

Material properties

Material	St5sp (Russia / GOST)
Group	Structural and constructional steels
Subgroup	GOST 380 Carbon steels

Comment

Application Gost 380-88 is only valid for semi finished product. The requirements for the mechanical and technological properties are determined in the corresponding standards for finished products. There are six categories for plate and five categories for bars and sections.

The following properties are relevant:

- category 1 Rm, Re, A and bending property
- category 2 also the chemical composition
- category 3-6 also the notch impact toughness
- category 3 at +20 C
- category 4 at -20 C
- category 5 in the aged condition (for plate also at -20 C)
- category 6 at -40 C only for plate

For finished products the type and category is added to the designation (e.g. St5sp 1).

(More information for bars in GOST 535-88 and for plate in GOST 14637-89).

Structural carbon steel for plates

Yield Stress[MPa]			
Dimension	Min	Max	Approx
< 20 mm	285	-	-
20-40 mm	275	-	-
40-100 mm	265	-	-
> 100 mm	255	-	-

Tensile Stress[MPa]			
Dimension	Min	Max	Approx
< 20 mm	490	630	-
20-40 mm	490	630	-
40-100 mm	490	630	-
> 100 mm	490	630	-

Elongation A5 [%]			
Dimension	Min	Max	Approx
< 20 mm	20.0	-	-
20-40 mm	19.0	-	-
40-100 mm	17.0	-	-

Elongation A5 [%]

Dimension	Min	Max	Approx
> 100 mm	17.0	-	-

Chemical Composition [%]

Criterion	Min	Max	Approx
C	0.2800	0.3700	-
Si	0.1500	0.3500	-
Mn	0.5000	0.8000	-
P	-	0.0400	-
S	-	0.0500	-
Cr	-	0.3000	-
Ni	-	0.3000	-
As	-	0.0800	-
Cu	-	0.3000	-