



## Hot-rolled steel strip



SLIT

CUT SHEETS

# Pole sheets

Data sheet • April 2016

### Thermomechanically rolled steels with guaranteed magnetic properties

Hot-rolled pole sheet steels are manufactured exclusively in the integrated metallurgical facility of voestalpine Stahl. The most modern manufacturing technologies, continuous quality control systems and intensive research and development at the production site guarantee optimized product quality. Standard grades are pursuant to Euronorm EN 10265:1995 (corresponding to IEC 404-8-5). Ultra-high-strength special voestalpine grades are also supplied. The steel can be heat-treated and/or stress-relief-annealed between 530 and -580 °C. Should heat treatment above 580 °C be necessary, please contact our quality control department.

#### Convincing advantages

- Excellent magnetic properties
- Homogeneous mechanical properties
- Lowest anisotropy in longitudinal and cross direction
- Best cuttability and punchability
- Minimum inherent stress
- Narrowest flatness, shape and dimensional tolerances
- Minimum deviations in thickness (across cross-section of cut sheets)
- Special production route for homogeneous and adhesive oxide layer that guarantees best insulation

## Mechanical and magnetic properties: Tensile test/magnetic polarization

Standard grades pursuant to EN 10265:1995, corresponding to IEC 404-8-5 and ultra-high-strength special voestalpine grades

Steel grade	Testing direction	Yield strength $R_{p0.2}$ [MPa]	Tensile strength $R_m$ [MPa]	Elongation [%] min.		Magnetic polarization [Tesla] Minimum value at field intensity	
				$A_{80}$	$A_5$	5000 [A/m]	15000 [A/m]
<b>Standard grades pursuant to EN 10265:1995, corresponding to IEC 404-8-5</b>							
250-TG-180	transverse	≥ 250	≥ 350	22	26	1.60	1.80
300-TG-180	transverse	≥ 300	≥ 400	20	24	1.60	1.80
350-TG-179	transverse	≥ 350	≥ 450	18	22	1.55	1.79
400-TG-179	transverse	≥ 400	≥ 500	16	19	1.55	1.79
450-TG-179	transverse	≥ 450	≥ 550	14	17	1.54	1.79
500-TG-179	transverse	≥ 500	≥ 600	12	14	1.53	1.79
550-TG-178	transverse	≥ 550	≥ 650	12	14	1.52	1.78
600-TG-178	transverse	≥ 600	≥ 700	10	12	1.50	1.78
650-TG-178	transverse	≥ 650	≥ 750	10	12	1.48	1.78
700-TG-178	transverse	≥ 700	≥ 800	10	12	1.46	1.78
<b>Ultra-high-strength special voestalpine grades</b>							
750-VA-178	transverse	≥ 750	≥ 800	≥ 10	≥ 12	1.46	1.78
	longitudinal	≥ 730	≥ 750				
750-VA-175	longitudinal + transverse	≥ 750	≥ 800	≥ 9	≥ 11	1.46	1.75
800-VA-175	longitudinal + transverse	≥ 800	≥ 850	-	≥ 10	1.46	1.75
850-VA-175	longitudinal + transverse	≥ 850	≥ 900	-	≥ 10	1.46	1.75
900-VA-175	longitudinal + transverse	≥ 900	≥ 930	-	≥ 10	1.46	1.75

Measurement of fracture elongation  $A_{80}$  for thicknesses < 3 mm  
 $A_5$  for thicknesses < 3 mm

### Why ultra-high-strength steels?

- Large-scale, high-speed and variable-speed machinery applications require ultra-high-strength steels.
- Ultra-high-strength steels lead to increases in operating times/service life through increased fatigue resistance.
- Increased safety during high rotational speeds (load shedding) and downtimes (pulsating loads) resulting from disturbances.
- Reduced radial generator dimensions require the use of ultra-high-strength steels because of increased dynamic forces. However, the construction of such generators requires less material and leads to significant cost savings in power plants.

## Example dimensions

Maximum width per thickness

Steel grade	Thickness [mm]							
	2.00	2.50	3.00	3.50	4.00	5.00	6.00	12.00
<b>Standard grades pursuant to EN 10265:1995, corresponding to IEC 404-8-5</b>								
250-TG-180	1620	1620	1620	1620	1620	1620	1620	1620
300-TG-180	1620	1620	1620	1620	1620	1620	1620	1620
350-TG-179	1500	1620	1620	1620	1620	1620	1620	1620
400-TG-179	1350	1620	1620	1620	1620	1620	1620	1620
450-TG-179	1350	1620	1620	1620	1620	1620	1620	1620
500-TG-179	1280	1480	1620	1620	1620	1620	1620	1620
550-TG-178 <sup>1)</sup>	1280	1480	1620	1620	1620	1620	1620	1620
600-TG-178 <sup>1)</sup>	1280	1480	1620	1620	1620	1620	1620	1620
650-TG-178 <sup>1)</sup>	1250	1380	1510	1620	1620	1620	1620	1620
700-TG-178 <sup>1)</sup>	1250	1380	1510	1620	1620	1620	1620	1620
<b>Ultra-high-strength special voestalpine grades</b>								
750-VA-178 <sup>1)</sup>	1250	1380	1510	1620	1620	1620	1620	1620
750-VA-175 <sup>1)</sup>	-	-	1300	1360	1620	1620	1620	-
800-VA-175 <sup>1)</sup>	-	-	1150	1310	1470	1500	1500	-
850-VA-175 <sup>1)</sup>	-	-	1150	1310	1470	1500	1500	-
900-VA-175 <sup>1)</sup>	-	-	1150	1310	1470	1500	1500	-

<sup>1)</sup> Available only as cut sheets in unpickled condition

Additional dimensions upon request.

Depending on the dimensions and strength, we also supply pickled, oiled and trimmed.

Steel strip		Cut sheets	
Prematerial width:	max. 1620 (1750) mm	Thickness	2.0–12.0 mm
Weight/Width	18–20 kg/mm	Length	up to 12 m (18 m)

**Please find further information and downloadable files at  
[www.voestalpine.com/pro/index.html](http://www.voestalpine.com/pro/index.html)**

Information and product properties provided in this publication have the sole purpose of giving non-binding technical guidance and by no means replace individual expert advice from our sales and customer service team. Information and product properties provided in this brochure shall not be deemed guaranteed characteristics unless this has been agreed upon individually. Technical changes reserved, errors and misprints excepted. No part of this publication may be reprinted without explicit written permission by voestalpine Stahl GmbH.

### voestalpine Steel Division

voestalpine-Straße 3  
 4020 Linz, Austria  
 T. +43/50304/15-8018  
[produktmanagement@voestalpine.com](mailto:produktmanagement@voestalpine.com)  
[www.voestalpine.com/steel](http://www.voestalpine.com/steel)

**voestalpine**

ONE STEP AHEAD.