

Material specification sheet

Saarstahl - 34CrMo4 - 34CrMoS4

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|---------------|--------------------|------------------------------|
| Material No.: | Former brand name: | International steel grades: |
| 1.7220 | Mo 35 | BS: 708A37 |
| 1.7226 | | AFNOR: 34CrMo4, 35CD4 |
| | | SAE: 4135, 4137 |

Material group: Steel for quenching and tempering according to DIN EN 10083

| Chemical composition: (Typical analysis in %) | Steel | C | Si | Mn | Cr | Mo | S | other |
|--|----------|------|------|------|------|------|----------------|-------|
| | 34CrMo4 | 0,34 | 0,25 | 0,70 | 1,10 | 0,25 | <0,035 | (Pb) |
| | 34CrMoS4 | 0,34 | 0,25 | 0,70 | 1,10 | 0,25 | 0,020 0,035 | (Pb) |

Application: Alloyed heat treatable steel with a typical tensile strength of 800 - 1100 N/mm². For automotive and aircraft components with high toughness as crankshafts, axles, axle journals, tyres.

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| Hot forming and heat treatment: | Forging or hot rolling: | 1100 - 850°C |
| | Normalising: | 850 - 880°C/air |
| | Soft annealing: | 680 - 720°C/furnace |
| | Hardening: | 830 - 870°C/oil, water |
| | Tempering: | 540 - 680°C |

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| Mechanical Properties: | Treated for cold shearability +S: | max. 255 HB |
| | Soft annealed +A: | max. 223 HB |

Quenched and tempered, +QT:

| | < 16 | >16 – 40 | >40 – 100 | >100 – 160 | >160 – 250 |
|--|-------------|------------|-----------|------------|------------|
| Diameter d [mm] | < 16 | >16 – 40 | >40 – 100 | >100 – 160 | >160 – 250 |
| Thickness t [mm] | < 8 | 8<t<20 | 20<t<60 | 60<t<100 | 100<t<160 |
| 0,2% proof stress R _{p0,2} [N/mm ²] | min. 800 | min. 650 | min. 550 | min. 500 | min. 450 |
| Tensile strength R _m [N/mm ²] | 1000 - 1200 | 900 - 1100 | 800 - 950 | 750 - 900 | 700 - 850 |
| Fracture elongation A ₅ [%] | min. 11 | min. 12 | min. 14 | min. 15 | min. 15 |
| Reduction of area Z [%] | min. 45 | min. 50 | min. 55 | min. 55 | min. 60 |
| Notch impact energy ISO-V [J] | min. 35 | min. 40 | min. 45 | min. 45 | min. 45 |