table 1.

From the results it can be seen that IWS FR solution is not corrosive towards aluminium or steel; in fact, it inhibits corrosion of steel. Based on these results and the market experience of borate treatments, timber treated with IWS FR can be expected to be non-corrosive to fixings and fasteners.

Table 1 – Mass loss for metals in contact with solutions for 6 weeks.

Aluminium	FR/ mg/cm2 immersed	Untreated/ mg/cm2 immersed
	0.14	0.11
	0.11	0.07
	0.13	
	Mean	Mean
0.12	0.09	
Mild steel	FR/ mg/cm2 immersed	Untreated/ mg/cm2 immersed
	0.87	4.68
	0.98	4.54
	0.83	
	Mean	Mean
0.89	4.61	



Lonza Wood Protection is a business of Arch Timber Protection Limited, a Lonza company.

