1.4108 (X30CrMoN15-1)

Material Designation

1.4108 S42027

Standards

ISO 7153-1 ASTM F899 SEW 400 ASTM A756 -17

Application Area

edge retention.

pressure loads.

Typical Applications

X Medical technology

X Knife industry

X Tabletting tools

X Mould making

X Roller components

X Marine technology

X Ball screws

Corrosively stressed workpieces requiring high

quality. Components with high wear resistance, especially for use under high and alternating

Applications with high demands on surface

(needles, dental drills, instruments)

X Motor and drive technology Automotive

Chemical Composition Mass-% acc. to ASTM F899

	С	Si	Mn	Р	S	Cr	Ni	Мо	N^1	
min.	0,28	0,30	0,30	-	-	14,5	-	0,95	0,35	
max.	0,34	0,80	0,60	0,020	0,005	16,0	0,3	1,10	0,44	

¹ Nitrogen content > 0,44 % upon request.

Customer specific restrictions upon request.

Properties

1.4108 is a nitrogen-alloyed, heat-treatable martensitic Cr steel with high corrosion resistance and good toughness. The nitrogen content is set during electro-slag remelting (PESR), which produces a uniform, homogeneous microstructure of very high purity with finely distributed carbonitrides. These microstructural properties form the basis for the excellent polishability and high wear resistance of 1.4108.

Delivery Condition

🗱 annealed (+A), max. 255 HBW

Supply form

Bright bars, annealed

- peeled h9, grinding to h6 optional

- Diameter Ø 5-30 mm

Length 3 000 - 6 000 mm

Mechanical Properties

Condition	Diameter	Yield strength	Tensile strength	Elongation
	[mm]	[N/mm²]	[N/mm²]	[%]
+A	≤ 160	-	≤ 730	-

Heat Treatment Guideline Values

	Temperature [°C]	Cooling medium
Annealing (+A)	750 - 850	Furnace, Air
Quenching and tempering	950 - 1030 (Hardening)	Oil, air, cooling to ambient temperature
(+QT)	-80 to -196 (Deep-freezing)	Elimination of retained austenite
	Tempering (Options)	
	500 - 600 (temper 2x)	Air, for good toughness
	475 (temper 2x)	Air, for elevated application
		temperatures and high hardness
	180 - 200 (temper 2x)	Air, for good corrosion resistance

BGH Excellence in Specialty Steel

Quality

- ISO 9001
- ISO 14001
- ISO 50001
- Approvals acc. to standards like ABS, BV, DNV ...
- Customer specific approval certificates

Innovation

- Fully automated ultrasonic testing up to dia. 1000 mm
- CO₂-reduction by innovative heat treatment solutions

Flexibility

- Product range from
- fine wire to forging
- Directly from stock close at hand

Individuality

- Dimensions
- Tolerances
- Surface qualities
- Delivery conditions

Your personal contact:

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Heat treatment continued



Hardening temperature 1030°C, double-temper 60min / air, deep-freezing -196 °C

Comparison with other grades

Chemical composition Masse-%, target values										
	С	Cr	Мо	V	Ν	Si	Mn	Ni	PREN	Hardness [HRC]
1.4108	0,30	15	0,95	-	0,4	-	1	0,5	26	< 61
1.4112	0,90	18	1,10	0,09	-	1	1	-	21	< 60
1.4125	1,05	17	0,60	-	-	1	1	-	19	< 60
1.2083	0,45	13	-	-	-	< 1	< 1	-	13	< 56

Comparison of microstructures of 1.4108 and 1.4112 (Transversal-/longitudinal direction, sampling position D/2)

1.4112 ESR – annealed







Transversal Lc max. size of carbides < 22 μm (90% quantile)

max. size of carbides and nitrides < 10 μm



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