HOLME DODSWORTH METALS LIMITED
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ASTM B150: C63200 is an American grade of nickel aluminium bronze. Containing around 9% aluminium, 5% nickel and 4% iron the alloy offers an inherent high strength and hardness combined with a very good toughness and an excellent resistance to wear, shock and abrasion. In addition, C63200 has low magnetic permeability, making it ideal for use on instrumentation systems and seawater piping systems and also offers a very good corrosion, erosion and cavitation resistance in seawater along with a high retention of mechanical properties at low and elevated temperatures.

Nominal Composition

Copper	Rem
Al	8.7-9.5%
Ni	4.0-4.8%
Fe	3.5-4.3%
Mn	1.2-2.0%

Key Features

- High resistance to corrosion and erosion
- Very good strength and toughness
- Excellent resistance to shock, wear and abrasion
- Low magnetic permeability
- High and low temperature performance

Typical Mechanical Properties

Form	Size Range		Yield 0.2%		UTS		Elong %	Hardness (HB)
	Imperial	Metric	Ksi	MPa	Ksi	MPa	%	(HB)
TQ50	<=3”	<= 80mm	50-56	345-386	90-107	621-738	15-25	190-230
TQ50	>3-5”	80-130mm	50-54	345-372	90-105	621-738	18-23	190-230
TQ50	>5”	>130mm	50-53	345-365	90-104	621-717	18-23	190-230

Typical Physical Properties

Melting Point	1046°C
Density	7.64 g/cm³
Thermal conductivity (RT)	36 W/m°K
Electrical conductivity	7 % IACS

Thermal expansion coefficient (20-200°C)	9 x 10-6 /˚C
Modulus of Elasticity	44 GPa

Fabrication Properties

Hot Formability	Not Recommended
Cold Formability	Not Recommended
Machinability rating (free cutting brass = 100)	30%
Stress Relieving Temp. Range	705°C
Maximum operating temperature	230°C

Joining Methods

Soldering	Fair
Brazing	Fair
Oxy-acetylene welding	Not recommended
Gas-shielded arc welding	Excellent

Typical Uses

Typical applications for the C63200 material include marine fasteners, valve assemblies, drive shafts, sea water pump bodies, weapons handling, bushes, sleeve bearings, nuts & bolts