

## 3. Hot-rolled steel flats

### 3.3. HOT-ROLLED FLATS MADE OF MICRO ALLOYED STEEL GRADES WITH HIGH YIELD POINT FOR COLD FORMING UNDER EN 10149-2

**Table 3.28. Chemical composition of steel grades S315MC, S355MC, S420MC, S460MC, S500MC, S550MC, S600MC.**

Steel grade	Mass fraction of the elements, %											
	C	Mn	Al	Si	P	S	Cr	Ni	Cu	N	V	Nb
S315MC	0,06-0,09	0,70-0,90	0,02-0,06	≤ 0,10	≤0,015	≤0,008	0,01-0,06	0,01-0,10	0,01-0,10	≤0,007	0,03-0,05	≤0,020
S355MC	0,06-0,09	0,70-0,90	0,02-0,06	≤ 0,10	≤0,015	≤0,008	0,01-0,06	0,01-0,10	0,01-0,10	≤0,007	0,03-0,05	≤0,030
S420MC	0,08-0,10	0,70-0,90	0,02-0,06	≤ 0,10	≤0,015	≤0,008	0,01-0,06	0,01-0,10	0,01-0,10	≤0,007	0,05-0,07	≤0,040
S460MC	0,08-0,10	0,80-1,10	0,02-0,06	≤ 0,10	≤0,015	≤0,008	0,01-0,06	0,01-0,10	0,01-0,10	≤0,007	0,06-0,08	≤0,060
S500MC	0,08-0,11	0,80-1,10	0,02-0,06	≤ 0,10	≤0,015	≤0,008	0,01-0,06	0,01-0,10	0,01-0,10	≤0,007	0,06-0,08	≤0,060
S550MC	0,09-0,12	1,00-1,30	0,02-0,06	≤ 0,10	≤0,015	≤0,008	0,01-0,06	0,01-0,10	0,01-0,10	≤0,007	0,06-0,08	≤0,070
S600MC	0,09-0,12	1,30-1,50	0,02-0,06	≤ 0,10	≤0,015	≤0,008	0,01-0,06	0,01-0,10	0,01-0,10	≤0,007	0,09-0,12	≤0,070

Notes: 1) Total content of Nb, V, Ti –not more, than 0,22 %.  
 2) Upon the customer's request mass fraction of S ≤ 0,010 %.  
 3) Mass fraction Ca = 0,001–0,004 %, Ti = 0,001–0,010 %, B = 0,0001–0,0006 %.

**Table 3.29. Mechanical properties of the rolled flats of grades S315MC, S355MC, S420MC, S460MC, S500MC, S550MC, S600MC**

Steel grade	Tensile strength, N/mm <sup>2</sup>	Yield point, N/mm <sup>2</sup>	Relative elongation, %		Mandrel diameter for bending at 180°
			δ <sub>4</sub>	δ <sub>5</sub>	
			Not more than		
S315MC	390–510	315	20	24	0t
S355MC	430–550	355	19	23	0.5t
S420MC	480–620	420	16	19	0.5t
S460MC	520–670	460	14	17	1.0t
S500MC	550–700	500	12	14	1.0t
S550MC	600–760	550	12	14	1.5t
S600MC	650–820	600	11	13	1.5t

**Figure 3.14. Thickness-to-width relation for the rolled flats made of steel grade S315MC**

Strip thickness, mm	Strip width, mm									
	900	1000	1050	1200	1300	1400	1500	1600	1650	1700
1.50										
1.80										
3.00										
3.60										
4-14.00										

### 3. Hot-rolled steel flats

#### 3.3. HOT-ROLLED FLATS MADE OF MICRO ALLOYED STEEL GRADES WITH HIGH YIELD POINT FOR COLD FORMING UNDER EN 10149-2

Figure 3.15. Thickness-to-width relation for the rolled flats made of steel grade S355MC

Strip thickness, mm	Strip width, mm									
	900	1000	1050	1200	1300	1350	1500	1600	1650	1700
1.50										
1.80										
2.50										
3.00										
4.00										
4-14.00										

Figure 3.16. Thickness-to-width relation for the rolled flats made of steel grade S420MC

Strip thickness, mm	Strip width, mm									
	900	1000	1100	1250	1300	1400	1500	1600	1650	1700
2.00										
2.30										
3.50										
4.00										
6-14.00										

Figure 3.17. Thickness-to-width relation for the rolled flats made of steel grade S460MC

Strip thickness, mm	Strip width, mm									
	900	1000	1050	1250	1300	1450	1500	1600	1650	1700
2.00										
2.30										
3.00										
3.70										
6.50-10.00										

### 3. Hot-rolled steel flats

#### 3.3. HOT-ROLLED FLATS MADE OF MICRO ALLOYED STEEL GRADES WITH HIGH YIELD POINT FOR COLD FORMING UNDER EN 10149-2

Figure 3.18. Thickness-to-width relation for the rolled flats made of steel grade S500MC

Strip thickness, mm	Strip width, mm									
	900	1000	1100	1200	1250	1300	1400	1550	1600	1700
3.50										
4.00										
5.00										
8.00										
10.0-12.00										

Figure 3.19. Thickness-to-width relation for the rolled flats made of steel grade S550MC

Strip thickness, mm	Strip width, mm									
	900	1000	1050	1150	1250	1350	1400	1500	1600	1700
3.50										
4.00										
5.00										
8.00										
10.0-12.00										

Figure 3.20. Thickness-to-width relation for the rolled flats made of steel grade S600MC

Strip thickness, mm	Strip width, mm									
	900	1000	1050	1100	1200	1350	1450	1500	1600	1700
4.00										
5.00										
6.00										
8.00-10.00										