AISI 410 / 1.4006 (X12Cr13)

Material Designation

1.4006	
S41000	
410	

DIN UNS AISI

Standards

DIN EN 10088-3 DIN EN 10250-4 DIN EN 10272 ASTM A182/A182M (Grade F6a) ASTM A193/A193M (Grade B6) ASTM A276/A276M ASTM A479/A479M ANSI/NACE MR 0103/ISO 17945 ANSI/NACE MR 0175/ISO 15156-3

Chemical Composition Mass-%

	С	Si	Mn	Р	S	Cr	Ni
min.	0,08	-	-	-	-	11,5	-
max.	0,15	1,0	1,0	0,02	0,015	13,5	0,5
Custome	er specific i	restrictio	ns upon r	eauest			

Properties

1.4006 is a martensitic ferromagnetic steel offering good corrosion resistance in nonchloride containing, moderately corrosive environments (PREN \approx 14).

The corrosions resistance can be further improved by surface polishing / high gloss polishing.

Delivery Condition

- quenched and double tempered (QDT)
- quenched and tempered (+QT)
- lpha annealed

Application Area

Operating conditions requiring moderate corrosion resistance and high mechanical properties for application temperatures up to 400 °C.

Typical Applications

- Chemical and petrochemical industry
- Hydraulic engineering, e.g. pumps, valves, fittings
- X Mechanical engineering
- Decorative features and household

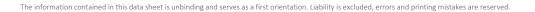
Mechanical Properties Based on ANSI/NACE MR 0175/ISO 15156-3 (condition QDT)

Yield strength	Tensile strength	Elongation	Red. of area	Hardness	Impact toughness ¹
[N/mm²] ([ksi])	[N/mm²] ([ksi])	[%]	[%]	[HRC]	[J] Charpy-V
552 - 655 (80 - 95)	≥ 690 (100)	≥ 20	≥ 45	≤ 22	≥ 27 @ -29 °C (-20 °F)
1 Others to war a water					

¹Other temperature ratings upon request

Mechanical Properties Acc. to ASTM A276/A276M

Condition	Yield strength	Tensile strength	Elongation	Red. of area
	[N/mm²] ([ksi])	[N/mm²] ([ksi])	[%]	[%]
A	≥ 275 (40)	≥ 480 (70)	≥ 20	≥ 45
Т	≥ 550 (80)	≥ 690 (100)	≥ 15	≥ 45
Н	≥ 620 (90)	≥ 830 (120)	≥ 12	≥ 40





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

Am Stahlwerk 1 01705 Freital +49 351 646-0 www.bgh.de



CORROSION RESISTANT STEEL

AISI 410 / 1.4006 (X12Cr13)

Mechanical Properties Acc. to DIN EN 10088-3

Condition	Diameter [mm]	Yield strength [N/mm²]	Tensile strength [N/mm²]	Elongation [%]	Impact toughness [J] Charpy-V
+A	-	-	≤ 730	-	-
+QT650	≤ 160	≥ 450	650 - 850	≥ 15	≥ 25

Delivery with mechanical properties according to ASTM A182, A193 and A479 upon request.

Heat Treatment

QDT (Quenched and double tempered) Guideline values acc. NACE MR 0175/ISO 15156-3	Temperature [°C] ([°F]) \geq 980(1800) - 1010(1850) (Hardening) T ₁ \geq 650 (1200) \geq T ₂ (1 st Tempering) T ₂ \geq 621 (1150) (2 nd Tempering)	Cooling medium Air or faster Air Air
Quenched and tempered (+QT 650) Guideline values acc. to DIN EN 10088-3	950(1740) - 1000(1830) (Hardening) 680 (1255) - 780(1435) (Tempering)	Oil, air
Annealed (+A) Guideline values acc. to DIN EN 10088-3	745(1370) - 825(1520)	Air



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