

Weld Slag Test

Weld tests were conducted to demonstrate the ability of O'Brien TAW05589 polymer coated single tube and multiple tube bundles to protect the tube from weld slag corrosion.

TAW05589 Protection

O'Brien TAW05589 polymer coating system includes substrate preparation and extrusion process controls for our proprietary polyether based thermoplastic polyurethane that is formulated for UV, ozone, abrasion and tear resistance as well as hydrolytic stability.

Test Description: O'Brien TAW05589 polymer coated single tubes and bare tubes were exposed to weld slag and examined after three months.

In the absence of a recognized ASTM standard, test specimens were assembled on mounting strut using standard system components. Spacing was set as tight as possible to create the greatest potential for trapped debris.

Weld slag was created using a 240V electric arc welder at 240 amps and cutting chamfer rod on a 10ga carbon steel panel suspended 80 - 85mm above the test specimens. The line of weld slag created was perpendicular to and roughly centered over the test specimens. Slag and stringers from the cutting action were allowed to freely distribute over the test specimens.

The specimen rack was allowed to sit for one minute before it was inverted to remove loose debris.

Findings: O'Brien TAW05589 polymer coated tubing exhibited only minor discoloration to the jacket surface even where stringers had become lodged between samples. No penetration or pot marks were observed. The unprotected bare 316L/UNS S31603 and 2507/UNS S32750 tubing had weld slag adhered to the surface of the tube that was not removed with light scraping.

The test rack was exposed to ambient conditions in Houston, TX and examined after three months. All unprotected bare 316L/UNS S31603 and 2507/UNS S32750 tubing exhibited surface corrosion in the areas where the weld slag was adhered.



Corrosion from weld slag on 316L/UNS S31603 SS.



Corrosion from weld slag on 2507/UNS S32750 Super Duplex.