

This page is mainly introduced the X20Cr13 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X20Cr13, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel X20Cr13

| X20Cr13 Standard Number: |                  |  |
|--------------------------|------------------|--|
| ITEM                     | Standard Number  | Descriptions   |
| 2                        | DIN 17440 (1996) | Stainless steels - Technical delivery conditions for drawn wire  |
| 3                        | DIN 17441 (1985) | Stainless steels - Technical delivery conditions for cold rolled strips and slit coils strip and sheets cut from such strips for pressure purposes                                     |
| 4                        | DIN 17442 (1977) | Rolled, Wrought or Cast Stainless Steel Products for Medical Instruments   |
| 5                        | 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 |
| 6                        | DIN EN 10088-4   | Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes   |
| 7                        | 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                    |
| 9                        | DIN EN 10088-1   | Stainless steels - Part 1: List of stainless steels  |
| 8                        | DIN EN 10088-2   | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes  |
| 9                        | DIN EN 10250-4   | Open die steel forgings for general engineering purposes - Part 4: Stainless steels  |
| 10                       | DIN 17224        | Materials for rail vehicles - Steels - Part 3: Stainless steel flat products; Selected standard  |
| 11                       | DIN EN 10151     | Stainless steel strip for springs - Technical delivery conditions  |

| X20Cr13 Chemical composition(mass fraction)(wt.%) |    |    |   |         |    |    |         |   |    |
|---|----|----|---|---------|----|----|---------|---|----|
| Chemical  |    |    |   | Min.(%) |    |    | Max.(%) |   |    |
| C   |    |    |   |         |    |    | 0.08    |   |    |
| Si  |    |    |   |         |    |    | 1.00    |   |    |
| Mn  |    |    |   |         |    |    | 1.00    |   |    |
| P   |    |    |   |         |    |    | 0.040   |   |    |
| S   |    |    |   |         |    |    | 0.015   |   |    |
| Cr  |    |    |   | 16.0    |    |    | 18.0    |   |    |
| C   | Si | Mn | P | S       | Cr | Ni | Mo      | V | Ta |

|   |   |    |    |    |   |    |    |    |       |
|---|---|----|----|----|---|----|----|----|-------|
|   |   |    |    |    |   |    |    |    |       |
| W | N | Cu | Co | Pb | B | Nb | Al | Ti | Other |
|   |   |    |    |    |   |    |    |    |       |

Stainless steels - Technical delivery conditions for cold rolled strips and slit coils strip and sheets cut from such strips for pressure purposes

### X20Cr13 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      | -                        |

### X20Cr13 Mechanical Properties

|                  |         |                          |
|------------------|---------|--------------------------|
| Tensile strength | 231-231 | $\sigma_b$ /MPa          |
| Yield Strength   | 154     | $\sigma_{0.2} \geq$ /MPa |
| Elongation       | 56      | $\delta_5 \geq$ (%)      |
| $\psi$           | -       | $\psi \geq$ (%)          |
| Akv              | -       | Akv $\geq$ /J            |
| HBS              | 235-268 | -                        |
| HRC              | 30      | -                        |

### X20Cr13 Heat Treatment Regime

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

### X20Cr13 Range of products

| Product type    | Products        | Dimension         | Processes                | Deliver Status         |
|-----------------|-----------------|-------------------|--------------------------|------------------------|
| Plates / Sheets | Plates / Sheets | 0.08-200mm(T)*W*L | Forging, hot rolling and | Annealed, Solution and |

|               |  |                            |   |   |
|---------------|--|----------------------------|---|---|
|               |  |                            | cold rolling                                | 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 Specialsteel the specifications follows:**