C45 EN 10083-2 (Euronorm)

Standards

EN 10083-2 Quenched and tempered steels. Technical delivery conditions for unalloyed quality steels

Chemical composition

C	0.42 - 0.50	**Si**	< 0.4	**Mn**	0.5 - 0.8	**P**	< 0.045
S	< 0.045	**Cr**	< 0.4	**Mo**	< 0.1	**Ni**	< 0.4
Fe	Rest						

Cr + Mo + Ni < 0.63%
Steels with improved machinability as a result of the addition of higher sulphur contents up to around 0,10% S (including resulphurized steels with controlled inclusion content (e.g. Ca-treatment)) may be supplied upon request. In this case, the upper limit for the manganese content may be increased by 0,15 %.

Properties

By EN 10083-2

+N

Thickness: < 16 mm ;

Yield Strength: > 340 MPa
Tensile Strength: > 620 MPa
Elongation: > 14 %

Thickness: 16 - 100 mm ;

Yield Strength: > 305 MPa
Tensile Strength: > 580 MPa
Elongation: > 16 %

Thickness: > 100 mm ;

Yield Strength: > 275 MPa
Tensile Strength: > 560 MPa
Elongation: > 16 %

+QT

Diameter: < 16 mm ;

Yield Strength: > 490 MPa
Tensile Strength: 700 - 850 MPa
Elongation: > 14 %
Reduction of area: > 35 %

Diameter: 16 - 40 mm ;

Yield Strength: > 430 MPa
Tensile Strength: 650 - 800 MPa
Elongation: > 16 %

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Reduction of area: > 40 %

Diameter: > 40 mm ;

Yield Strength: > 370 MPa
Tensile Strength: 630 - 780 MPa
Elongation: > 17 %
Reduction of area: > 45 %

Flat products

Thickness: < 8 mm ;

Yield Strength: > 490 MPa
Tensile Strength: 700 - 850 MPa
Elongation: > 14 %
Reduction of area: > 35 %

Thickness: 8 - 20 mm ;

Yield Strength: > 430 MPa
Tensile Strength: 650 - 800 MPa
Elongation: > 16 %
Reduction of area: > 40 %

Thickness: > 20 mm ;

Yield Strength: > 370 MPa
Tensile Strength: 630 - 780 MPa
Elongation: > 17 %
Reduction of area: > 45 %

+S

Hardness HBW: < 255

+A

Hardness HBW: < 207