

# ULTIMET<sup>®</sup> alloy

## Corrosion Resistance of Welds

One of the most important product forms of ULTIMET<sup>®</sup> alloy is welding wire, since many applications involve ULTIMET<sup>®</sup> weld overlays. These overlays are, of course, subject to dilution from the substrate material, often a steel or stainless steel. To provide some idea of the influence of dilution upon the corrosion resistance of ULTIMET<sup>®</sup> weld overlays, a study was undertaken whereby pre-diluted consumables were made by the aspiration casting process, and all-weld-metal (AWM) samples made by deposition on chilled copper blocks. Thus, it was possible to conduct regular (rather than one-sided) corrosion tests in acid solutions on homogeneous samples, diluted with specific substrate materials.

ULTIMET <sup>®</sup> Alloy	Corrosion Rate, mm/y		
	3% HCl, 66°C (150°F)	Boiling 65% HNO <sub>3</sub>	Boiling 2% H <sub>2</sub> SO <sub>4</sub>
Undiluted	0.68	0.15	0.41
Diluted with 9.1%/G10400	1.80	0.30	0.69
Diluted with 9.1%/S31603	1.42	0.25	0.58
Diluted with 16.7%/G10400	2.13	0.30	0.84
Diluted with 16.7%/S31603	2.08	0.23	0.48