



S-7 Mold Quality Super 7

| | | ASTM | | | | A-681 | |
|----------|----------|-----------------------------------|----------|-----------|----------|-----------|-----------|
| | | Chemical Composition: (Typical %) | | | | | |
| <u>C</u> | <u>P</u> | <u>Si</u> | <u>V</u> | <u>Mn</u> | <u>S</u> | <u>Cr</u> | <u>Mo</u> |
| 0.55 | .010max | 0.35 | 0.25 | 0.70 | 0.005max | 3.25 | 1.40 |

Characteristics

S-7 MQ Super 7 is a shock resistant alloy tool steel which provides a unique combination of machinability, exceptional toughness, ease of heat treatment and minimum distortion. Special melting and refining practices are utilized to produce a uniform product with high cleanliness and minimum segregation. The material is tested to rigorous tool steel standards to ensure uniformity of structure and freedom from defects. Meets ASTM A-681.

Applications

S-7 MQ Super 7 is suitable for use in applications requiring high impact strength such as shears, punches, blanking dies and chisels. The grade is also widely used for high-hardness plastic molds and zinc die-casting dies.

Annealing

Heat slowly and uniformly to 1500/1550 ° F, and hold two hours. Cool slowly (50 ° F per hour max.) to 1100 ° F, and air cool to room temperature. Hardness 210BHN maximum.

Tempering

Double temper between 400 and 800° F for two hours each temper. Cool in air to room temperature between the two tempers.

For more information contact your sales representative.

Heat Treating

S-7 MQ Super 7 is subject to decarburization during heat treatment, so a protective atmosphere furnace should be used. After preheating 1200/1250 ° F, soak material for one half hour per inch of thickness. When material reaches this temperature, heat to 1725 ° F, then soak material for one half hour per inch of thickness when material is up to this temperature. Air cool or oil quench to hand warm (approximately 150 ° F), and temper immediately.

Note: Sections over two inches thick should be interrupt oil or oil quenched to attain full hardness.

EDM

Electro-Discharge Machining (EDM) is widely used in the production of plastic molds and other tooling. This method does however, produce a re-cast, re-hardened layer on the die surface.

It is recommended that **S-7 MQ Super 7** be stress relieved after Electro-discharge machining to temper the re-hardened layer produced by the EDM process.

Material stocked by Sturdell in DCF (Decarb-Free) Plate (+.020/.030).

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