

FS373

7Cr7Mo2V2Si

◆ 主要特性 Main characteristics

- 高强度高韧性 High strength and toughness
- 优良的冷热加工性能 Excellent cold and hot machinability
- 较高的耐磨性 High wear resistance
- 热处理变形小 Small deformation after heat treatment

◆ 主要应用 Main application

通用性强，适宜制造承受高负荷的冷挤压模具、冷镦模具、冷冲模具等。
General-purpose mould steel, suitable for manufacturing cold extrusion moulds working under high load, cold upsetting mould and cold stamping mould.

◆ 化学成分 Chemical composition (wt%)

C	Si	Mn	Cr	Mo	V
0.75	1.00	2.00	7.00	2.00	2.00

◆ 冶炼方法 Melting method

电炉/非真空感应炉+LF+VD或满足用户需要。

Electric furnace/ induction furnace +LF+VD or other methods that can meet customer requirements.

◆ 生产规格 Dimensions

轧制扁钢 Rolled flat steel : 10~90mm × 60~305mm

锻制扁钢 Forged flat steel : 100~400mm × 200~800mm

圆钢 Round steel : Φ10mm ~ Φ400mm

◆ 纯净度 Purity

精炼钢非金属夹杂物A、B、C、D均≤2.0级；电渣钢非金属夹杂物A、B、C、D均≤1.0级。

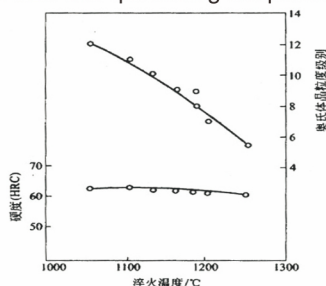
Non-metallic inclusions A, B, C and D of refined steel are all ≤2.0; Non-metallic inclusions A, B, C and D of electroslag remelted steel are all ≤1.0.

◆ 物理参数 Physical parameters

温度/℃ Temperature	20-100	20-200	20-300	20-400	20-500	20-625	20-700
线(膨)胀系数/℃ ⁻¹ Coefficient of Linear expansion	8.2×10 ⁻⁶	10.2×10 ⁻⁶	11.3×10 ⁻⁶	11.8×10 ⁻⁶	12.4×10 ⁻⁶	12.7×10 ⁻⁶	12.9×10 ⁻⁶

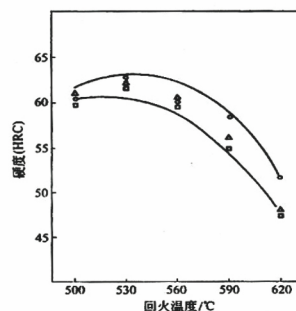
◆ 硬度和奥氏体晶粒度与淬火温度关系

Relationship between hardness/austenite grain size and quenching temperature



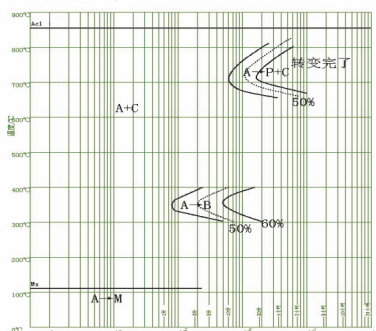
◆ 回火硬度与温度关系

Relationship between hardness and tempering temperature



○第一次回火; △第二次回火; □第三次回火。每次回火 2h

◆ 奥氏体等温转变曲线 TTT curve



◆ 热处理工艺 Heat treatment process

项目 Process	加热温度, °C Heating temperature	冷却方式 Cooling method	硬度 Hardness
退火 Annealing	840 ~ 860	≤30 °C/h 冷却至 500°C 出炉 Cooling to 500°C at a cooling rate ≤30 °C/h, then unloading	≤255HB
淬火 Quenching	1100 ~ 1150	油冷或空冷 Oil or air cooling	60 ~ 63HRC
回火 Tempering	530 ~ 540	空冷 Air cooling	59 ~ 63HRC