

3. Hot-rolled steel flats

3.2. HOT-ROLLED STEEL FOR EXPORT ACCORDING TO DOMESTIC AND INTERNATIONAL STANDARDS

On customer demand hot-rolled steel with agreed mechanical properties may be produced.

Elongation of hot-rolled steel grade DD 13 with thickness of 3–8 mm is determined on samples with initial length of $l_0 = 5.65\sqrt{S_0}$, where S_0 – cross-section area.

Table 3.8. Chemical composition of steel

Fraction of total mass, %									
C	Si	Mn	Al	S	P	Cr	Ni	Cu	N
0.05 max	0.03 max	0.15-0.22	0.02-0.06	0.025 max	0.020 max	0.4 max	0.08 max	0.10 max	0.006 max

For steel grade DS under ASTM A 1011 fraction of total mass of molybdenum, vanadium, niobium and titanium is determined, which must not exceed:

Mo — 0.06%; V — 0.008%; Nb — 0.008%, Ti — 0.008%

Total content of Cu, Cr, Ni, Mo must not exceed 0.50%.

For steel grade DQSK under ASTM A 635 fraction of total mass of molybdenum, vanadium and niobium is determined, which must not exceed:

Mo — 0.06%; V — 0.008%; Nb — 0.008%;

Total content of Cu, Cr, Ni, Mo must not exceed 0.50%.

Table 3.9. Shape and dimensional tolerances

Standard for technical specification	EN 10111	ASTM A 635	ASTM A 1011	DIN 1614-1, DIN 1614-2
Standard for product mix, geometry and tolerances	EN 10051	ASTM A 635	ASTM A 568	DIN 1016

Figure 3.7. Thickness-to-width relation

Strip thickness, mm	Strip width, mm							
	900	1280	1360	1440	1550	1640	1710	1850
1.45								
2.0								
2.3								
2.5								
3.0								
up to 14.0								

Hot-rolled material with other product mix requirements, including in terms of thickness to width ratio may be produced on special order subject to an additional agreement.

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3.2.4. Hot-rolled steel (strength class — 300 MPa)

Table 3.10. Mechanical properties of steel

Steel grade	Standard	Strip thickness, mm	Mechanical properties			
			Tensile strength MPa (N/mm ²)	Yield point, MPa (N/mm ²)	Elongation %, min	Mandrel diameter at 180° bending
1010	ASTM A 635	4.50 – 14.00
1010	SAE J403	1.50 – 4.45
SPHT2	JIS G 3132	1.50 – 2.90	340 min	...	27	d=1.0a
SPHT2	JIS G 3132	3.00 – 5.90	340 min	...	30	d=1.5a
SPHT2	JIS G 3132	6.00 – 14.00	340 min	...	32	d=1.5a

... — parameter not limited by standard

* — subject to agreement between Parties.

a — strip thickness.

On customer demand hot-rolled steel with agreed mechanical properties may be produced.

Table 3.11. Chemical composition of steel

Fraction of total mass, %									
C	Si	Mn	Al	S	P	Cr	Ni	Cu	N
0.08–0.13	0.17–0.35	0.35–0.60	0.02–0.07	0.035 max	0.030 max	0.15 max	0.20 max	0.20 max	0.008 max

For steel grade 1010 under ASTM A 635 and SAE J403 fraction of total mass of molybdenum, vanadium and niobium is determined, which must not exceed:

Mo — 0.06 %; V — 0.008 %; Nb — 0.008 %

Total content of Cu, Cr, Ni, Mo must not exceed 0.50 %.

Table 3.12. Shape and dimensional tolerances

Standard for technical specification	ASTM A 635	SAE J403	JIS G 3132
Standard for product mix, geometry and tolerances	ASTM A 635	ASTM A 568	JIS G 3132 JIS G 3193