



# MEDIUM CARBON STEEL

**SIQUAL 1191** is a medium carbon steel intended for the manufacture of quenched and tempered or hardened machine parts.

## SPECIFICATIONS

SIQUAL 1191 is designated as C45E according to EN 10027-1 and as W.Nr. 1.1191, and conforms to the following standards:

- EN ISO 683-1:2018 – Heat treatable steels, alloy steels and free-cutting steels – Part 1: Non alloy steels for quenching and tempering
- EN 10132-3:2000 – Cold rolled narrow steel strip for heat treatment – Technical delivery conditions – Part 3: Steels for quenching and tempering

## CHEMICAL COMPOSITION

	C	Mn	Si	P	S	Cr	Ni	Mo	Cr+Mo+Ni
Min. in %	0.42	0.50	0.10	-	-	-	-	-	0.63
Max. in %	0.50	0.80	0.40	0.025	0.035	0.40	0.40	0.10	

## MECHANICAL PROPERTIES

Hardness in as-rolled condition can be given as informative value.

According to EN ISO 683-1:2018

Delivery condition	Thickness [mm]	R <sub>eH</sub> (R <sub>p0.2</sub> ) [MPa]	R <sub>m</sub> [MPa]	A <sub>5</sub> [%]
Normalized (+N)	≤ 16	min. 340	min. 620	min. 14
Normalized (+N)	16–100	min. 305	min. 580	min. 16

Delivery condition	HBW
Soft annealed (+A)	207

According to EN 10132-3:2000 – for thicknesses 0.30–3 mm

Delivery condition	R <sub>eH</sub> (R <sub>p0.2</sub> ) [MPa]	R <sub>m</sub> [MPa]	A <sub>80</sub> [%]	HV
Annealed + Temper rolled (+A)	max. 455	max. 570	min. 18	180

## DIMENSIONS

	Hot-rolled strip	Hot-rolled sheets	Cold-rolled strip	Cold-rolled sheet	Hot-rolled quarto plates
Thickness [mm]	3–6	3–6	0.3–3	0.5–3	8–*
Width [mm]	100–1000	800–1000	30–1000	1000	1000–2500
Length [mm]	-	2000–6000	-	2000–6000	up to 12000
Internal coil diameter [mm]	610	-	508	-	-

\*Max. thickness shall be discussed at the time of inquiry.

## TOLERANCES ON DIMENSIONS

- Hot-rolled quarto plates: EN 10029
- Hot-rolled strips/sheets: EN 10051
- Cold-rolled strips/sheets: EN 10131 or EN 10140

## SURFACE CONDITION

According to EN 10163-2 or by special agreement.

## DELIVERY CONDITION

Hot-rolled strip/sheet		Cold-rolled strip/sheet	Hot-rolled quarto plates		
as-rolled (+ shot-blasted)	annealed (+ shot-blasted)	spheroidization annealed + temper rolled	as-rolled (+ shot-blasted)	annealed (+ shot-blasted)	normalized (+ shot-blasted)

## INSPECTION DOCUMENTS

The type of document shall be agreed upon at the time of enquiry and order. A test certificate according to EN 10204/3.1 is issued mandatorily.

The information and data in this product data sheet are intended for informative purpose only and may be revised at any time without notice. Presented typical properties of the materials are described only to help readers make their own evaluations and decisions. They are not guaranteed.