

DATA SHEET



Finkl Steel

DRX™

AISI S7

SHOCK RESISTING TOOL STEEL

TYPICAL APPLICATIONS

- Riveting Dies
- Powder Metal Dies
- Notching Dies
- Drills & Drill Plates
- Plastic Mold Dies
- Cold Forming Dies

GENERAL

Delivery Condition:

Annealed, EFVD, ESR or VAR

DRX™ is a high quality air-hardening tool steel with high impact and shock resistance. It also has good wear resistance at moderately high temperature.

DRX™ is suitable for many hot work and cold work applications like hot heading, hot forging, hot punching, hot piercing, hot trimming dies, heavy duty hot and cold shear blades, forming tools and bending tools.

DRX™ has an excellent combination of high strength and toughness added to size stability when air hardened.

Typical Chemical Analysis - % weight

| C | Mn | Si | Cr | Mo | V |
|------|------|------|------|------|------|
| 0.50 | 0.70 | 0.30 | 3.25 | 1.40 | 0.25 |

DRX™ is forged using a special densifying process which assures optimum consolidation of centers.

DRX™ is forged on our largest presses equipped with wide dies assuring maximum deformation during forging process.

DRX™ is characterized by :

- Improved wear resistance
- High temperature strength
- High impact resistance
- Dimensional stability

DRX™ is 100 % ultrasonic tested to very stringent acceptance levels. It is defect free.

®Finkl Steel Trademark

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HEAT TREATMENT

ANNEALING

Temperature: 1500-1550°F (816-843°C)
Rate of cooling: 25°F (14°C) max per hour
Typical annealed hardness: 187-223 BHN

HARDENING

Rate of heating: slow
Preheat Temperature: 1200-1300°F (649-704°C)
Hardening Temperature: 1700-1750°F (927-954°C)
Time at temperature: 30-45 minutes
Quenching: Air (thickness up to 2.5" or 64.5 mm) or oil (thickness larger than 2.5" or 64.5 mm)

TEMPERING

Tempering Temperature: 400-1150°F (204-621°C)
(Do not temper below 400°F)
Approx tempered hardness: 45-57 HRC

The best combination of hardness and toughness is obtained by tempering at 400°F (204°C) for cold work applications. Tempering at 900-1000°F (482-538°C) is usually best for hot work applications.

STRESS RELIEVING

Temperature: 50-100°F (30-55°C) below final tempering temperature and slow cool to 875°F (470°C), then air cool.

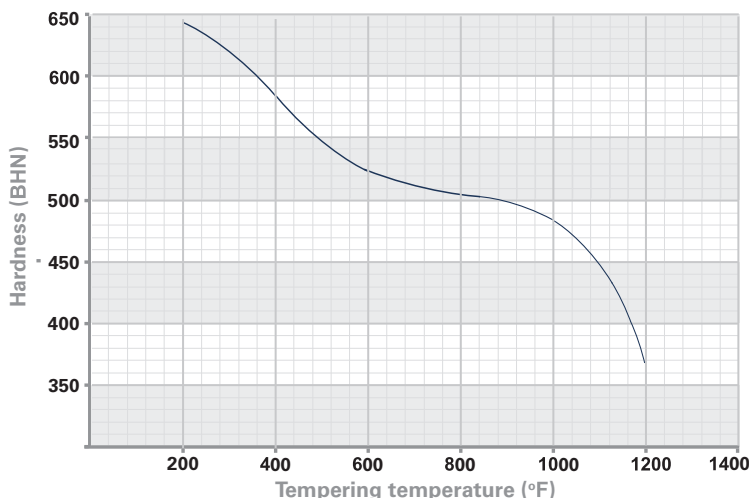
Note: Provided technical data and information in this data sheet are typical values. Normal variations in chemistry, size and conditions of heat treatment may cause deviations from these values. We suggest that information be verified at time of enquiry or order. For additional data or metallurgical assistance, please contact us.

SIZE DRX™

(Finished / approx.)

| | | |
|---------------|---------------------|-------------|
| Max weight | 16 330 kg | 36 000 lbs |
| Max section | 0.90 m ² | 1 400 sq in |
| Max width | 1 270 mm | 50" |
| Max thickness | 760 mm | 30" |

Tempering curve of DRX™



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