DTD 498

BS B25

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DTD 498 is a solution annealed and precipitation hardened copper nickel silicon alloy. The material's major benefits include high tensile stress and proof stress maintained from moderately elevated to cryogenic temperatures, excellent impact strength, high electrical and thermal conductivity, corrosion, wear, galling and spark resistance. DTD 498 also has very low magnetic permeability and is classed as readily machinable.

The DTD 498 material specification was declared obsolescent from 1 April 1999 and has been superseded by BS B25. Nevertheless, DTD 498 remains technically valid for the servicing of existing equipment.

DTD 498 is typically used for undercarriage components, bearing bushes, splined motor shafts in helicopters and slipper pistons in fuel pumps. Its carefully balanced chemical composition allows for a light control of grain size to ensure optimum higher temperature fatigue resistance. As a result, DTD 498 finds wide application for very high integrity components such as bearing cages in aircraft engines. New applications for the alloy's outstanding properties are being continuously developed.

Related specifications of DTD 498
BS B25
C18000
C64700
CW111C
CuNi2Si

- **EXCELLENT BEARING AND ANTI-FRICTION PROPERTIES**
- **NO LOSS OF IMPACT STRENGTH DOWN TO −196°C**
- **EASY MACHINABILITY**
- **LOW MAGNETIC PERMEABILITY AND SPARK RESISTANCE**
- **EXCELLENT CORROSION RESISTANCE IN MARINE ENVIRONMENTS**
- **GOOD BIOFOULING RESISTANCE**

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Technical Data

Nominal Composition (%)

Cu	Ni	Si
Rem	2.5	0.6

Mechanical Properties (specification minima)

	Round bar
Ultimate Tensile Strength (N/mm^2)	580
0.2% Proof Strength (N/mm^2)	430
Elongation (%)	18
Hardness (HV)	159 - 207

Typical Physical Properties

Density (g/cm^3)	8.87
Specific Heat (J/kg°C)	419
Thermal Conductivity (W/m°C)	190
Young's Modulus (N/mm^2)	284,000
Modulus of Rigidity (N/mm^2)	106,000
Electrical Conductivity (% IACS)	6.9
Specific Electrical Resistance (Ωm)	0.043

Round Bar Weight and Stock Sizes

Diameter	Weight		Diameter	Weight		Diameter	Weight	
ins	kg/ft	kg/m	ins	kg/ft	kg/m	ins	kg/ft	kg/m
0.375	0.19	0.61	1.250	2.15	7.05	2.500	8.60	28.22
0.500	0.34	1.11	1.375	2.60	8.53	3.000	12.38	40.62
0.563	0.43	1.42	1.500	3.09	10.14	3.250	14.53	47.67
0.625	0.54	1.77	1.625	3.63	11.91	4.000	21.87	71.75
0.750	0.77	2.53	1.750	4.16	13.65	4.250	24.84	81.50
0.875	1.00	3.29	1.875	4.83	15.85	4.500	27.84	91.34
1.000	1.38	4.53	2.000	5.50	18.04	5.000	34.40	112.87
1.125	1.74	5.71	2.250	6.96	22.83	5.500	41.60	136.49

NB Weight data for guidance only

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