**This page is mainly introduced the X5CrNiMo17-12-2 chemical information,mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X5CrNiMo17-12-2,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 X5CrNiMo17-12-2

| X5CrNiMo17-12-2 Standard Number: | | |
|---|---|---|
| ITEM | Standard Number | Descriptions |
| 1 | DIN EN 10088-1 | Stainless steels - Part 1: List of stainless steels |
| 2 | DIN EN 10088-2 | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes |
| 3 | DIN 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 | DIN EN 10088-4 | Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes |
| 5 | DIN EN 10028-7 | Flat products made of steels for pressure purposes - Part 7: Stainless steels |
| 6 | DIN 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 |
| 7 | DIN EN 10216-5 (2004) | Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 5: Stainless steel tubes |
| 8 | DIN EN 10217-7 | Welded steel tubes for pressure purposes - Technical delivery conditions - Part 7: Stainless steel tubes |
| 9 | DIN EN 10250-4 | Open die steel forgings for general engineering purposes - Part 4: Stainless steels |
| 10 | DIN EN 10253-3 | Butt-welding pipe fittings - Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements |
| 11 | DIN EN 10253-4 | Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements |
| 12 | DIN EN 10272 | Stainless steel bars for pressure purposes |
| 13 | DIN EN 10296-2 (2005) | Welded circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel |
| 14 | DIN EN 10297-2 (2005) | Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel |
| 15 | DIN EN 10222-5 | Steel forgings for pressure purposes - Part 5: Martensitic, austenitic and austenitic-ferritic stainless steels |
| 16 | DIN EN 10263-5 | Steel rod, bars and steel wire for cold heading and cold extrusion - Part 5: Technical delivery conditions for stainless steels |
| 17 | DIN EN 10264-4 (2002) | Steel wire and wire products - Steel wire for ropes - Part 4: Stainless steel wire |
| 18 | DIN EN 10269 | Steels and nickel alloys for fasteners with specified elevated and/or low temperature properties |
| 19 | DIN EN 10270-3 | Steel wire for mechanical springs - Part 3: Stainless spring steel wire |

| | | |
|---|---|---|
| 20 | DIN 1654-5 (1989) | Cold heading and cold extruding steels; technical delivery conditions for stainless steels |
| 21 | DIN 17224 (1982) | Stainless steel wire and strip for springs; technical delivery conditions |
| 22 | DIN 17440 (2001) | Stainless steels - Technical delivery conditions for drawn wire |
| 23 | DIN 17440 (1975) | Stainless steels - Technical delivery conditions for drawn wire |
| 24 | DIN 17441 (1997) | Stainless steels - Technical delivery conditions for cold rolled strips and slit coils strip and sheets cut from such strips for pressure purposes |
| 25 | DIN 17455 (1985) | Welded circular tubes of stainless steels for general requirements; technical delivery conditions |
| 26 | DIN 17456 (1985) | Seamless circular tubes of stainless steels for general requirements; technical delivery conditions |
| 27 | DIN 17457 (1985) | Welded circular tubes of austenitic stainless steels for special requirements; technical delivery conditions |
| 28 | DIN 17458 (1985) | Seamless circular tubes of austenitic stainless steels for special requirements; technical delivery conditions |
| 29 | DIN 5512-3 | Materials for rail vehicles - Steels - Part 3: Stainless steel flat products; Selected standard |

## X5CrNiMo17-12-2 Chemical composition(mass fraction)(wt.%)

| Chemical | Min.(%) | Max.(%) |
|---|---|---|
| C | | 0.07 |
| Si | | 1.00 |
| Mn | | 2.00 |
| P | | 0.045 |
| S | | 0.015 |
| Cr | 16.5 | 18.5 |
| Mo | 2.00 | 2.50 |
| Ni | 10.0 | 13.0 |
| N | | 0.11 |

## X5CrNiMo17-12-2 Physical Properties

| | | |
|---|---|---|
| Tensile strength | 115-234 | σb/MPa |
| Yield Strength | 23 | σ 0.2 ≥/MPa |
| Elongation | 65 | δ5≥ (%) |
| ψ | - | ψ≥ (%) |
| Akv | - | Akv≥/J |
| HBS | 123-321 | - |
| HRC | 30 | - |

| X5CrNiMo17-12-2 Mechanical Properties | | |
|---|---|---|
| Tensile strength | 231-231 | σb/MPa |
| Yield Strength | 154 | σ 0.2 ≥/MPa |
| Elongation | 56 | δ5≥(%) |
| ψ | - | ψ≥(%) |
| Akv | - | Akv≥/J |
| HBS | 235-268 | - |
| HRC | 30 | - |

| X5CrNiMo17-12-2 Heat Treatment Regime | | | | |
|---|---|---|---|---|
| **Annealing** | **Quenching** | **Tempering** | **Normalizing** | **Q & T** |
| √ | √ | √ | √ | √ |

| X5CrNiMo17-12-2 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 | Φ8-1200mm*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 inperfections or based on the customer's requirement.
UTS according to SEP 1921 C/c,D/d,E/e;A388 or GB/T 6402
Excellent service for all kinds of industries, with advantages of technologies, equipment and price.
We serve you with our honesty, integrity, and professionality.