Cryodur 2357

Steel properties
High toughness and wear resistance, high compression strength combined with dimensional stability and good polishability.

Physical properties
Coefficient of thermal expansion
\(10^{-6} \text{ m/}(\text{m} \cdot \text{K})\)
- 20 to 200: 12.2
- 20 to 400: 12.5

Thermal conductivity
\(W/(\text{m} \cdot \text{K})\)
- 20: 28.0
- 200: 30.9
- 400: 31.0

Applications
Cold work tool steel for punching tools, moulds, scrap shears, piercing dies, coining dies, deburring tools, plastic moulds and pallets.

Heat treatment
- Soft annealing: 610 – 650°C, cooling in furnace, hardness approx. 220 HB
- Stress-relief annealing: 820 – 860°C, cooling in furnace, hardness approx. 650 HB
- Hardening: 920 – 970°C, quenching in air or oil, hardness after quenching HRC 55 – 60
- Tempering: 100 – 700°C, tempering in air, oil or salt bath, hardness after tempering in HRC 40 – 62

Steel properties
C 0.50, Si 0.30, Mn 0.70, Cr 3.35, Mo 1.60, V 0.25

Cryodur 2360

Steel properties
Cryodur 2360 is a 7% chromium steel that derives its high wear resistance from a balanced combination of the alloying elements. The medium V concentration of 0.5% generates a sufficiently high hardenability combined with high toughness, even at comparatively low operating temperatures below RT.

Applications
This grade is especially suitable for use with chipper knives, blade holders, veneer slicing blades, blade inserts, billet shear blades and reinforcements. All require a combination of high hardness and toughness as do large cold extrusion tools of complex geometry.

Heat treatment
- Soft annealing: 830 – 860°C, cooling in furnace
- Stress-relief annealing: approx. 650°C, cooling in furnace
- Hardening: 1030 – 1070°C, quenching in air or oil or salt bath, hardness after quenching HRC 55 – 60
- Tempering: 100 – 300°C, tempering in air or oil or salt bath, hardness after tempering in HRC 60 – 50

Physical properties
Coefficient of thermal expansion
\(10^{-6} \text{ m/}(\text{m} \cdot \text{K})\)
- 20 to 200: 12.2
- 20 to 400: 12.5

Thermal conductivity
\(W/(\text{m} \cdot \text{K})\)
- 20: 28.0
- 200: 30.9
- 400: 31.0

Applications
Cold work tool steel for punching tools, moulds, scrap shears, piercing dies, coining dies, deburring tools, plastic moulds and pallets.

Heat treatment
- Soft annealing: 610 – 650°C, cooling in furnace, hardness approx. 220 HB
- Stress-relief annealing: 820 – 860°C, cooling in furnace, hardness approx. 650 HB
- Hardening: 920 – 970°C, quenching in air or oil, hardness after quenching HRC 55 – 60
- Tempering: 100 – 700°C, tempering in air, oil or salt bath, hardness after tempering in HRC 40 – 62

Steel properties
C 0.50, Si 0.30, Mn 0.70, Cr 3.35, Mo 1.35, V 0.25

Reference numbers in brackets are not standardized in EN ISO 4957.