

ENGINEERING STEELS - HEAT TREATABLE AND NITRIDING STEELS

Application Segments

Aerospace

Automotive

Available Product Variants

Long Products*

Semi-Finished Products / Billet

Open Die Forgings

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

Product Description

BÖHLER V361 is a 3% Cr-Mo-V nitriding low-alloy steel of premium aircraft-quality, low-alloy steel offering a tensile strength of up to over 1350MPa in the form of bars, forgings, and forging stock.

Due to the optimized production route via VIM-melting and VAR-remelting, the steel offers high impact strength and fatigue limit. It may be nitrided in the heat treated condition to obtain a wear resistant surface.

It is used typically for nitrided parts such as bearings, operating under heavy loads and high speeds at moderate temperatures, and requiring highest surface hardness, high core toughness, and less distortion than parts made from case hardening steel, but usage is not limited to such applications.

Process Melting

VIM + VAR

Applications

- > Bearings
- > Turbine and Engine Parts (Aerospace)
- > Aerospace
- > Other Aerospace Components
- > Automotive
- > Structural parts (Aerospace)
- > Motorsport industry

Technical data

| Material designation | | Standards | |
|----------------------|--------------|-----------|-----|
| E32CDV13 | Market grade | 6481 | AMS |
| 1.7765 | SEL | | |
| 32CrMoV12-10 | EN | | |

Chemical composition (wt. %)

| C | Si | Mn | P | S | Cr | Mo | Ni | V | Cu |
|--------------|--------------|--------------|------------|------------|--------------|--------------|-----------|--------------|-----------|
| 0.29 to 0.36 | 0.10 to 0.40 | 0.40 to 0.70 | max. 0.015 | max. 0.005 | 2.80 to 3.30 | 0.70 to 1.20 | max. 0.30 | 0.15 to 0.35 | max. 0.10 |

Related to AMS 6481

Delivery condition

Annealed

| | |
|------------------------|--|
| Tensile Strength (MPa) | max. 862 max 12.7 mm diameter, cold finished |
|------------------------|--|

Annealed

| | |
|---------------|---|
| Hardness (HB) | max. 255 above 12.7 mm diameter, hot finished |
|---------------|---|

Annealed

| | |
|---------------|--|
| Hardness (HB) | max. 269 above 12.7 mm diameter, cold finished |
|---------------|--|

Round Bars and Wire Rod (if any)

| Diameter mm | | | MOQ ex mill kg | Length m | | | Tolerance |
|----------------|---|--------|-------------------|-------------|---|------|-----------|
| ROLLED | | | | | | | |
| 12.50 | - | 55.00 | 1,250 | 3.00 | - | 4.00 | IT h/k 11 |
| 55.01 | - | 120.00 | 2,500 | 3.00 | - | 4.00 | IT h/k 11 |
| 120.01 | - | 140.00 | 2,500 | 3.00 | - | 5.00 | IT h/k 14 |
| FORGED | | | | | | | |
| 140.01 | - | 203.20 | 2,200 | 3.00 | - | 5.00 | IT h/k 14 |

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. 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.