

CuDHP

CuDHP | C12200

Cu-DHP is a deoxidized, oxygen-free copper with a phosphorus content. It has excellent formability and joining properties. Its application areas include electrical components, pipe production, roofing, cladding, and equipment manufacturing.

| Comparable Standarts | | |
|----------------------|-------|--------|
| EN | JIS | UNS |
| CW024A | C1220 | C12200 |

| Chemical Composition % | |
|------------------------|-------------|
| Cu | P |
| min 99.90 | 0.015-0.040 |

| Physical Properties | | |
|-------------------------|-------|----------|
| Melting Point | 1083 | [°C] |
| Density | 8.9 | (g/cm³) |
| Cp @ 20°C | 0.377 | [kJ/kgK] |
| Thermal Conductivity | 340 | (W/mK) |
| Electrical Conductivity | ≥79 | %IACS |
| Modules of Elasticity | 132 | [GPa] |
| α @ 20°C | 17.6 | [10-6/K] |

Note: The specified conductivity applies to the soft condition only.

Cp specific heat

 $\boldsymbol{\alpha}$ thermal expansion coefficent

| Fabrication Properties | |
|------------------------|----------------|
| Cold Formability | excellent |
| Hot Formability | excellent |
| Soldering ability | excellent |
| Oxyacetylene welding | good |
| Gas shield arc welding | excellent |
| Resistance welding | not recomended |
| Machining | not recomended |
| Brazing | excellent |

Electrical Conductivity

Electrical conductivity depends on chemical composition, the level of cold deformation, and grain size. A high degree of deformation and a small grain size reduce conductivity.

Typcial Uses

Architecture, roofing, electrical components, air, hydraulic, and oil pipes, flexible tubing, air conditioning (systems), heat exchangers.

Corrosion Resistance

Copper is resistant to natural and industrial atmospheres, as well as maritime air, potable and service water (if the flow rate is not excessive), non-oxidizing acids, alkaline solutions, and neutral saline solution environments.

Copper has low corrosion resistance to ammonia, halogenide, cyanide and hydrogen sulfide solutions and atmospheres, oxidizing acids, and seawater (especially at high flow rates).

Mechanical Properties Bend ratio 90° [r] Tensile Strength [MPa] Yield Strangth [MPa] Elongation A50 [%] Hardness HV [-] GW BW R220 220-260 ≤ 140 40-65 0 R240 240-300 ≥ 180 65-95 R290 290-360 ≥ 250 90-110 R360 ≥ 360 ≥ 110

Other tempers are available upon request.

r = x * t (thickness $t \le 0.5$ mm)

 $\label{eq:GW} \text{GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction.}$

| Dimensional Specifications | | |
|----------------------------|------------|--|
| Thickness (mm) | Width (mm) | |
| 0.04-0.20 | 10-400 | |
| 0.21-0.50 | 5-400 | |
| 0.51-1.00 | 5-600 | |
| 1.01-4.00 | 15-600 | |
| 4.01-7.00 | 25-600 | |