

This page is mainly introduced the 1.4438 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of 1.4438, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel 1.4438

| 1.4438 Standard Number: |                 |                                                                                                                                                                                        |
|-------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ITEM                    | Standard Number | Descriptions                                                                                                                                                                           |
| 1                       | NF EN 10028-7   | Flat products made of steels for pressure purposes - Part 7: Stainless steels                                                                                                          |
| 2                       | NF EN 10088-1   | Stainless steels - Part 1: List of stainless steels                                                                                                                                    |
| 3                       | NF EN 10088-2   | Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes                                                  |
| 4                       | 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 |
| 5                       | NF EN 10088-4   | Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes                                             |
| 6                       | 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                    |
| 7                       | NF EN 10217-7   | Welded steel tubes for pressure purposes - Technical delivery conditions - Part 7: Stainless steel tubes                                                                               |
| 8                       | NF EN 10253-3   | Butt-welding pipe fittings - Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements                                     |
| 9                       | NF EN 10253-4   | Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements                                        |

| 1.4438 Chemical composition(mass fraction)(wt.%) |         |         |
|--------------------------------------------------|---------|---------|
| Chemical                                         | Min.(%) | Max.(%) |
| C                                                |         | 0.030   |
| Si                                               |         | 1.00    |
| Mn                                               |         | 2.00    |
| P                                                |         | 0.045   |
| S                                                |         | 0.015   |
| Cr                                               | 17.50   | 19.50   |
| Mo                                               | 3.00    | 4.00    |
| Ni                                               | 13.00   | 16.00   |
| N                                                |         | 0.11    |

|   |    |    |    |    |    |    |    |    |       |
|---|----|----|----|----|----|----|----|----|-------|
| C | Si | Mn | P  | S  | Cr | Ni | Mo | V  | Ta    |
| W | N  | Cu | Co | Pb | B  | Nb | Al | Ti | Other |

## Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements

### 1.4438 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      | -                        |

### 1.4438 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      | -                        |

### 1.4438 Heat Treatment Regime

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

### 1.4438 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:**