

Data Sheet

DHP COPPER - C106/CW024A

Phosphorus Deoxidised Non Arsenical Copper C106/CW024A is the standard commercial grade of copper where the oxygen content is significantly lowered by a controlled addition of phosphorus during the melting cycle. A slight excess of phosphorus ensures complete removal of any oxide. The residual phosphorus remains alloyed with the copper within the specified range 0.013-0.050%.

The copper content of C106 is 99.85% minimum. This is the preferred grade for non-electrical purposes such as fasteners, roofing sheet, plumbing tube and other general engineering and constructional applications. The alloy comes into its own where the manufacture of the component or plant involves welding or brazing.

This grade of copper is not susceptible to hydrogen embrittlement which can be a serious risk when non-deoxidised grades.

Key Features:

Very good electrical and thermal conductivity values

Non-magnetic & spark resistant

Good corrosion resistance

Excellent joining properties

Ideal for plating and polishing

Related Specifications:

C106 CW024A

C12200 Cu-DHP

Chemical Composition:

Copper 99.85% min

Oxygen 0.013 - 0.050%

Total Imps 0.06% max

Typical Uses:

Roofing sheet, heat exchanger plant, calorifiers, chemical plants, storage tanks, architectural metalwork, air conditioning equipment and pipe work, central heating systems, refrigeration plant, chemical pipe work, water and gas installations and tubing, soil and waste disposal, marine and general engineering fasteners, masonry fixings and numerous other applications where the excellent workability, joining properties, thermal conductivity and corrosion resistance to many process environments is unique.

Typical Physical Properties:

Melting point	1083°C
Density	8.94 g/cm ³
Specific heat	385 J/Kg °K
Thermal conductivity	340 W/m°C
Thermal expansion coefficient (20 - 200°C)	17.3 x 10 ⁻⁶ per °C
Electrical conductivity	90% IACS
Electrical resistivity	0.0246 microhm/m
Modulus of elasticity	130 000 N/mm ²

Fabrication Properties:

Hot working temperature range	750 - 950°C
Hot formability	Good
Cold formability	Excellent
Cold reduction between anneals	95% max
Machinability rating (free cutting brass=100)	20%
Bendability (Gilding Brass 95%)	70%

Joining Methods

Soldering	Excellent
Brazing	Excellent
Oxy-acetylene welding	Good
Gas-shielded arc welding	Excellent
Resistance welding: Spot and seam butt	Fair - Good