



Technical Data Sheet

AMPCO[®] 22

AMPCO[®] 22 is a highly desirable aluminum bronze alloy known for its exceptional properties. It provides a high level of hardness, outstanding compressive strength, impressive wear resistance, and excellent sliding properties. Its unique composition makes it ideal for demanding applications where tight tolerances must be maintained, particularly in stainless steel forming and drawing operations.

Key Features:

- ▶ Food certified by ISEGA
- ▶ High compressive strength
- ▶ Wear-resistant
- ▶ High hardness
- ▶ Suitable for high compressive loads
- ▶ Easy to polish for a mirror finish
- ▶ No nickel contamination & no galling against stainless steel
- ▶ Good frictional properties & sliding characteristics



Nominal Composition:

Copper (Cu)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Others
Balance	14.1%	4.7%	2.0%	max. 0.5%

Applications:

- ▶ Stainless steel forming & drawing tools
- ▶ Tube mandrels
- ▶ Tube forming rolls
- ▶ Tube end forming & calibration tools
- ▶ Work rolls & forming rolls
- ▶ Bending tools
- ▶ Applications in manufacturing, automotive & aerospace industry



AMPCO[®] 22 finds versatile applications in a variety of industries, with an emphasis on stainless steel forming and drawing. Its exceptional hardness, excellent compressive strength and wear resistance make it an invaluable choice for processes where precision and durability are paramount. Whether it's forming intricate stainless-steel components or maintaining tight tolerances over long production runs, it is the alloy of choice.



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Mechanical Properties (Nominal values)	Sand Casted	Continuous Casted	Centrifugally Casted	Extruded	Forged
Tensile Strength R_m (MPa)	586	586	586	724	620
Yield Strength $R_{p0.5}$ (MPa)	489	489	489	427	531
Elongation A_5 (%)	0.5	0.5	0.5	0.5	0.5
Brinell Hardness (10/3000)	331	331	331	332	338
Compressive Strength R_{mc} (MPa)	1379	1448	1448	1351	1441
Compressive Yield Strength $R_{pc0.1}$ (MPa)	620	654	655	510	559
Shear Strength R_{cm} (MPa)	414	483	483	-	455
Modulus of Elasticity E (GPa)	103	103	103	103	103
Charpy a_k (J)	2.7	-	2.7	2.7	-
Izod a_k (J)	2.7	-	2.7	2.7	-

Physical Properties:

Density ρ (g/cm ³)	Coefficient of Expansion α (10 ⁻⁶ /K)	Thermal Conductivity λ (W/m·K)	Electrical Conductivity (% I.A.C.S.)	Specific Heat c_p (J/g·K)
7.06	16.2	42	10	0.42

Machining Parameters:

Operation	Cutting Speed v_c (m/min)	Feed f (mm/rev)	Depth a (mm)	Tool Specification
Milling – Roughing	90 - 120	0.1 - 0.2	up to 2.5	K10 - K20
Milling – Finishing	75 - 110	0.05 - 0.1	0.1 - 0.5	K10 - K20
Turning – Roughing	120 - 180	0.1 - 0.2	up to 1.5	K10 - K20
Turning – Finishing	150 - 200	0.05 - 0.1	0.1 - 0.2	K10 - K20

Scan the QR Code to view our machining recommendations:



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