

This page is mainly introduced the Q345q E Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of Q345q E, 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 Q345q E

### Q345q E Standard Number:

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

### Q345q E Chemical composition (mass fraction) (wt.%)

| Chemical |       |           | Min.(%) |        |    |    | Max.(%) |    |       |  |
|----------|-------|-----------|---------|--------|----|----|---------|----|-------|--|
| C        | Si    | Mn        | P       | S      | Cr | Ni | Mo      | V  | Ta    |  |
| ≤0.17    | ≤0.50 | 1.20~1.60 | ≤0.020  | ≤0.015 |    |    |         |    |       |  |
| W        | N     | Cu        | Co      | Pb     | B  | Nb | Al      | Ti | Other |  |
|          |       |           |         |        |    |    |         |    |       |  |

### Mechanics performance

Steel thickness/mm: more than 16

The yield point |  $\sigma_s$  frequency/MPa: 235

Tensile strength |  $\sigma_b$  frequency/MPa: 390

Elongation |  $\delta$  frequency / (%) 5:26

Impact absorption power AKV/J | testing temperature / °C : -20

Impact absorption power AKV/J | longitudinal frequency/J | : 27

Impact absorption power AKV/J | time frequency/J | : 27

180 ° of cold bending test | d-apex diameter, a-the following steel thickness when/mm | than 16: d = 1.5 a

180 ° of cold bending test | d-apex diameter, a-the following steel thickness when/mm | > 16: d = 2.5 a

### Q345q E 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      | -                        |

### Q345q E 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      | -                        |

### Q345q E Heat Treatment Regime

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

### Q345q E 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                |

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