InstaVoxel

D2 Tool Steel

Technical Datasheet

Key Features

- High Compression Strength
- Low Distortion
- High Abrasion & Wear Resistance Heat Treatable
- Mild Corrosion Resistance

Common Applications

- Knifes
- Punches & dies Thread rollers
- Coining
- Heavy duty press tools

Material Description

D2 tool steel is a high-carbon, high-chromium cold-work tool steel known for its excellent wear resistance, toughness, and dimensional stability at elevated temperatures. It contains approximately 1.5% carbon and 12% chromium, along with small amounts of other alloying elements such as vanadium and molybdenum. D2 tool steel is commonly used in applications where high wear resistance and good retention of hardness are required, such as cutting tools, dies, and molds. It offers good machinability in the annealed condition but can be difficult to heat treat due to its high hardenability. However, once properly heat treated, D2 tool steel provides excellent wear resistance and edge retention, making it suitable for demanding industrial applications.

Chemical Composition (%)

	C	Cr	Co	Fe	Mn	Mo	P	Si	S	V	
Min.	1.4	11		80.8		0.70					
Max.	1.6	13	1.0	86.9	0.60	1.2	0.030	0.06	0.030	1.1	

Mechanical Properties

Ultimate Tensile Strength	110,000 PSI
Tensile Yield Strength	68,000 PSI
Hardness	Rockwell C 55 – 62
Elongation at Break	16%

Physical Properties

Density	0.278 lb/in³ (7.70 g/cm³)
Thermal Conductivity	31.1W/m.K
Melting Point	30,000 KSI (206.8 GPa)
Modulus of Elasticity	2,540-2,650°F (1,393-1,454 °C)

Technical Assistance

Our knowledgeable staff, supported by our in-house team of expert metallurgists and engineers, is ready to assist you with any technical inquiries.

InstaVoxel™ - On-Demand Manufacturing Expert

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InstaVoxel's quality control system is ISO-9001 certified, and all our partners hold relevant certifications.

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