

Liberty Ostrava a.s.

FLAT PRODUCTS

# Flat products P-1500

- Liberty Ostrava commissioned a new Steckel mill in 1999 with nameplate capacity of 1.3Mio TPA.
- Liberty Ostrava is one of very few steel mills world wide, which operates this unique hot rolling technology.
- Key advantage of this technology is hot charging capability and ability to service very small lot size orders with short lead time.

# **Basic (limited) parameters of Steckel Mill:**

Strip thickness: 1,5 to 15,0mm Strip width: 740 to 1535mm

Coil weight: 7 to 33t

Millimeter weight of coil - from 10 to 21.2kg/mm width of strip

# **Steel grades**

- \* Structural steel
- \* Cold forming steel
- \* High-strength steel
- \* Micro-alloyed steel
- \* High carbon steel
- \* Steel resistant to atmosphere corrosion
- \* Steel for pressure vessel applications
- \* Grain oriented electrical steel (GOES)\*
- \* Non grain oriented electrical steel (NGOES)

# Basic offer of steel grades for hot-rolled flat product

Structural steels	EN 10025-2:2004	S235JR, S235J0, S235J2 / also +N (all grades)
High-strength structural steels	EN 10025-2:2004	S275JR, S275J0, S275J2, S355JR, S355J0, S355J2 / also +N (all grades)
Cold forming steels	EN 10111:2008	DD11, DD12, DD13, DD14
	EN 10149-2:2013	S315MC, S355MC, S420MC, S460MC, S500MC*
Micro-alloyed steels	SEW 092:1990	QStE 340TM, QStE 380TM, QStE 420TM, QStE 460TM QStE 500TM*
	EN ISO 3183:2012 API Spec. 5L	L245ME/NE, L290ME/NE, L360ME/NE, L415ME/NE, L485ME* BM, X42M, X52M, X60M, X70M
Weathering steels	EN 10025-5:2004	\$235J0W, \$235J2W, \$355J0W, \$355J2W, \$355J0WP \$355J2WP (all grades only in +AR)
Steels for pressure vessel applications	EN 10028-2:2009	P235GH, P265GH, P355GH, 16Mo3
Structural carbon steels	EN 10083-2:2006 EN 10132-3:2000 EN 10132-4:2000	C22E/R, C35/E/R, C40/E/R, C45/E/R, C50/E/R, C55/E/R, C60/E/R C55S, C60S, C67S, C75S, 28Mn6
GOES, NGOES		Grain Oriented Electrical Steels*, Non-Grain Oriented Electrical Steels*

<sup>\*</sup> These grades are not offered on the standard basis, only upon consultation with the manufacturer.

# Hot-rolled structural steel and cold forming steels

Strip	Thickness	Width	
	1,5 – 1,59 mm	740 – 1 050 mm	
	1,6 – 1,69 mm	740 – 1 150 mm	
	1,7 – 1,79 mm	740 – 1 200 mm	
	1,8 – 1,99 mm	740 – 1 250 mm	
منام والمطينية	2,0 – 2,09 mm	740 – 1 270 mm	
Hot-rolled wide strip	2,1 – 2,29 mm	740 – 1 300 mm	
	2,3 – 2,39 mm	740 – 1 350 mm	
	2,4 – 2,49 mm	740 – 1 400 mm	
	2,5 – 15,0 mm	740 – 1 500 mm	
	2,7 – 15,0 mm	740 – 1 535 mm	
Togrdron*	3,0 – 12,0 mm	1000 – 1 270 mm	
Teardrop*	4,0 – 12,0 mm	1000 – 1 520 mm	

Teardrop only in steel grade S235JR+AR/+N; teardrop pattern according to EN 10 363.

# High-strength structural steels

Strip	Thickness	Width
Hot-rolled wide strip	3 – 13 (15)* mm	740 – 1 300 mm
	4 – 13 (15)* mm	740 – 1 535 mm

<sup>\*</sup> These dimensions are not offered on the standard basis, only upon consultation with the manufacturer.

