



## Casting Material: Leaded Red Brass C83600

**C83600 Leaded Red Brass (85-5-5-5 Brass)** is popular copper with high aqueous and atmospheric corrosion resistance property.

C83600 is Brass Alloy UNS number in ASTM A145 and ASMT B584 and ASTM B505 and ASTM B62 for casting purpose.

**ASTM B145-70 Standard Specification for Leaded Red Brass and Leaded Semi-Red Brass Sand Castings (Withdrawn 1972) (Replace by ASTM B584)**

**ASTM B584 - 14 Standard Specification for Copper Alloy Sand Castings for General Applications**

**ASTM B62 - 17 Standard Specification for Composition Bronze or Ounce Metal Castings**

**ASTM B505 / B505M - 18 Standard Specification for Copper Alloy Continuous Castings**

ASTM B62 only defines one brass casting of C83600, mainly used for component castings of valves, flanges and fittings. But ASTM B505 and B584 defined many brass grades.

### **Leaded Red Brass Nickel C83600 Casting Typical Application:**

Bearing

Bushing

Valve body,

Pump Impeller, Pump Bowl.

Pipe Fittings.

Marine hardware, ship propeller.

Chemical Industry.

### **Leaded Red Brass Nickel C83600 Casting can be made by four casting processes:**

Sand Casting

Investment Casting

Permanent Mold Casting

Continuous casting (Centrifugal Casting).

Casting method is very important to get the different strength. Sand casting can produce any products but it's property is little low. Centrifugal casting can get stably density and have the best strength property.

### **Leaded Red Brass Nickel C83600 Casting Chemical Composition Requirements and Mechanical Property:**

Copper: 84.0-86.0%

Tin: 4.0-6.0%

Lead: 4.0-6.0%

Zinc: 4.0-6.0%

Nickel including Cobalt: 1.0% max

Iron: 0.30% max

Antimony: 0.25%

Sulfur : 0.08% max

Phosphorus: 1.5% max (ASTM B65 required 0.05% max, for continuous castings can be 1.5% max)

Aluminum: 0.005%

Silicon: 0.005% max

*In determining copper minimum, copper may be calculated as copper plus nickel.*





**No Heat Treatment Requirement for C83600 casting.**

**Leaded Red Brass Nickel C83600 Casting Mechanical Properties in ASTM B62 and B584 and B62**

Tensile Strength: 30 ksi(205 Mpa) min

Yield Strength: 14 ksi (95 Mpa) min

Elongation in 2in. or 50.8mm: 20% min

**Leaded Red Brass Nickel C83600 Casting Mechanical Properties in ASTM B505, higher than others standard because it's continuous casting (centrifugal casting)**

Tensile Strength: 36 ksi(248 Mpa) min

Yield Strength: 19 ksi (131 Mpa) min

Elongation in 2in. or 50.8mm: 15%min

Hardness reference: 60HB min.

**Similar or Equivalent Specification**

GB/T 1176 Grade ZCuSn5Pb5Zn5

BS1400 Grade LG2

DIN 1714 Grade G-CuSn5ZnPb

JIS H5114 Grade BC6

ISO 1338 Grade CuPb5Sn5Zn5