

Steel grade

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| Material No. / Werkstoff-Nr. | PREMIUM 1.2085 / 1.2099 |
| Description | X33CrS16 / ~X5CrS12 |
| BS | 1.2085 / 1.2099 (~RoyAlloy) |
| AISI/SAE | 420FM |
| Search for alternatives in the ABRAMS STEEL GUIDE® | www.steel-guide.co.uk/alternatives/1.2085 |

Specifications



Precision flat steel with machining allowance [PFS/BA]
L: 500 mm
L: 1,000 mm



€co-Präz® [€co]
L: 500 mm



Precision round steel with machining allowance [PRS/BA]
peeled / rough-turned
L: 500 mm
L: 1,000 mm

Chemical composition BS 1.2085 (reference value %)

| C | Si | Mn | P | S | Cr | Ni |
|-------------|---------|---------|----------|------------|-------------|---------|
| 0.28 – 0.38 | 0 – 1.0 | 0 – 1.4 | 0 – 0.03 | 0.05 – 0.1 | 15.0 – 17.0 | 0 – 1.0 |

Physical properties

| | |
|--|--------------------------------|
| Hardness (delivery condition) | max. 330 HB, tempered |
| Tensile strength R_m (as received condition) | approx. 1125 N/mm ² |
| Working hardness | max. 48 HRC* |

Technical properties

Pre-hardened, corrosion-resistant plastic mould steel. Magnetisable with good machinability. Resistant to aggressive plastics and humid conditions. Because of the added sulphur it is easier to machine than steel grade BS 1.2316. Further heat treatment is not intended.

*BS 1.2085 will be delivered in tempered condition (approx. 33 HRC). Therefore it can be easily substituted with BS 1.2099.

Applications

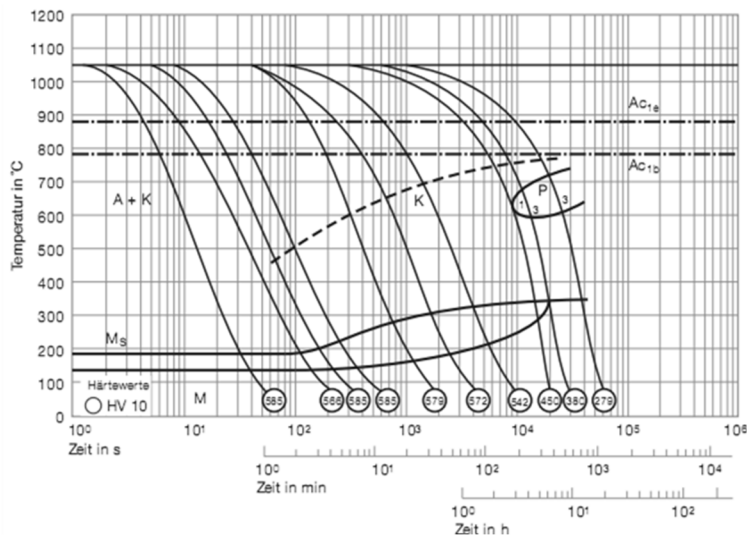
Mechanical engineering, apparatus engineering, plastic processing, injection tools, base plates, assembling parts, moulding frames, plastic moulds, extrusion tools, valves, steam valves, water valves, fittings parts, pump construction, pump rods, compressor construction, compressor parts, surgical instruments.

Heat treatment

| Soft annealing | Temperature | | Cooling | | Hardness | | | |
|----------------|---------------|--------|--------------|--------|--------------------------|--------|--------|--------|
| | 850 - 880°C | | Furnace | | max. 330 HB | | | |
| Hardening | Temperature | | Quenching in | | Hardness after quenching | | | |
| | 1000 - 1050°C | | Oil | | 48 HRC | | | |
| Tempering | 100°C | 200°C | 300°C | 400°C | 450°C | 500°C | 550°C | 600°C |
| | 48 HRC | 48 HRC | 47 HRC | 46 HRC | 47 HRC | 47 HRC | 36 HRC | 30 HRC |



Continuous ZTU-diagram



Tempering diagram

