

Material properties

Material	St3sp (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
	205	-	-

Tensile Stress[MPa]			
Dimension	Min	Max	Approx
	370	480	-

Elongation A5 [%]			
Dimension	Min	Max	Approx
	23.0	-	-

Chemical Composition [%]			
Criterion	Min	Max	Approx
C	0.1400	0.2200	-
Si	0.1500	0.3000	-
Mn	0.4000	0.6500	-

Chemical Composition [%]

Criterion	Min	Max	Approx
P	-	0.0400	-
S	-	0.0500	-
Cr	-	0.3000	-
Ni	-	0.3000	-
Al	-	-	-
As	-	0.0800	-
Cu	-	0.3000	-
N	-	0.0080	-

- Al Al > 0.02%, can be substituted by Ti < 0.03%

Cross Reference Table

Material	Standard	Country
S 235 JRG 2	AFNOR NF	France
S 235 J 2 G 3	AFNOR NF	France
A 414 Grade A	ASTM	USA
A 284 Grade D	ASTM	USA
S 235 J 2 G 3	B.S.	United Kingdom
304 S 15	B.S.	United Kingdom
HR 37/23	B.S.	United Kingdom
S 235 JRG 2	B.S.	United Kingdom
304 S 16	B.S.	United Kingdom
CS 37/23	B.S.	United Kingdom
HS 37/23	B.S.	United Kingdom
WSt 3 ps	BDS	Bulgaria
WSt 3 sp	BDS	Bulgaria
11375	CSN	Czech Republic
11378	CSN	Czech Republic
RSt 37-2 / S235JRG2	DIN	Germany
St 37-3 G	DIN	Germany
UZSt 37-2	DIN	Germany
RSt 37-2	DIN	Germany
S235J2G3 / Fe 360 D1	DIN	Germany
S235JRG2 / Fe 360 BFN	DIN	Germany
St 37-3	DIN	Germany
1.0116	EN	European Union
1.0122	EN	European Union