

FERRITIC AND MARTENSITIC STEELS, INCL. PRECIPITATION HARDENING STEELS

Application Segments

Aerospace

Available Product Variants

Long Products*

Semi-Finished Products / Billet

*) Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Product Description

BÖHLER N352 is a martensitic chromium steel with nickel addition. Heat treatable grade, capable of taking a mirror finish. Higher corrosion resistance compared to 13% chromium steel. Resistant to the effects of seawater, weak acids and alkaline solutions, as well as to acids having a strong, oxidizing effect such as nitric acid. Surface finish for optimum corrosion resistance: fine ground or polished. For components subject to high mechanical and corrosive stress, e.g. screws and shafts, at operating temperatures up to approx. 752° F.

Process Melting

Airmelted

Applications

> Structural parts (Aerosp)

> Aerospace

> Other Aerospace Comps.

Technical data

| Material designation | | Standards | |
|----------------------|--------------|------------------|--------|
| 431 | Market grade | 1.4044 | WL |
| | AISI | AFNOR Z15CN16-02 | Others |
| 1.4044 | SEL | | |
| X15CrNi17-3 | EN | | |
| S43100 | UNS | | |
| SUS431 | JIS | | |

Chemical composition (wt. %)

| C | Si | Mn | P | S | Cr | Ni |
|--------------|----------|----------|------------|------------|--------------|--------------|
| 0.12 to 0.20 | max. 1.0 | max. 1.0 | max. 0.035 | max. 0.025 | 15.0 to 18.0 | 2.00 to 3.00 |

Related to WL 1.4044

Delivery condition

Annealed

| | |
|---------------|--------------------------------------------------------|
| Hardness (HB) | max. 248 1.4044.2, bars from 6 up to 160 mm diameter |
|---------------|--------------------------------------------------------|

Hardened and Tempered

| | |
|------------------------------|--------------------------------------------------------------------------|
| Tensile Strength (MPa ksi) | 800 to 950 117 to 138 1.4044.5, bars from 6 mm up to 160 mm diameter |
| Yield Strength (MPa ksi) | min. 600 88 |

Hardened and Tempered

| | |
|------------------------------|----------------------------------------------------------------------------|
| Tensile Strength (MPa ksi) | 900 to 1,100 131 to 160 1.4044.6, bars from 6 mm up to 100 mm diameter |
| Yield Strength (MPa ksi) | min. 700 102 |

Round Bars and Wire Rod (if any)

| Diameter | | | | | | MOQ ex mill | | | | Length | | | | | | Tolerance |
|----------|---|--------|-------|---|-------|-------------|-------|--|--|--------|---|------|------|---|-------|-----------|
| mm | | | inch | | | kg | lbs | | | m | | | ft | | | |
| ROLLED | | | | | | | | | | | | | | | | |
| 5.01 | - | 12.49 | 0.197 | - | 0.492 | 700 | 1,543 | | | 3.00 | - | 4.00 | 9.84 | - | 13.12 | IT h/k 11 |
| 12.50 | - | 54.00 | 0.492 | - | 2.126 | 800 | 1,764 | | | 3.00 | - | 4.00 | 9.84 | - | 13.12 | IT h/k 11 |
| 55.01 | - | 69.00 | 2.166 | - | 2.717 | 1,100 | 2,425 | | | 3.00 | - | 4.00 | 9.84 | - | 13.12 | IT h/k 11 |
| 69.01 | - | 115.00 | 2.717 | - | 4.528 | 950 | 2,094 | | | 3.00 | - | 4.00 | 9.84 | - | 13.12 | IT h/k 11 |

Flat Bars

| Width | | | | | Thickness | | | | | MOQ ex mill | | | | Length | | | | Tolerance | | |
|--------|---|--------|-------|---|-----------|-------|------|--------|-------|-------------|-------|-----|-------|--------|---|------|------|-----------|-------|---------|
| mm | | inch | | | mm | | inch | | | kg | | lbs | | m | | ft | | | | |
| ROLLED | | | | | | | | | | | | | | | | | | | | |
| 15.00 | - | 121.00 | 0.591 | - | 4.764 | 10.00 | - | 85.00 | 0.394 | - | 3.346 | 880 | 1,940 | 3.00 | - | 4.00 | 9.84 | - | 13.12 | LN 1017 |
| 120.00 | - | 150.00 | 4.724 | - | 5.906 | 25.00 | - | 102.00 | 0.984 | - | 4.016 | 880 | 1,940 | 3.00 | - | 4.00 | 9.84 | - | 13.12 | LN 1017 |
| 150.00 | - | 175.00 | 5.906 | - | 6.890 | 18.00 | - | 102.00 | 0.709 | - | 4.016 | 880 | 1,940 | 3.00 | - | 4.00 | 9.84 | - | 13.12 | LN 1017 |

Long Products: For additional specifications, technical requirements, and other dimensions, please contact our regional voestalpine BÖHLER sales companies.

Semi-Finished Products: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Semi Finished Products of voestalpine BÖHLER Edelstahl GmbH & Co KG.

The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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voestalpine

ONE STEP AHEAD.