**This page is mainly introduced the X12CrNiMoV12-3, 1.4938 chemical information,mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X12CrNiMoV12-3, 1.4938,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 X12CrNiMoV12-3, 1.4938

| X12CrNiMoV12-3, 1.4938 Standard Number: | | |
|---|---|---|
| ITEM | Standard Number | Descriptions |
| 1 | EN 2278 | Aerospace series - Steel X12CrNiMoV12-3 (1.4933) - 900 MPa ≤ Rm ≤ 1 100 MPa - Bars - De ≤ 150 mm |
| 2 | EN 10302 | Creep resisting steels, nickel and cobalt alloys |
| 3 | EN 10088-1 | Stainless steels - Part 1: List of stainless steels |
| 4 | EN 10269 | Steels and nickel alloys for fasteners with specified elevated and/or low temperature properties |

| X12CrNiMoV12-3, 1.4938 Chemical composition(mass fraction)(wt.%) | | |
|---|---|---|
| Chemical | Min.(%) | Max.(%) |
| C | 0.08 | 0.15 |
| Mn | 0.40 | 0.90 |
| Si | | 0.50 |
| P | | 0.025 |
| S | | 0.015 |
| Cr | 11.00 | 12.50 |
| Ni | 2.00 | 3.00 |
| Mo | 1.50 | 2.00 |
| V | 0.25 | 0.40 |
| N | 0.02 | 0.04 |

| X12CrNiMoV12-3, 1.4938 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 | - |

## X12CrNiMoV12-3, 1.4938 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 | - |

## X12CrNiMoV12-3, 1.4938 Heat Treatment Regime

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

## X12CrNiMoV12-3, 1.4938 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.