



## HOT-ROLLED SHEET

The material used in hot rolling is steel slabs with typical dimensions of 12,000 x 1,650 x 250 mm. The slabs are heated in special ovens to up to 1,250° C and then pass through a series of rollers that gradually reduce their thickness. Finally, the slabs are moved onto a roll. Hot-rolled sheet is produced in thicknesses of approx. 1.5 to 20 mm. For better surface finish, the sheet can be pickled after cooling off. Pickling means that the sheet goes through an acid bath that removes iron oxide from the surface. Strip pickled sheet is manufactured in thicknesses of approx. 1.5 to 12 mm.

### STÅLSORTER

**Mild steel:** Used when forming and drawing properties are more important than tensile ones.

**Structural steel:** Used for general construction purposes that do not place such high requirements to plasticity. Guaranteed minimum yield and tensile strength values

**High-strength micro-alloyed steel:** Combines high strength and good plasticity. The perfect steel for bending, which also provides great opportunities for weight savings.

**Pressure vessel steel:** Designed for closed pressurised containers.

**Weathering steel:** Develops an effective atmospheric rust protection of its own.

#### MECHANICAL PROPERTIES – SOFT STEELS

	Yield strength $R_e$ (N/mm <sup>2</sup> )		Tensile strength $R_m$ max. (N/mm <sup>2</sup> )	Elongation min. (%) $A_{80}$		
	$1,5 \leq t < 2,0$	$2,0 \leq t \leq 8,0$		$1,5 \leq t < 2,0$	$2,0 \leq t < 3,0$	$A_s$ $3,0 \leq t \leq 8,0$
EN 10 111						
DD 11	170-360	170-340	440	23	24	28
DD 12	170-340	170-320	420	25	26	30
DD 13	170-330	170-310	400	28	29	33
DD 14	170-310	170-290	380	31	32	36

Values are based on samples taken transversely to the direction of rolling.

#### MECHANICAL PROPERTIES – STRUCTURAL STEEL

	Yield strength $R_e$ min. (N/mm <sup>2</sup> )	Tensile strength $R_m$ max. (N/mm <sup>2</sup> )		Elongation min. (%) $A_{80}$			
		$t < 3$	$3 \leq t$	$1,5 \leq t < 2,0$	$2,0 \leq t < 2,5$	$2,5 \leq t \leq 3,0$	$A_s$ $3,0 \leq t$
EN 10 025-2							
S 235 JR	235	360-510	360-510	17	18	19	24
S 275 JR	275	430-580	410-560	15	16	17	21
S 355 JR	355	510-680	470-630	14	15	16	20

Values are based on samples taken transversely to the direction of rolling.

**MECHANICAL PROPERTIES – HIGH-STRENGTH MICRO-ALLOYED STEELS**

	Yield strength $R_e$ min. (N/mm <sup>2</sup> )*	Tensile strength $R_m$ min.-max. (N/mm <sup>2</sup> )*	Elongation min. (%)*		endability 180°** min. mandrel diameter
			$A_{80}$ 1,5≤t<2,0	$A_5$ 2,0≤t<3,0	
<b>EN 10 149 - 2</b>	<b>1,5≤t&lt;2,0</b>				
<b>S 315 MC</b>	315	390-510	20	24	0 x t
<b>S 355 MC</b>	355	430-550	19	23	0,5 x t
<b>S 420 MC</b>	420	480-620	16	19	0,5 x t
<b>S 460 MC</b>	460	520-670	14	17	1,0 x t
<b>S 500 MC</b>	500	550-700	12	14	1,0 x t
<b>S 550 MC</b>	550	600-760	12	14	1,5 x t
<b>S 600 MC</b>	600	650-820	11	13	1,5 x t
<b>S 650 MC</b>	650	700-880	10	12	2,0 x t
<b>S 700 MC</b>	700	750-950	10	12	2,0 x t

\*) Tensile test values are based on samples taken transversely to the direction of rolling.

\*\*) Bending test values are based on samples taken transversely to the direction of rolling.

## SURFACE

Hot-rolled sheet is available with the following variety of surface designs:

- Unpickled, also referred to as black steel
- Pickled and oiled
- Pickled and dry

We offer by default pickled and oiled.

## THICKNESS TOLERANCES, ACCORDING TO EN 10 051

Nominal thickness (mm)	Thickness tolerances for nominal width (mm)			
	≤ 1200	≤ 1200 ≤ 1500	≤ 1500 ≤ 1800	> 1800
≤ 2,00	± 0,17	± 0,19	± 0,21	–
> 2,00 ≤ 2,50	± 0,18	± 0,21	± 0,23	± 0,25
> 2,50 ≤ 3,00	± 0,20	± 0,22	± 0,24	± 0,26
> 3,00 ≤ 4,00	± 0,22	± 0,24	± 0,26	± 0,27
> 4,00 ≤ 5,00	± 0,24	± 0,26	± 0,28	± 0,29
> 5,00 ≤ 6,00	± 0,26	± 0,28	± 0,29	± 0,31
> 6,00 ≤ 8,00	± 0,29	± 0,30	± 0,31	± 0,35
> 8,00 ≤ 10,00	± 0,32	± 0,33	± 0,34	± 0,40
> 10,00 ≤ 12,50	± 0,35	± 0,36	± 0,37	± 0,43
> 12,50 ≤ 15,00	± 0,37	± 0,38	± 0,40	± 0,46

For steel grades with a specified yield strength above 350 N/mm<sup>2</sup>, tolerances are raised by 15%.  
 above 400 N/mm<sup>2</sup>, tolerances are raised by 30%.  
 above 460 N/mm<sup>2</sup>, tolerances are raised by 40%.  
 Modern rolling mills generally stay within 75% of EN 10051.  
 Narrower tolerances are available at extra charge.

## WIDTH TOLERANCES, ACCORDING TO EN 10 051

Nominal thickness (mm)	Width tolerance (valskanter) (mm)		
	– 0	/	+20
≤ 700 ≤ 1200	– 0	/	+20
> 1200 ≤ 1500	– 0	/	+20
> 1500 ≤ 2070	– 0	/	+25