

Material-information-sheet

Material-number 1.7225 / 1.7227

Material 42 Cr 4 / 42 Cr Mo S4

Steel-group: Noble steel for construction, alloyed structural steel,
Cr-Mo-steels with < 0,35 % Mo, Cr-Mo-B-steel

Usage: Heat treatable steel:
Parts of a high toughness used for vehicle- and aircraft constructions, for example stub axle, axles, connecting rods, crankshafts, pinions, cogwheels, tire

Cold work hardening steel

High-quality standard components in mechanical engineering, apparatus, engineering, engine and vehicle constructions.

You can produce parts in different work steps different steps (hot-press, cold extrusion, pressing, expanding, producing with different surface- and annealing treatments)

Be equipped with

- high density
- grain flow you need in terms of stress
- high surface quality and
- high accuracy grade

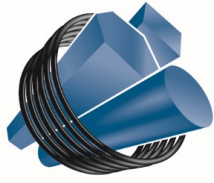
Hardness increases due to cold extrusion fracture strength and yield strength will get higher, the performance characteristics of the finished parts can be improved. The smooth surface, in combination with the high residual stresses of the strain hardened surface zone leads to an increasing vibration and fatigue strength.

In addition, this surface has due to their adherent phosphate layer very favourable running characteristics and good wear resistance. The material use depends primarily on the form of the component, the necessary cold deformation and the required mechanical quality of the finished part. Cold formed workpieces can also be heat-treated, tempered or case-hardened, depending on the steel quality.

Chemical-composition:

1.7225	C	Si	Mn	P	S	Cr	Mo
Minimum	0,38	0,00	0,60	0,00	0,00	0,90	0,15
Maximum	0,45	0,40	0,90	0,025	0,035	1,20	0,30

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Minimum	0,38	0,	0,60	0,00	0,02	0,90	0,15
Maximum	0,45	0,40	0,90	0,025	0,04	1,20	0,30



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Heat-treatment:

Hot-forming	Soft-annealing (+A)	Normalizing	Hardening in oil or water	Tempering
850 - 1100 °C	680 - 720 °C	840 – 880 °C	820 - 860 °C	540 - 680 °C

Mechanical-characteristics:

Hardness after AC-tempered	R _m 680 - 720 MPa
Core hardness	≈ 50 HRC
Surface hardness	≈ 53 HRC

Dimension	+AC+C+PL	+A+C+PL
Diameter [mm]	≤ 10	12-40
Tensile Strength R _m [MPa]	≈ 850	800 – 900
Percentage reduction of area Z [%]	> 60	> 58

Stock:

Bars:

- Bar length 3.050 + 50 mm
- Tolerance-data: EN 10278/h9
- Technical delivery conditions: EN 10277, surface quality class 2

Execution	Cross-section-design in mm
Tolerance	h 9
+AC+C+PL	10
+AC+C	12 - 32