

EN 10083 C50 steel plate high carbon steel

C50 steel plate, EN 10083 C50 steel plate, under EN 10083 standard, we can regard C50 steel plate as high carbon steel.

C50 steel plate is one mainly of high carbon steel,EN 10083 C50 steel plate is one of the higher carbon content (0.47-0.55) steels.It is equal to DIN C50,JUS Č.16301 and NF AF70C55.

| | | |
|-------------------------------------|----------------------------|-----------|
| C50 EN 10083-2 Number: 1.0540 | Comparison of steel grades | |
| | JUS | Č.16301 |
| | DIN | C50 |
| | BS | - |
| | GOST | - |
| | AISI | - |
| | UNI | - |
| | NF | (AF70C55) |

Chemical analysis -% by mass * of C50 steel

| Chemical elements | C | Si max | Mn | P max. | S max. | Cr max. | Mo max. | Ni max. | Cr+Mo+Ni max. |
|-----------------------|-----------|--------|-----------|---------|---------|---------|---------|---------|---------------|
| % by mass | 0,47-0,55 | 0,40 | 0,60-0,90 | 0,045 | 0,045 | 0,40 | 0,10 | 0,40 | 0,63 |
| Permissible deviation | ± 0,02 | + 0,03 | ± 0,04 | + 0,005 | + 0,005 | + 0,05 | + 0,03 | + 0,05 | - |

At the option of the manufacturer the elements aluminium, titanium, vanadium and niobium may be added singly or in combination for grain size control purposes.

Elements not quoted in table shall not be added to the steel without the agreement of the purchaser, except for the purpose of finishing the heat.

Mechanical properties in the normalized and normalized and tempered conditions of C50 steel

| |
|-----------------------------------|
| Thickness of ruling section t_R |
|-----------------------------------|

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| Diameter in mm | | $t_R \leq 100\text{mm}$ | $100 < t_R \leq 250\text{mm}$ | $250 < t_R \leq 500\text{mm}$ | $500 < t_R \leq 1000\text{mm}$ |
|-----------------------------------|----------------|-------------------------|-------------------------------|-------------------------------|--------------------------------|
| $R_e \text{ min (N/mm}^2\text{)}$ | | 320 | 290 | - | - |
| $R_m \text{ min (N/mm}^2\text{)}$ | | 610 | 590 | - | - |
| A % min. | l-longitudinal | 14 | 14 | - | - |
| | tr -transverse | - | - | - | - |
| KV min * (J) | l-longitudinal | - | - | - | - |
| | tr -transverse | - | - | - | - |

1N/mm²=1MPa

Heat treatment conditions

| Quenching Temperature, °C | Cooling medium | Tempering Temperature, °C | Normalizing Temperature, °C |
|---------------------------|----------------|---------------------------|-----------------------------|
| 810 to 850 | Oil or water | 550 to 660 | 830 to 870 |

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