

1.4108 (X30CrMoN15-1)

Material Designation

1.4108
S42027

Standards

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

Chemical Composition Mass-% acc. to ASTM F899

| | C | Si | Mn | P | S | Cr | Ni | Mo | 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 [mm] | Yield strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] |
|-----------|---------------|-------------------------------------|---------------------------------------|----------------|
| +A | ≤ 160 | - | ≤ 730 | - |

Heat Treatment Guideline Values

| | Temperature [°C] | Cooling medium |
|-------------------------------|---|---|
| Annealing (+A) | 750 - 850 | Furnace, Air |
| Quenching and tempering (+QT) | 950 - 1030 (Hardening) -80 to -196 (Deep-freezing) | Oil, air, cooling to ambient temperature 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 |

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:

BGH Edelstahlwerke GmbH

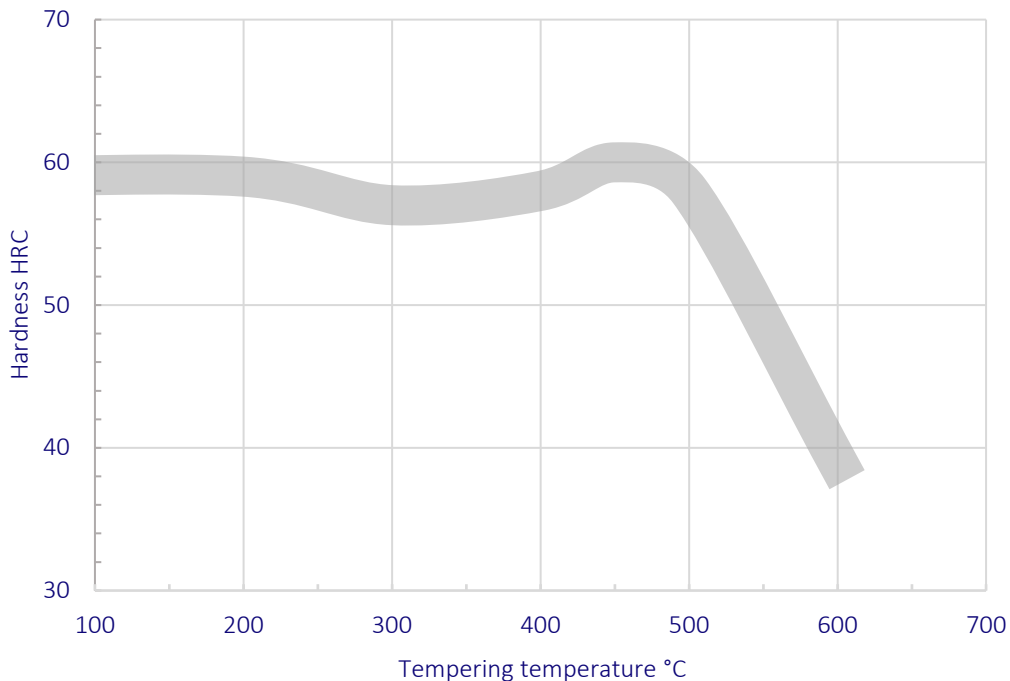
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Excellence in Specialty Steel

Heat treatment continued



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

Comparison with other grades

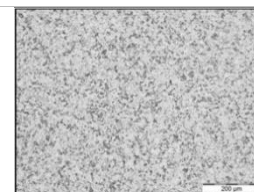
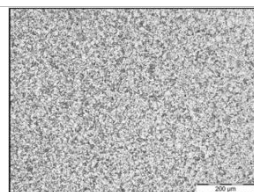
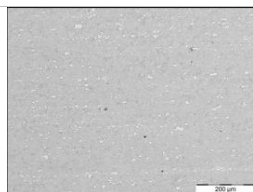
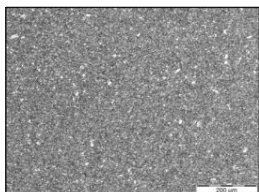
Chemical composition Masse-%, target values

| | C | Cr | Mo | V | N | 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

1.4108 PESR – annealed



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

Longitudinal

Transversal
max. size of carbides and nitrides < 10 µm

Longitudinal

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- ISO 14001
- ISO 50001
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