

- High tensile lead free brass -

BL3

Material designation		Chemical composition*			
CuZn + classe 1		Elements	% mean	Impurities	% max.
		Cu	59	Pb	0.1
		Fe	1.1		
		Ni	2.3	Other	0.2
		Mn	1.3		
		Al	1.6		
		Zn	balance		

* Reference values in % by weight

Properties and typical applications
BL3 is a special lead free brass suitable for hot stamping and machining of parts requiring high mechanical strength.

Physical properties at 20°C		Heat treatment	
Density (g/cm ³)	8.3	Melting range (°C)	880-910
Young modulus (GPa)	105	Hot working (°C)	670-750
Thermal expansion coefficient (20-300°C) (10 ⁻⁶ /K)	18	Annealing temperature (°C)*	500-600
Thermal conductivity (W/m.K)	57	Stress relieving treatment (°C)**	300-400
Thermal capacity (J/Kg.K)	380	* <i>Annealing treatment of a material leads to reduce its hardness and increase its ductility.</i> ** <i>Stress relieving treatment allows to eliminate the residual stresses present in the material in order to avoid the stress corrosion cracking.</i>	
Electrical conductivity (% I.A.C.S.)	12		

Forming		Joining	
Hot forming	Good	Soldering	
Cold forming	Fair	Soft	Not recommended
Machinability	55% (CuZn39Pb3 = 100%)	Hard	Not recommended
Corrosion resistance High tensile brasses generally exhibit good corrosion resistance to organic materials and neutral or alkaline compounds due to alloying elements.		Welding	
		Gaz welding	Fair
		Inert gas shielded arc welding	Not recommended
		Resistance welding	Not recommended

Mechanical properties according to NFA 51-106					
Diameter [mm]		Rp0,2 [Mpa]	Rm [Mpa]	A(%)	
from	to	min.	min.	min.	
6	12	300	600	7	
12	25	280	570	8	
25	50	260	550	9	
50	80	250	530	10	

Fabrication range	
Available forms:	   
Do not hesitate to contact us for further information regarding the dimensions, tolerances and metallurgical conditions. Our technical teams are by your side to help you succeed in your projects.	
info@m-lego.com	

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