Steel belts for the transport industry

Durable steel belts for the most demanding processes

Our long years of experience and expertise in manufacturing belts and belt systems have established the Berndorf Band Group as an all-inclusive service provider for all steel belt needs. For many years, the company has been making conveyor and sorting belts with total lengths of up to 300 meters and minimum straight running deviations. Acclaimed around the world for their high-quality products and comprehensive range of services, the Berndorf experts make the belt endless by welding during installation. More over, the company will also recalibrate machines as necessary and replace components that come into contact with the belt such as edge rollers, idler rollers and spring assemblies.

Fully aware of the specific requirements prevalent in the transport industry, the company makes the most robust steel belts that show only minimum abrasion wear during the transport of bulky mineral materials. Meanwhile, Berndorf steel belts also stand out from the competition with their dynamic fatigue strength, which is paramount given the high conveying speeds and the resulting number of load cycles. After a comprehensive consultation, we quickly find the material with the properties our customers are looking for and can then deliver and install the product within a few weeks.

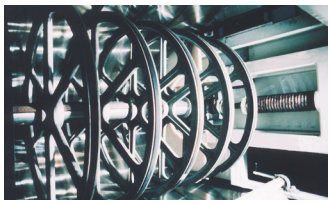
Highlights

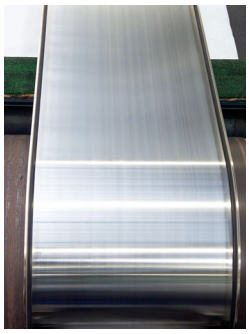
- High dynamic fatigue strength
- Precise and straight tracking
- Perfect flatness
- Optimum axial straightness
- Smooth surface

Additional components supporting the process

Guiding and supporting sheaves

Cast in an aluminum alloy and subsequently machined to precise tolerances, the guiding and supporting sheaves made by Berndorf Band Group offer a reasonably priced alternative to drums.





Vee-ropes and product retaining strips

Berndorf applies a special manufacturing method to guarantee perfect adhesion of their vee-ropes and product retaining strips. Customers can choose from different vee-ropes or product retaining strips for their steel belts that vary with the application and the operating temperature at hand. The materials available are nitrile rubber (-20 °C to +100 °C), natural rubber (-60 °C to + 60 °C), silicone rubber (-80 °C to +300 °C) and spiral vee-rope made of stainless steel (over +100 °C).

Physical and mechanical properties of the steel belts

Material			NICRO 12.1	CARBO 13	CARBO 24	CARBO 32
Type			CrNi 17 7	Ck 67	-	-
Similar material no.		DIN AISI	1.4310 301	1.1231 -	- -	- -
Tensile strength	at 20 °C	N/mm²	1,150	1,200	1,420	1,280
0.2% yield offset strength	at 20 °C	N/mm²	950	970	1,320	1,220
Hardness		Rockwell HRC Vickers HV 10	37.0 360	36.0 350	44.5 440	42 410
Elongation 50 mm		%	18	8	6	5
Welding factor			0.70	0.80	0.75	0.80
Fatigue strength under reversed bending stress*	at 20 °C	N/mm²	480	450	550	550
Modulus of elasticity	at 20 °C at 200 °C	N/mm² N/mm²	200,000 180,000	210,000 -	210,000 -	205,000 -
Density		kg/dm³	7.90	7.85	7.85	7.82
Mean coefficient of thermal expansion	20-100 °C 20-200 °C 20-300 °C 20-400 °C	10^{-6} m/m°C 10^{-6} m/m°C 10^{-6} m/m°C 10^{-6} m/m°C	16.0 17.0 - -	11.1 11.9 12.5 12.9	12.0 12.5 12.9 -	11.8 12.4 12.6 12.9
Specific heat		J/g°C	0.50	0.46	0.45	0.46
Thermal conductivity	at 20 °C	W/m°C	15	46	40	38
Specific electric resistance	at 20 °C	Ohm mm²/m	0.73	0.13	0.20	0.20
Max. permissible operating temperature		°C °F	250 480	400 750	250 480	350 660
Tensile strength at max. permissible operating temperature		N/mm²	940	850	1,300	1,100
0.2% yield strength at max. permissible operating temperature		N/mm²	770	720	1,100	1,050

* 50 % of the test specimens withstand 2,000,000 load cycles.
Typical values. If not otherwise specified, the values given apply at room temperature. Subject to change due to technological progress. Errors and omissions excepted.

Berndorf Band GmbH
Leobersdorfer Strasse 26
2560 Berndorf
Austria

E: band@berndorf.co.at
T: +43 2672 800 0
F: +43 2672 841 76
www.berndorfband-group.com

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