COPPER C106 CW024A

PRODUCT DESCRIPTION

It is believed that copper has been mined for over 5000 years. It can be found in elemental form and in minerals cuprite, malachite, azurite, chalcopyrite and bornite. Copper is often found as a by-product of silver production.

Next to Silver, Copper is the next best conductor of electricity. It has yellow/gold colour that can be polished to a bright metallic lustre. It is tough, ductile and malleable. Copper has a disagreeable taste and peculiar smell. It is resistant to corrosion in most atmospheres including marine and industrial environments. It is corroded by oxidising acids, halogens, sulphides and ammonia based solutions. C106 / CW024A, is a phosphorus de-oxidised non-arsenical copper that is 99.9% pure.

APPLICATIONS

- Refrigeration
- Gutters and roofing
- Gas plants
- Hydraulic, air and oil lines
- Air Conditioning and refrigeration
- Heater units and burners tubes consumer
- Plumbing pipe and fittings

C106 / CW024A Copper corresponds to the following designations:

- UNS C12200
- ISO Cu-DHP

CHEMICAL COMPOSITION

ELEMENT	% PRESENT
Others (Total)	0.0 – 0.10
Copper (CU)	Balance

SUPPLIED FORMS

C106 / CW024A, is typically supplied as Round tube, Half-hard Sheet and Soft Sheet.

- Sheet
- Tube
- Plate

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PHYSICAL PROPERTIES

PROPERTY	VALUE
Density	8.92 Kg/m3
Melting Point	1083°C
Thermal Expansion	16.9 x 10.6 /K
Modulus of Elasticity	117 GPa
Thermal Conductivity	391.2 W/m.K
Electrical Resistivity	0.0203 x 10.6 Ω .m

MECHANICAL PROPERTIES

PROPERTY	VALUE
Proof Stress	50 – 340 MPa
Tensile Strength	200 – 400 MPa
Elongation	50 – 5%
Hardness Vickers	40 to 120 HV

Mechanical properties vary widely according to condition (soft / half-hard / etc.)

CORROSION RESISTANCE

Corrosion resistance is either good or excellent in most environments and atmospheres other than those containing ammonia ions.

COLD WORKING

C106 / CW024A, has an excellent response to cold working.

HOT WORKING

With forging of brass rated as 100, the hot forge ability of C106 / CW024A is rated at 65. Hot working temperatures should be between 760and 870°C.

HEAT TREATMENT

Solution treatment or annealing can be done by rapid cooling after heating to 370 – 6500C.

MACHINABILITY

This alloy has a machinability rating of 20 when Brass CZ121 / CW614N is 100.

WELDABILITY

De-oxidation of C106 / CW024A improves embrittlement resistance during welding. Brazing and soldering are both excellent joining methods for C106 / CW024A. Gas shielded arc welding is also excellent. Oxyacetylene welding and butt welding are good. Welding methods not recommended include:

- Coated metal arc welding
- Spot welding
- Seam welding

DISCLAIMER

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