# Micro-alloyed steels

Strip	Thickness	Width	
Hot-rolled wide strip	3 – 13 mm	740 – 1 100 mm	
	4 – 13 mm	740 – 1 300 mm	
	5 – 13 mm	740 – 1 535 mm	

S500MC or QStE500TM – these grades are not offered on the standard basis, only upon consultation with the manufacturer.

# Micro-alloyed steels (for welded pipes)\*

Strip	Thickness	Width	
Hot-rolled wide strip	5,0 – 12,7 mm	740 – 1 535 mm	

<sup>\*</sup> These grades are not offered on the standard basis, only upon comsultation with the manufacturer.

#### Steel resistant against atmosphere corrosion

Strip	Thickness	Width	
Hot-rolled wide strip	4 – 12 mm	740 – 1 300 mm	
	5 – 12 mm	740 – 1 535 mm	

Supplies of these sheets and strips must be consulted with the manufacturer. HRCs are manufactured only in condition without any special rolling and/or heat treatment condition.

The abbreviated form of this delivery condition is +AR (acc. to EN 10025-5:2004).

#### Steel for pressure purposes

Strip	Thickness	Width
Steels for pressure vessel apps*	4 – 11 mm	740 – 1 535 mm

Certified according to PED 2014/68/EU

#### Structural carbon steels

Strip	Thickness	Width	
Hot-rolled wide strip*	2,5 – 6,0 mm	740 – 1 100 mm	
	3,0 – 6,0 mm	740 – 1 300 mm	

 $<sup>^{</sup>st}$  Other dimensions are not offered on the standard basis, only upon consultation with the manufacturer.

# Slit hot-rolled coiled strips

Workmanship	Thickness	Width	Approx. weight	
	1,5 – 5,0 mm	20 – 120 mm	As per required width of strip	
	1,5 – 6,0 mm	90 – 200 mm	7,0 - 10,0 kg/mm	
Clit anilad atvia	1,5 – 1,59 mm	140 – 1 030 mm	As per required width of strip	
Slit coiled strip	1,6 – 1,79 mm	140 – 1 180 mm		
	1,8 – 2,49 mm	140 – 1 230 mm	18,0 - 21,0 kg/mm	
	2,5 – 8,0 mm	140 – 1 500 mm		

#### **Hot-rolled steel sheets**

Workmanship	Thickness	Width	Length	Pack weight - limi
Mill edge*	Table 2**			
	1,5 – 1,59 mm	720 – 1 030 mm		
	1,6 – 1,69 mm	720 – 1 130 mm		Max. 5 tons
	1,7 – 1,79 mm	720 – 1 180 mm		
	1,8 – 1,99 mm	720 – 1 230 mm	1,0 – 12,0 m	
Trimmed edge*	2,0 – 2,09 mm	720 – 1 250 mm		
	2,1 – 2,29 mm	720 – 1 280 mm		
	2,3 – 2,39 mm	720 – 1 330 mm		
	2,4 – 2,49 mm	720 – 1 380 mm		
	2,5 – 13,0 mm	720 – 1 500 mm		
Tamadaaa (MA:II adaa)	3,0 – 12,0 mm	1 000 – 1 270 mm		
Teardrop (Mill edge)	4,0 – 12,0 mm	1 000 – 1 520 mm		
	3,0 – 12,0 mm	980 – 1 250 mm		
eardrop (Trimmed edge)	4,0 – 12,0 mm	980 – 1 500 mm		

Standard widths for sheets & plates are 1 000, 1 250 and 1 500 mm.

Teardrop HRCs only in steel grade S235JR+AR/+N; teardrop pattern according to EN 10 363

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<sup>\*</sup> Other dimensions are not offered on the standard basis, only upon consultation with the manufacturer.

<sup>\*</sup> Figures just informative because especially some high strength grades could not be trimmed according to the table, therefore available only upon consultation with the manufacturer

<sup>\*\*</sup> Sheets and plates (only with the mill edge) are available up to the width 2 000 mm.