

**CDA385 (High Speed Free Machining Brass)****Chemical Composition**

(%max., unless shown as range or min.)

	Cu	Fe	Pb	Zn
Min. /Max.	55.0-59.0	.35	2.5-3.5	Rem.
Nominal	57.0	-	3.0	40.0

Note: Cu + Sum of Named Elements, 99.5% min.

Applicable Specifications

Product	Specification
Shapes	ASTM B455

Common Fabrication Processes

Hot Forging and Pressing, Hot forming and bending, Machining

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Spot Weld	Not Recommended
Seam Weld	Not Recommended
Butt Weld	Fair
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Excellent
Machinability Rating	90

Thermal Properties

Treatment	Temp./Time - US	Temp./Time - SI
Annealing Minimum	800	427
Annealing Maximum	1100	594
Annealing Time		
Hot Works Minimum	1150	622
Hot Works Maximum	1350	733

**Mechanical Properties (measured at room temperature, 68 F (20 C))**

Temper	Section Size	Cold Work	Temp	Tensile Strength	Yield Strength (0.5% ext. under load)	Yield Strength (0.2% offset)	Yield Strength (0.05% offset)	Rockwell Hardness	Vickers Hard.	Brinell Hard.	Shear Strength	Fatigue Strength*	Izod Impact Strength
	in. mm.	%	F C	ksi MPa	ksi MPa	ksi MPa	ksi MPa	% B CF30T500			ksi MPa	ksi MPa	ft-lb J
Shapes													
M30	1	0	TYP 68	60	20	-	-	3065	- - -	- - -	35	-	0.0
	25.4		20	414	138	-	-	3065	- - -	- - -	241	-	0.0

*Fatigue Strength: 100×10^6 cycles,
unless indicated as [N] $\times 10^6$.

Physical Properties

	US Customary	Metric
Melting Point - Liquidus	1630 F	888 C
Melting Point - Solidus	1610 F	877 C
Density	0.306 lb/in ³ at 68 F	8.47 gm/cm ³ @ 20 C
Specific Gravity	8.470	8.47
Electrical Resistivity	37 ohms-cmil/ft @ 68 F	6.15 microhm-cm @ 20 C
Electrical Conductivity	28 %IACS @ 68 F	0.164 MegaSiemens/cm @ 20 C
Thermal Conductivity	71 Btu · ft/(hr · ft ² · °F) at 68 F	122.9 W/m · °K at 20 C
Coefficient of Thermal Expansion	$11.60 \cdot 10^{-6}$ per °F (68-572 F)	$20.9 \cdot 10^{-6}$ per °C (20-300 C)
Specific Heat Capacity	0.090 Btu/lb/°F at 68 F	377.1 J/kg · °K at 293 K
Modulus of Elasticity in Tension	14000 ksi	96500 MPa
Modulus of Rigidity	5300 ksi	36540 MPa

Tempers Most Commonly Used

Other	
ROD	H01
SHAPES	H00, H01, M30

Typical Uses**Architecture**

Handrails, Thresholds, Terrazzo Strip, Shower Doors, Privacy Sun Grills, Trim, Store Fronts, Architectural Forgings, Extrusions, Architectural Mouldings, Window Mullions, Bathroom Partition Brackets, Door Frames, Elevator Trim

Builders Hardware

Lock Bodies, Drawer Pulls, Slide Bolts, Drawer Handles, Lock Cams, Hinges, Butts

Consumer

Straight Edges, Picture Frames, Hot Combs (to Straighten Hair), Fireplace Screens, Lamps, Handles, Squeegee Retainers, Funeral Urns

Industrial

Valve Seats, Valves, Gauges, Press Brake Ram Clamps, Forgings, Valve Stems, Valve Trim, Wheeled Racks

Ordnance

Gun Sights

Casting Characteristics

No casting characteristics available for this alloy.