

This page is mainly introduced the X12Cr13 chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X12Cr13, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Data Table for Grades Stainless Steels X12Cr13

X12Cr13 Standard Number:		
ITEM	Standard Number	Descriptions
1	NF EN 10088-1	Stainless steels - Part 1: List of stainless steels
2	NF EN 10088-2	Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes
3	NF EN 10088-3	Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes
4	NF EN 10088-4	Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes
5	NF EN 10088-5	Stainless steels - Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes
6	NF EN 10250-4	Open die steel forgings for general engineering purposes - Part 4: Stainless steels
7	NF EN 10263-5	Steel rod, bars and steel wire for cold heading and cold extrusion - Part 5: Technical delivery conditions for stainless steels
8	NF EN 10272	Stainless steel bars for pressure purposes
9	NF EN 10297-2 (2005)	Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel

X12Cr13 Chemical composition(mass fraction)(wt.%)		
Chemical	Min.(%)	Max.(%)
C	0.08	0.15
Si		1.00
Mn		1.00
P		0.040
S		0.015
Cr	11.50	13.50
Mo		
Ni		0.75

X12Cr13 Physical Properties		
Tensile strength	115-234	σb/MPa

Yield Strength	23	$\sigma_{0.2} \geq / \text{MPa}$
Elongation	65	$\delta 5 \geq (\%)$
$\psi$	-	$\psi \geq (\%)$
Akv	-	$Akv \geq / \text{J}$
HBS	123-321	-
HRC	30	-

### X12Cr13 Mechanical Properties

Tensile strength	231-231	$\sigma_b / \text{MPa}$
Yield Strength	154	$\sigma_{0.2} \geq / \text{MPa}$
Elongation	56	$\delta 5 \geq (\%)$
$\psi$	-	$\psi \geq (\%)$
Akv	-	$Akv \geq / \text{J}$
HBS	235-268	-
HRC	30	-

### X12Cr13 Heat Treatment Regime

Annealing	Quenching	Tempering	Normalizing	Q & T
√	√	√	√	√

### X12Cr13 Range of products

Product type	Products	Dimension	Processes	Deliver Status
Plates / Sheets	Plates / Sheets	0.08-200mm(T)*W*L	Forging, hot rolling and cold rolling	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Steel Bar	Round Bar, Flat Bar, Square Bar	$\Phi 8$ -1200mm*L	Forging, hot rolling and cold rolling, Cast	Black, Rough Turning, Shot Blasting,
Coil / Strip	Steel Coil / Steel Strip	0.03-16.0x1200mm	Cold-Rolled & Hot-Rolled	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Pipes / Tubes	Seamless Pipes/Tubes, Welded Pipes/Tubes	OD:6-219mm x WT:0.5-20.0mm	Hot extrusion, Cold Drawn, Welded	Annealed, Solution and Aging, Q+T, ACID-WASHED

## We can produce Stainless Steels the specifications follows:

Note:

- (1) listed in the table apex diameter (d), to steel thickness (a) multiples said.
- (2) in the ASTM A6 standard specified scope can meet any additional conditions.

(3) from the standard for 50 mm (2 in).

Mechanical properties

Mechanische Eigenschaften

Caracteristiques mecaniques

ReH Minimum yield strength / Mindestwert der oberen Streckgrenze / Limite d'elasticite minimale

Rm Tensile strength / Zugfestigkeit / Resistance a la traction

A Minimum elongation / Mindestwert der Bruchdehnung / Allongement minimal

J Notch impact test / Kerbschlagbiegeversuch / Essai de flexion par choc

Round bar:

Diameter : 1mm-2000mm

Square bar:

Size: 50mm \* 50mm-600mm \*600mm

Plate steel/flat bar:

Size: Thickness: 0.1mm-800mm Width: 10mm to 1500mm

Tube/pipe:

Size: OD: 6-219mm WT: 1-35 mm.

Cold-rolled sheet: Thickness: 2-5mm Width:1000mm Length: 2000mm

Hot-rolled sheet: Thickness:6-80mm Width: 210-610mm

Length: We can supply any length based on the customer's requirement.

Forging/hot rolling/ extrusion of steel.

Forging: Shafts with flanks/pipes/tubes/slugs/donuts/cubes/other shapes

Finished goods condition: hot forging/hot rolling + annealing/normalizing + tempering/quenching + tempering/any conditions based on the customer's requirement

Surface conditions: scaled (hot working finish)/ground/rough machining/fine machining/based on the customer's requirement

Furnaces for metallurgical processing: electrode arc + LF/VD/VOD/ESR/Vacuum consumable electrode.

Ultrasonic inspection: 100% ultrasonic inspection for any imperfections or based on the customer's requirement.

UTS according to SEP 1921 C/c,D/d,E/e;A388 or GB/T 6402

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