

## - High Tensile Brass -

## BL1

Material designation		Chemical composition*			
<b>CuZn + Classe 1</b>		Elements	% mean	Impurities	% max.
		Cu	59	Si	0,015
NF A 51 - 106		Pb	1,4		
		Fe	0,3		
		Ni	1,4		
		Mn	1,4		
		Al	0,8		
		Zn	balance		
CuZn + Classe 1					

\* Reference values in % by weight

### Properties and typical applications

High tensile brass for machining and hot working. It is used in architecture, mechanical parts (gas valves ...)

Physical properties at 20°C		Heat treatment	
Density (g/cm <sup>3</sup> )	8.3	Melting range (°C)	900-920
Young modulus (GPa)	100	Hot working (°C)	650-750
Thermal expansion coefficient (20-300°C) (10 <sup>-6</sup> /K)	20	Annealing temperature (°C)*	450-550
Thermal conductivity (W/m.K)	88	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>	
Electrical conductivity (% I.A.C.S.)	18	<i>** Stress relieving treatment allows to eliminate the residual stresses present in the material in order to avoid the stress corrosion cracking.</i>	

Forming		Joining	
Hot forming	Very good	<b>Soldering</b>	
Cold forming	Fair	Soft	Fair
Machinability	80% (CuZn39Pb3 = 100%)	Hard	Fair
Corrosion resistance		<b>Welding</b>	
Special brass alloys show in general a good corrosion resistance in neutral, alkaline and organic fluids due to alloying elements.		Gaz welding	Not recommended
		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			
	6	12	260	500	5
	12	25	250	470	10
	25	50	230	440	15
	50	80	220	400	17

### 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](mailto:info@m-lego.com)