

Nickel Silver — Copper Alloy 770

Nickel Silver is the generic name for any of the range of non-precious bright metal alloys composed of copper, nickel, and zinc. Nickel Silver alloys, sometimes called German Silver, derive their name from their bright silvery appearance although they contain no real silver.

There are numerous copper alloys which fall into the general term Nickel Silver. Orbel prefers alloy #770 (55% copper, 27% zinc, and 18% nickel) which exhibits exceptional mechanical properties. Other alloys are available upon request.

Nickel silver is an ideal alloy in the use of printed circuit board shielding due to its electrical conductivity and excellent solderability. Nickel Silver is an excellent alternative to post plated parts offering both reduced cost and lead time.

MATERIAL DATA SUMMARY

Specifications:

ASTM B122, ASTM B151, QQ W321,
SAE J461, UNS C77000

Chemistry Data:

Alloy 770
Nickel Silvers (Copper, Nickel, Zinc)
55% Copper, 27% Zinc, 18% Nickel

Soldering and Welding:

Soldering and brazing of this alloy are both rated as 'excellent'. Oxyacetylene welding and spot welding are both rated as 'good'.

Physical Properties:

½ Hard

- Density: (lb/cu. in.) 0.314
- Electrical Conductivity: (% IACS at 68°F, (20°C) as annealed) = 5.5
- Thermal Conductivity: (BTU per sq. ft. per ft. per hr. per °F at 68°F (20°C) = 17

Tensile Strength:

78 – 95 KSI

Yield Strength:

½ Hard

78 KSI (0.2% offset)

Elongation:

½ Hard

14% in 2 inches