

Inweld Bare & Flux-Coated Nickel Silver

Alloy 773 UNS/CDA C77300

AWS A5.27 Class RBCuZn-D; AWS A5.8 Class RBCuZn-D

ASME SFA5.27 Class RBCuZn-D; ASME SFA 5.8 Class RBCuZn-D

QQ-R-571C MIL-R-19631B

Type RCuZn-D; QQ-B-650 (RCuZn-D)



Description and Applications:

Inweld Bare and Flux-Coated Nickel Silver contains 10% nickel (Ni) and is used for maintenance and repair brazing or oxyacetylene welding of copper and bronze alloys, stainless and carbon steel or nickel and nickel alloys. Deposits are “thin-flowing” and exhibit very high tensile strength, good ductility and excellent corrosion resistance. Inweld Nickel Silver is easily machined and work-hardens when put into service. One of the more popular uses of Nickel Silver is as the matrix “binder” for tungsten carbide particulates used in the manufacturing of tungsten carbide welding rods. These carbide rods are used in oil and gas well drilling equipment repairs. Another popular use for this alloy is for build-up and overlaying worn parts such as bearings, gear teeth and valve seats. Nickel Silver is commonly used in sheet metal and tubular work, repairing broken drill bits, attaching tungsten carbide tips, repairing mill cutters and radiators – all applications where the thin-flowing characteristics of this filler metal can provide wear-resistant deposits on close-fitting joints. A bronze brazing flux is required for Bare Nickel Silver and for best results use a slightly oxidizing flame.

Chemical Composition of Inweld Bare & Flux-Coated Nickel Silver

| Cu | Zn | Si | Al | Pb | P | Ni | Total Other(s) |
|-----------|---------|-----------|------|------|------|----------|----------------|
| 46.0-50.0 | Balance | 0.04-0.25 | 0.01 | 0.05 | 0.25 | 9.0-11.0 | 0.50 |

Single values are maximum unless otherwise specified. The name Nickel Silver refers to the weld deposit color and does not imply the existence of silver (Ag) in the chemistry.

Approximate Melting Temperature: 1715 F (935 C)
 Average As-Welded Brinell Hardness: 90-110
 Tensile Strength minimum: 60,000 psi (414 MPA)



Recommended Braze-Weld Procedures:

Thin parts can be brazed “as is” without preparation other than normal cleaning. Thicker sections should be beveled and cleaned more thoroughly. A joint clearance of 0.001” – 0.003” will maximize the strength of the deposit. When using Bare Nickel Silver, cover the area to be joined with bronze brazing flux. Using a slightly oxidizing (neutral) flame, preheat the part to be brazed until the flux is liquefied. Hold the filler metal to the cone of the flame and add enough filler metal to fill the joint. Try to avoid letting the base metal turn red, but if it does then remove the torch and allow it some time to cool down before proceeding. Remove slag with a chipping hammer and wire brush. Once cleaned and polished, the deposit will have a nice nickel silver color.