Technical Data Sheet

AMPCO® 25

AMPCO® 25 is an aluminum bronze alloy which displays outstanding mechanical properties. The extreme hardness, linked with an excellent compressive strength and very good friction properties, makes it ideal as a forming and drawing die material.

Key Features:

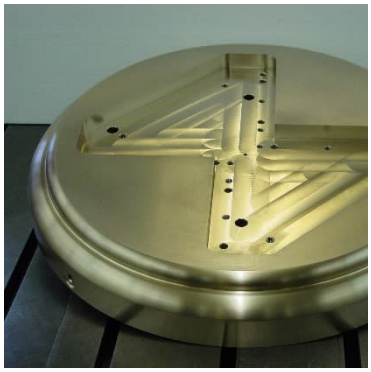
- High hardness
- Wear-resistant
- High compressive strength
- Suitable for high compressive loads
- Good frictional properties & sliding characteristics
- Corrosion resistant
- Easy to polish for a mirror finish

Nominal Composition:

Copper (Cu)	Aluminum (Al)	Iron (Fe)	Others
Proprietary			

Applications:

- Deep drawing rings
- Tube forming, welding & sizing rolls
- Bending tools & dies
- Work rolls & forming rolls
- Tube end forming tools
- Stainless steel & metal forming processes
- Wear applications with high compressive loads



AMPCO® 25 finds its versatility in a wide range of applications due to its exceptional properties. It is commonly used as forming rollers and bending dies in various industrial environments. In addition, its inherent frictional properties make it an excellent choice for wear applications where high compressive loads are prevalent. Its widespread success extends to areas such as manufacturing, metalworking, and industries that require robust and durable materials for forming and wear resistance.

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Mechanical Properties (Nominal values)	Sand Casted	Continuous Casted	Centrifugally Casted	Extruded	Forged
Compressive Strength R_{mc} (MPa)	1517	1551	1551	1579	1579
Compressive Yield Strength $R_{pc0.1}$ (MPa)	689	689	689	706	706
Elongation A_5 (%)	0.2	0.2	0.2	0.2	0.2
Brinell Hardness (10/3000)	364	364	375	375	375
Shear Strength R_{cm} (MPa)	-	-	-	-	451
Modulus of Elasticity E (GPa)	110	110	110	110	110

Physical Properties:

Density ρ (g/cm³)	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)
6.93	16.2	33	8	0.42

Machining Parameters:

Operation	Cutting Speed v_c (m/min)	Feed f (mm/rev)	Depth a (mm)	Tool Specification
Milling – Roughing	90 - 110	0.1 - 0.15	up to 1.5	K10 - K20
Milling – Finishing	70 - 90	0.05 - 0.08	0.1 - 0.5	K10 - K20
Turning – Roughing	90 - 150	0.1 - 0.15	up to 1	K10 - K20
Turning – Finishing	120 - 175	0.05 - 0.08	0.05 - 0.15	K10 - K20

Scan the QR Code to view our machining recommendations:

Lubrication:

Lubricants with graphite, lithium, molybdenum or lead-containing compounds can be used. For deep drawing applications it is particularly recommended to use high pressure and heat-resistance oils containing solid lubricant components such as boron nitride. However, greases and oils containing sulfur (sulfide), copper, aluminum, nickel, or other metal additives are not suitable for lubrication.

Contact us