ALLOY SPECIFICATION

CuZn34Mn3Al2Fe1 (CC764S) EN 1982

CuZn34Mn3Al2Fe1 Bronze Alloys: High-Strength Materials for Demanding Applications

The CuZn34Mn3Al2Fe1 (CC764S) alloy, as per EN 1982, is a self-lubricating bronze bearing bushing material with specific chemical, mechanical, and technical characteristics. Below is a detailed breakdown of its properties and requirements:

1. - Requirements

Chemical Composition (%)											
	Al	Cu	Fe	Mn	Ni	Zn	P	Pb	Sb	Si	Sn
Min.	1,0	55,0	0,5	1,0	-	-	-	-	-	-	-
Max.	3,0	66,0	2,5	4,0	3,0	Remainder	0,03	0,3	0,05	0,1	0,3

Note: Copper content includes nickel.

Mechanical properties (Minimun values)				
Casting process and designation	Tensile strength R_m (MPa)	0,2% proof strength $R_{p0,2}$ (MPa)	Elongation 5D A (%)	HBW (10-1000)
Continuous(GC)	620	260	14	150
Centrifugal (GZ)	620	260	14	150

2. - International Standards for CuZn34Mn3Al2Fe1 Bronze

Standard		Alloy	Status
Europe	BS 1400 DIN 1709 NFA 53703 UNE 37103-2	HTB1 CuZn34Al2 CuZn23Al4 C-2620 (CuZn26Al4Fe3Mn3)	Withdrawn
USA	ASTM B505 ASTM B271	C86200 (SAE 430A)	Active
Australia	AS 1565	C86500	Active
Japan	JIS H5121 JIS H5120	CAC302C CAC302	Active
ISO	1338	CuZn26Al4Fe3Mn3	Withdrawn

3. - Optional Heat Treatments

• **Stress Relieve**: Available upon customer request.

4. - Technical Characteristics of CuZn34Mn3Al2Fe1 Bronze

• **Machining**: Difficult to machine due to its hardness and wear resistance.
• **Wear Resistance**: Good wear resistance, making it suitable for high-load applications.
• **Corrosion Resistance**:
  Resistant to spring and seawater.
  Resistant to atmospheric corrosion up to 300°C.
• **Welding**: Poor welding properties.

5. - Applications of CuZn34Mn3Al2Fe1 Bronze

Recommended for:
• High loads.
• Low speeds.
• Well-lubricated environments.
• Hard contact surfaces.

6. - Conclusion

The CuZn34Mn3Al2Fe1 (CC764S) alloy is a high-performance bronze material designed for demanding applications, particularly in environments requiring wear resistance, corrosion resistance, and strength under high loads. Its self-lubricating properties make it ideal for bearing bushings, though it requires careful machining and is not suitable for welding.