

全球钢号百科!

Global Steel Grade Encyclopedia



涵盖的行业或国家与地区类别























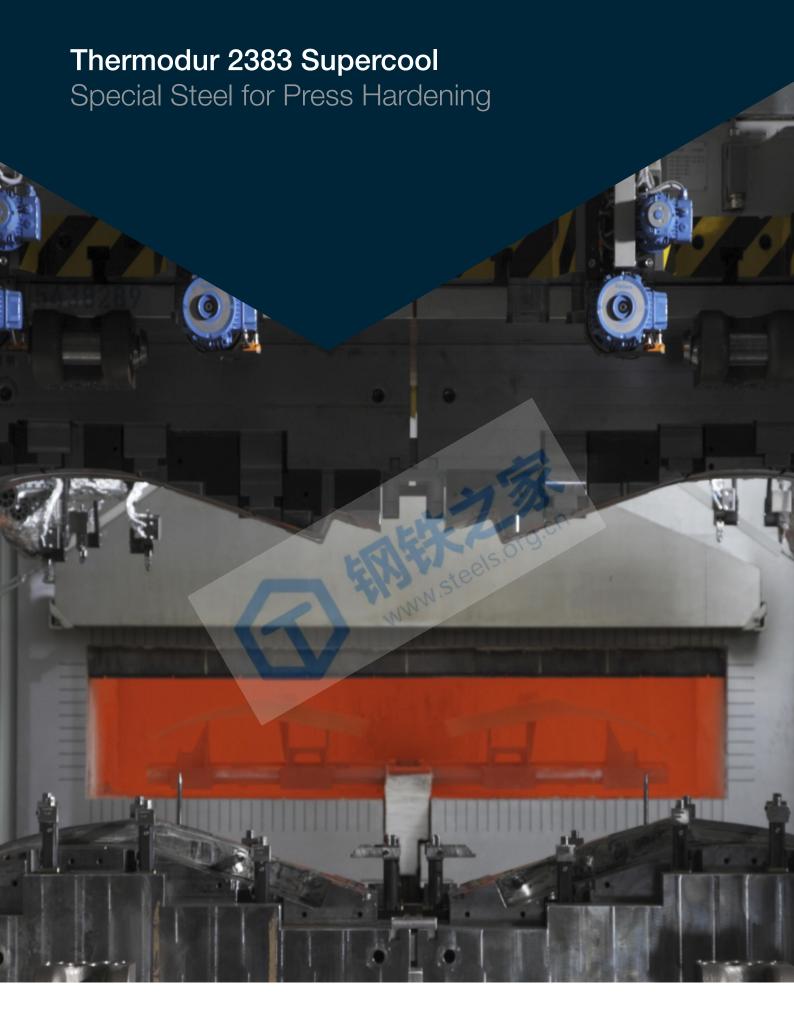












Technical Data Sheet

Thermodur 2383 Supercool

| Chemical composition (standard values in %) | С | Mn | Ni | Мо | V | |
|---|------|------|------|------|------|--|
| | 0,45 | 0,90 | 0,90 | 1,50 | 1,50 | |

Applications

Press hardening or hot stamping is an innovative hot forming process for producing extremely high-strength vehicle bodywork components. The sheet metal component is hot-formed and heat treated in a single combined process step. Sheets heated to austenitizing temperature are placed into a cooled press tool and quenched during forming.

The thermal conductivity of the tool steel used for forming and hardening the sheets is of crucial importance to the clock rate, and therefore cost-effectiveness, when press hardening. Deutsche Edelstahlwerke developed the hot-work tool steel **Thermodur 2383 Supercool** specifically for this application.

Properties

- » Outstanding thermal conductivity
- » Good wear resistance
- » Good through-hardenabilty
- » Best long-time tempering resistance
- » Good high-temperature strength

Physical properties at 45 HRC

| Thermal conductivity W/(m • K) at | | | | | | | | |
|---|------|-------|------|-------|------|-------|------|--|
| 100°C | 44 | 200°C | 43 | 300°C | 41 | 400°C | 39 | |
| Coefficient of thermal expansion 10 ⁻⁶ m/(m • K) at 20°C - | | | | | | | | |
| 100°C | 12,0 | 200°C | 12,3 | 300°C | 12,7 | 400°C | 13,1 | |

| Heat treatment | Soft annealing °C | Cooling | | Hardness HB | | | |
|----------------|-------------------|----------------------------|-----|-------------|---------------------------------|-----|-----|
| | 860 | Furnace | | | max. 220 | | |
| | Hardening °C | Quenching | | ı | Hardness after quenching in HRC | | |
| | 1080-1120 | Oil or hot bath 500-550 °C | | 52 | | | |
| | Tempering °C | 300 | 400 | 500 | 550 | 600 | 650 |
| | HRC | - | 48 | 48 | 52 | 51 | 48 |

Comparison of thermal conductivity and wear resistance

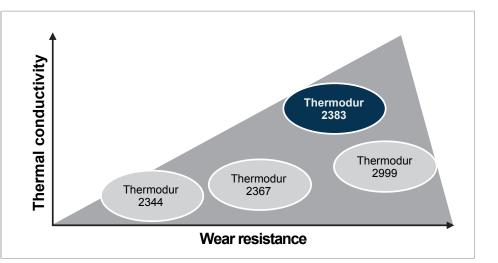


Photo BMW, Dingolfing