

This page is mainly introduced the Q235 D Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of Q235 D, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Structure Steel Q235 D

### Q235 D Standard Number:

| ITEM | Standard Number | Descriptions |
|------|-----------------|--------------|
|------|-----------------|--------------|

### Q235 D Chemical composition (mass fraction) (wt.%)

| Chemical |       |           | Min.(%) |       |       |       | Max.(%) |    |       |  |
|----------|-------|-----------|---------|-------|-------|-------|---------|----|-------|--|
| C        | Si    | Mn        | P       | S     | Cr    | Ni    | Mo      | V  | Ta    |  |
| ≤0.17    | ≤0.30 | 0.35~0.80 | 0.035   | 0.030 | ≤0.30 | ≤0.30 |         |    |       |  |
| W        | N     | Cu        | Co      | Pb    | B     | Nb    | Al      | Ti | Other |  |
|          |       | ≤0.30     |         |       |       |       |         |    |       |  |

### Mechanical properties

The yield point  $\sigma_s$ /MPa (no less) than in steel different thickness or diameter/mm | ≤ 16:235

The yield point  $\sigma_s$ /MPa (no less) than in steel different thickness or diameter/mm | > 16 ~ 40:225

The yield point  $\sigma_s$ /MPa (no less) than in steel different thickness or diameter/mm | > 40 to 60:215

The yield point  $\sigma_s$ /MPa (no less) than in steel different thickness or diameter/mm | > 60 ~ 100:205

The yield point  $\sigma_s$ /MPa (no less) than in steel different thickness or diameter/mm | > 100 ~ 150:195

The yield point  $\sigma_s$ /MPa (no less) than in steel different thickness or diameter/mm | > 150:185

Tensile strength  $\sigma_b$ /MPa: 375 ~ 450

Elongation  $\delta_5$  / (%) (no less) than in steel different thickness or diameter/mm | than 16:26

Elongation  $\delta_5$  / (%) (no less) than in steel different thickness or diameter/mm | > 16 ~ 40:25

Elongation  $\delta_5$  / (%) (no less) than in steel different thickness or diameter/mm | > 40 to 60:24

Elongation  $\delta_5$  / (%) (no less) than in steel different thickness or diameter/mm | > 60 ~ 100:23

Elongation  $\delta_5$  / (%) (no less) than in steel different thickness or diameter/mm | > 100 ~ 150:22

Elongation  $\delta_5$  / (%) (no less) than in steel different thickness or diameter/mm | > 150:21

Impact test (1) | temperature / °C :-20

Impact test (1) | impact absorption power AKV/J: 27 frequency

## The cold bending property

Sample direction: horizontal

180 ° of cold bending test  $b = 2a$  different thickness or in steel diameter/mm | than 60:  $d = 1.5a$

180 ° of cold bending test  $b = 2a$  different thickness or in steel diameter/mm | > 60 ~ 100:  $d = 2.5a$

180 ° of cold bending test  $b = 2a$  different thickness or in steel diameter/mm | > 100 ~ 200:  $d = 3a$

| Q235 D 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      | -                        |

| Q235 D 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      | -                        |

| Q235 D Heat Treatment Regime |           |           |             |       |
|------------------------------|-----------|-----------|-------------|-------|
| Annealing                    | Quenching | Tempering | Normalizing | Q & T |
| √                            | √         | √         | √           | √     |

| Q235 D 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 Structure Steel the specifications follows:**