

This page is mainly introduced the X2CrNi12 chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X2CrNi12, 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 X2CrNi12

| X2CrNi12 Standard Number: |                       |                                                                                                                                                                                        |
|---------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ITEM                      | Standard Number       | Descriptions                                                                                                                                                                           |
| 1                         | DIN EN 10028-7        | Flat products made of steels for pressure purposes - Part 7: Stainless steels                                                                                                          |
| 2                         | DIN EN 10088-1        | Stainless steels - Part 1: List of stainless steels                                                                                                                                    |
| 3                         | DIN EN 10088-2        | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes                                                  |
| 4                         | 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 |
| 5                         | DIN EN 10088-4        | Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes                                             |
| 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 10272          | Stainless steel bars for pressure purposes                                                                                                                                             |
| 8                         | DIN EN 10296-2 (2005) | Welded circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel                                                  |

| X2CrNi12 Chemical composition(mass fraction)(wt.%) |         |         |
|----------------------------------------------------|---------|---------|
| Chemical                                           | Min.(%) | Max.(%) |
| C                                                  |         | 0.03    |
| Si                                                 |         | 1.00    |
| Mn                                                 |         | 1.50    |
| P                                                  |         | 0.040   |
| S                                                  |         | 0.015   |
| Cr                                                 | 10.5    | 12.5    |
| Ni                                                 | 0.30    | 1.00    |
| N                                                  |         | 0.030   |

| X2CrNi12 Physical Properties |         |                          |
|------------------------------|---------|--------------------------|
| Tensile strength             | 115-234 | $\sigma_b$ /MPa          |
| Yield Strength               | 23      | $\sigma_{0.2} \geq$ /MPa |
|                              |         |                          |

|            |         |                      |
|------------|---------|----------------------|
| Elongation | 65      | $\delta 5 \geq (\%)$ |
| $\psi$     | -       | $\psi \geq (\%)$     |
| Akv        | -       | $Akv \geq J$         |
| HBS        | 123-321 | -                    |
| HRC        | 30      | -                    |

### X2CrNi12 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              | -       | $Akv \geq J$                     |
| HBS              | 235-268 | -                                |
| HRC              | 30      | -                                |

### X2CrNi12 Heat Treatment Regime

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

### X2CrNi12 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'élasticite 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****Excellent service for all kinds of industries, with advantages of technologies, equipment and price.****We serve you with our honesty, integrity, and professionalism.**