

Quality E335(Fe 590 - Fe60 - St 60-2 - C40E - C45E)



According to Standard EN 10025 - 2 : 2004

Number 1.0060

| Comparable Standards | German DIN | France AFNOR | Spain UNE | China GB | U.K. B.S. | Russia GOST | USA AISI - SAE | Japan JIS |
|----------------------|------------|--------------|-----------|----------|-----------|--------------|----------------|-----------|
| | St60-2 | A60 - 2 | A 590 | HRB335 | | St6ps. CT6nc | | SM 570 |

| Chemical Analysis | C% max | Si% max | Mn% max | P% max | S% max | N% max | Cast Analysis Product Analysis |
|-------------------|--------|---------|---------|--------|--------|--------|--------------------------------|
| | | | | 0.055 | 0.055 | 0.014 | |

Hot Work and Heat Treatment Temperatures

Temperature °C

| Hot - Forming | Supply State +U | Soft Annealing +A | Isothermal Annealing +I | Normalising & Tempering | Quenching & Tempering QT | Stress-relieving +SR |
|---------------|-----------------|-------------------|-------------------------------------|-------------------------|--------------------------|--|
| 1100 - 850 | natural | 690 air | 820 furnace cooling to 660 then air | 870 air | 840 water | 50° under the temperature of tempering |
| | | | | 550 - 650 air | 550 - 650 air | |

Mechanical Properties at Room Temperature

Minimum Yield Strength R^{eH}

Mpa

Nominal Thickness mm

| ≤ 16 | > 16 | > 40 | > 63 | > 80 | > 100 | > 150 | > 200 |
|------|------|------|------|-------|-------|-------|-------|
| | ≤ 40 | ≤ 63 | ≤ 80 | ≤ 100 | ≤ 150 | ≤ 200 | ≤ 250 |
| 335 | 325 | 315 | 305 | 295 | 275 | 265 | 255 |

Tensile Strength R

Mpa

Nominal Thickness mm

| < 3 | > 3 | > 100 | > 150 |
|-----|-------|-------|-------|
| | ≤ 100 | ≤ 150 | ≤ 250 |

590 to 770 570 to 710 550 to 710 540 to 710

Minimum percentage elongation after fracture %

L = 80 mm. Normal thickness mm

L = 5.65 √S₀ Nominal thickness mm

| | ≤ 1 | > 1 | > 1.5 | > 2 | > 2.5 | > 3 | > 40 | > 63 | > 100 | > 150 |
|----------|-----|-------|-------|-------|-------|------|------|-------|-------|-------|
| | | ≤ 1.5 | ≤ 2 | ≤ 2.5 | < 3 | ≤ 40 | ≤ 63 | ≤ 100 | ≤ 150 | ≤ 250 |
| l | 8 | 9 | 10 | 11 | 12 | 16 | 15 | 14 | 12 | 11 |
| t | 6 | 7 | 8 | 9 | 10 | 14 | 13 | 12 | 11 | 10 |

