4. Cold-rolled carbon steel

4.1. ROLLED STEEL FOR GENERAL APPLICATIONS

Table 4.1. Mechanical properties of steel

Steel grade	Standard	Tensile strength min, MPa (N/mm^2)	Yield point min, MPa (N/mm^2)	Elongation, min,%	Hardness, max. HRB	Mandrel diameter at 180° bending	Erichsen indent depth, mm	Application
K270B 08ps	GOST 16523–97	270–410	…	25	…	d=0	8.4–11.9	*
DC01	EN 10130	270–410	280	28	…	…	…	*
CS type B	ASTM A 1008 (ASTM A 366)	…	…	…	60	d=0	…	*
1015	ASTM A 794	…	…	…	…	d=1.5a	…	…
1017	ASTM A 794	…	…	…	…	d=1.5a	…	…
1020	ASTM A 794	…	…	…	…	d=1.5a	…	…
St12	DIN 1623 p.1	270–410	280	28	65	…	8.8–11.1	*

… — parameter not limited by standard
* — metal furniture, fixtures, further galvanizing and painting, general applications.
a — strip thickness
Previous standard designation is given in parenthesis.

Rolled steel may be produced with special mechanical properties on demand by customer.

Table 4.2. Chemical composition of steel

Steel grade	Fraction of total mass, %									
	C	Si	Mn	Al	S	P	Cr	Ni	Cu	N
08ps	0.10 max	0.10 max	0.25–0.45	0.02–0.07	0.035 max	0.030 max	0.10 max	0.20 max	0.20 max	0.007 max
1015	0.12–0.18	0.30 max	0.30–0.60	0.02–0.07	0.035 max	0.030 max	0.15 max	0.20 max	0.20 max	0.008 max
1017	0.14–0.20	0.30 max	0.30–0.60	0.02–0.07	0.035 max	0.030 max	0.15 max	0.20 max	0.20 max	0.008 max
1020	0.17–0.21	0.30 max	0.30–0.60	0.02–0.07	0.035 max	0.030 max	0.15 max	0.20 max	0.20 max	0.008 max

For steel grades 1015, 1017, 1020 total Cu + Ni + Cr + Mo must not exceed 0.50 %, total Cr + Mo must not exceed 0.16 %.

Table 4.3. Shape and dimension tolerances

Standard for technical specification	GOST 16523–97	ASTM A 1008 (ASTM A 366)	ASTM A 794	DIN 1623, p.1
Standard for product mix, geometry and tolerances	GOST 19904–90	ASTM A 568	ASTM A 568	DIN 1541

4. Cold-rolled carbon steel

4.1. ROLLED STEEL FOR GENERAL APPLICATIONS

Figure 4.1. Thickness-to-width relation for rolled steel, grade 08ps

Strip thickness, mm	Strip width, mm			
	900	1400	1500	1800
0.5	■	■		
0.7	■	■	■	
over 0.8	■	■	■	■
over 1.2	■	■	■	■
over 1.5	■	■	■	■
over 1.8	■	■	■	

Rolled steel with other dimensional requirements, including those to thickness-to-width relation, may be produced to special order upon additional agreement.

Figure 4.2. Thickness-to-width relation for rolled steel, grades 1015, 1017, 1020

Strip thickness, mm	Strip width, mm			
	900	1400	1500	1800
0.6	■	■		
0.7	■	■	■	
over 0.8	■	■	■	■
over 1.2	■	■	■	■
over 1.5	■	■	■	■
over 1.8	■	■	■	
2.5	■	■	■	

Rolled steel with other dimensional requirements, including those to thickness-to-width relation, may be produced to special order upon additional agreement.