



TG Steels

Alloy 400

ROUND & HEXAGONAL BAR



Applications

INDUSTRIAL

Power Plants, Chemical Industry, Mineral Oil
Distillation Plants

Features

- Resistance against chloride-induced stress corrosion
- Excellent strength even at low application temperatures
- Easy processing compared to other high-alloy materials

Standard

ASTM B164

Material

Alloy 400 / UNS N04400 / 2.4360&2.4361

Surface

Bright annealed / annealed

Package

Wooden case

Chemical composition (Nominal) %

Grade	Ni	Cu	Fe	Mn	C	Si	S
Alloy 400	63.0 min	28.0-34.0	2.5 max	2.0 max	0.3 max	0.5 max	0.024 max

Physical properties

Density 8.82 g/cm³ (0.32 lb/in³) at 20°C

Mechanical properties

Heat Treatment	Tensile Strength, min, psi (MPa)	Yield Strength, min. (0.2% offset), min, psi (MPa)	Elongation in 2 in. or 50 mm (or 4 D), min, %
Cold-worked (as worked): Rounds under 1/2	11 000 (760)	85 000 (585)	8
Cold-worked (as worked): hexagons under 1/2	85 000 (585)	55 000 (380)	10
Cold-worked (Stress-relieved): Rounds under 1/2	84 000 (580)	50 000 (345)	10
Cold-worked (Stress-relieved): Rounds 1/2 to 3 1/2	87 000 (600)	60 000 (415)	20
Cold-worked (Stress-relieved): Rounds over 3 1/2 to 4	84000 (580)	55 000 (380)	20
Cold-worked (Stress-relieved): hexagons 2 and under	84 000 (580)	50 000 (345)	20
Cold-worked (Stress-relieved): hexagons over 2 to 3 1/8	80 000 (552)	50 000 (345)	20
Hot-worked (Stress-relieved): Rounds up to 12 hexagons 2 1/8 and under	80 000 (552)	40 000 (276)	30
Hot-worked (Stress-relieved): Rounds over 12 to 14	75 000 (517)	40 000 (276)	30
Hot-worked (Stress-relieved): hexagons over 2 1/8 to 4	75 000 (517)	30 000 (207)	25
Hot-worked (Annealed) or Cold-worked (Annealed): Rod and Bar, all sizes	70 000 (480)	25 000 (170)	35

Heat treatment

Annealed

The soft annealing should be performed at temperatures of 700 to 900°C (1,292 to 1,652°F), preferably at about 825°C (1,517°F).

Stress-Relieved

Stress-relief annealing at about 550 to 650°C (1,022 to 1,202°F) should then occur, in order to prevent stress corrosion cracking.