

This page is mainly introduced the A 540 Grade B21 Class 4 chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of A 540 Grade B21 Class 4, 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 A 540 Grade B21 Class 4

### A 540 Grade B21 Class 4 Standard Number:

| ITEM | Standard Number     | Descriptions   |
|------|---------------------|--|
| 1    | A 540/A 540M (2011) | Alloy-Steel Bolting Materials for Special Applications |

### A 540 Grade B21 Class 4 Chemical composition(mass fraction)(wt.%)

| Chemical | Min.(%) | Max.(%)   |
|----------|---------|-----------|
| C        |         | 0.05      |
| Si       |         | 0.20      |
| Mn       |         | 0.50      |
| P        |         |           |
| S        |         |           |
| Ni       |         | remaining |
| Cr       | 15.00   | 17.00     |
| Al       | 4.00    | 5.00      |
| Cu       |         |           |
| Ti       |         | 0.50      |
| Fe       | 2.00    | 4.00      |
| N        |         |           |
| Mo       |         | 0.50      |
| B        |         | 0.006     |
| Zr       |         | 0.05      |

### A 540 Grade B21 Class 4 Physical Properties

|                  |         |                          |
|------------------|---------|--------------------------|
| Tensile strength | 115-234 | $\sigma_b$ /MPa          |
| Yield Strength   | 23      | $\sigma_{0.2} \geq$ /MPa |
| Elongation       | 65      | $\delta_5 \geq$ (%)      |
|                  |         |                          |

|     |         |        |
|-----|---------|--------|
| ψ   | -       | ψ≥ (%) |
| Akv | -       | Akv≥/J |
| HBS | 123-321 | -      |
| HRC | 30      | -      |

| A 540 Grade B21 Class 4 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      | -           |

| A 540 Grade B21 Class 4 Heat Treatment Regime |           |           |             |       |
|---|-----------|-----------|-------------|-------|
| Annealing                                     | Quenching | Tempering | Normalizing | Q & T |
| √   | √         | √         | √           | √     |

| A 540 Grade B21 Class 4 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 imperfections or based on the customer's requirement.

UTS according to SEP 1921 C/c,D/d,E/e;A388 or GB/T 6402

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We serve you with our honesty, integrity, and professionalism.