



Round ground steel bars

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STEEL RANGE

Structural steels EN 10025-2-3-5
Free cutting non-alloyed steels EN 10087
Case hardening steels EN 10084
Steels for quenching and tempering EN 10083-2-3
Hot-rolled steels for quenched and tempered springs EN 10089
Cold-finished steels EN 10277-2-3-4-5
Steels for cold heading and cold extrusion EN 10263
Micro-alloyed steels EN 10267
Steels for pressure purposes EN 10273 - ASTM A105 - ASTM A 350

Notes: possibility of supplying steels in accordance with Customer specifications, to be agreed upon at the order stage.

PRODUCTION RANGE

STANDARD MANUFACTURING SIZES

Round ground bars: $\varnothing 10 \div 150$ mm with 0.01 mm progression
From $\varnothing 10 \div 30$ mm from drawn round semi-finished product; from $\varnothing > 30$ mm from peeled round semi-finished product.
For quenched and tempered products, semi-finished product from peeling only.

BAR LENGTH

$\varnothing \leq 120$ mm - 2.8 \div 7.5 m (including length+ tolerance)
 $\varnothing > 120$ mm - 2.8 \div 7.2 m (including length+ tolerance)

Commercial length with range ≤ 1 m
Extra Standard Fixed Length with range -0/+200 mm or ± 100 mm
Extra Standard Fixed Length with range ≥ 50 mm
Extra Standard Fixed Length with range ≥ 20 mm.

Note: crop end, if agreed upon at the order, ≥ 3 m for $\leq 10\%$ of the ordered weight. It will be included in the supply if hot-rolled and separately wrapped if cold-rolled.

DIMENSIONAL TOLERANCES - UNI EN 10277; UNI EN ISO 286

Standard	IT7 - IT8 - Circularity deviation $\leq 50\%$ of the \varnothing tolerance field.
Extra Standard	IT6 - Circularity deviation $\leq 50\%$ of the \varnothing tolerance field.

Notes: full-length tolerances will have to be agreed upon at the order acquisition stage.

STRAIGHTNESS

Standard	drawn: for $\varnothing 10 \div 30$ mm, camber $\leq 0.5\%$ L peeled: for $\varnothing > 20$ mm, camber $\leq 0.2\%$ L
Extra Standard	-



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ROUGHNESS

Standard	Ra ≤ 1.2 μ m for IT8 tolerances Ra ≤ 0.8 μ m for IT7 tolerances Ra ≤ 0.6 μ m for IT6 tolerances
Extra Standard	Ra ≤ 0.8 μ m for IT8 tolerances (lapped) Ra ≤ 0.6 μ m for IT7 tolerances (lapped) Ra ≤ 0.4 μ m for IT6 tolerances (lapped)

END APPEARANCE

Standard	Shear or sawing machine cutting at both ends.
Extra Standard	Saw machine cutting and chamfering on 1 or 2 ends; max. 10 mm with 30° - 45° chamfer

SUPERFICIAL DEFECTS

Standard	From peeled semi-finished product Class 4 EN 10277 with NDT 100% From drawn semi-finished product Class 3 EN 10277 with NDT 100%
Extra Standard	For peeled $\varnothing 20 \div 130$ mm Class 4 EN 10277 For drawn $\varnothing \leq 30$ mm Class 3 EN 10277

*For $\varnothing < 20$ mm o $\varnothing > 130,5$ mm class 3 on a statistical basis

Notes: semi-finished products can be previously subjected to US tests in accordance with the EN 10308.

DECARBONISATION

Standard	Exempt if made from Peeled semi-finished product. Max. 1% of the \varnothing , with a minimum equal to 0.2 mm if made from Drawn semi-finished product.
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NON-METALLIC INCLUSIONS

Standard	Macro-purity at grade ≤ 2 as per S.E.P. 1584 standard. Micro-purity at grade ≤ 2.5 as per ASTM E 45 standard or with K method at the values of the EN 10083/06-1 standard, App E, Macro-segregation ≤ C3-R2-S2 as per ASTM E 381 standard
Extra Standard	Through the vacuum degassing (VD) process it is possible to obtain macro-inclusions falling into grade 0 of the S.E.P. 1584 standard.

BANDING

Standard:	Maximum guaranteed banding as per Grade IV of the UNI 8449 standard.
Extra Standard	Through the vacuum degassing (VD) process, maximum guaranteed banding as per Grade III of the UNI 8449 standard.

AUSTENITE GRAIN REFINING FOR SPECIAL STEELS

Standard	5 ÷ 8 austenite grain as per ASTM E112 or ISO 643 guaranteed. This grain size range is not guaranteed for general purpose structural steels, with the exception of the J2 types envisaged in the EN 10025-2 table.
Extra Standard	With extra standard process, 6 or finer austenite grain can be guaranteed.



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MECHANICAL CHARACTERISTICS AND HARDENABILITY

Standard	In accordance with the standardisation table mentioned in the order. On request, all steels can be produced with hardenability restricted to 2/3 of the H standard band, i.e. in the HL (lower 2/3) and HH (upper 2/3) types. Reference for Jominy test: EN ISO 642 standard.
Extra Standard	In accordance with Customer specification, to be evaluated at the order acceptance stage.

MAGNETIC RETENTIVITY

Standard	≤ 20 a/cm
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PACKAGING

Standard	<ul style="list-style-type: none">- Anti-corrosion oiling- 4 straps for 2.8÷5 m bundles. N° 4/6 straps for 5.5÷7.2 m bundles.- 1 Tag per bundle- Polyester lifting belts- Guard under the containment straps.
Extra Standard	<p>Peculiar conditions besides the previous ones, to be evaluated at the order acceptance stage.</p> <ul style="list-style-type: none">- 2 tags, 1 at the front and 1 at the rear of the bundle- bar/bar spacer rings- Bundle packaging with polythene-jute cloth- bar/bar wrapping- End protection (jute or polythene-coated cloth bags)- Lamiflex- Packaging in crates

HEAT TREATMENTS

Our products can be supplied with the following heat treatments:
<ul style="list-style-type: none">- Softening annealing +A- +AC Globular annealing globular level guaranteed ≥ 70%- Stress-free annealing +SR- Annealing for ferrite-pearlite structure +FP- Normalising +N- Quenching and tempering +QT (round bars only)- Shearability annealing +S- Hardening field annealing +TH

BUNDLE WEIGHT

Standard	1,000 ÷ 1,600 kg
Extra standard	500 Kg

OTHER INFORMATION

Manufacturing times	30÷40 days
Product certificate	Compliant with EN 10204
Minimum batch size	5 tons
Weight tolerance with respect with the ordered amount	± 20% up to 5 tons. ± 10% > 5 tons.