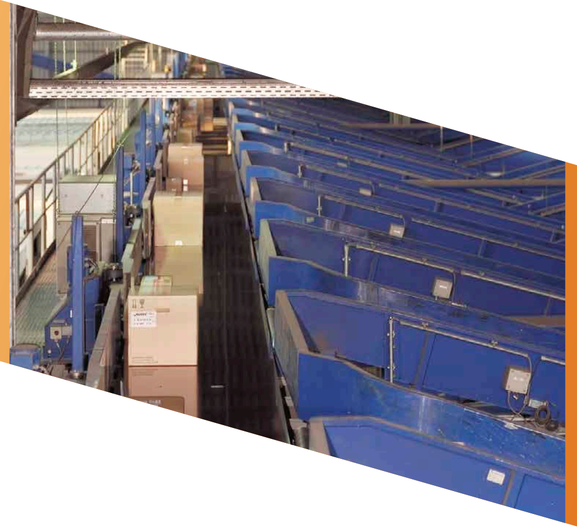
berndorf BAND GROUP

Steel belts for the transport industry

Durable steel belts for most demanding processes



Multiple solutions from a single source

The Berndorf Band Group is the world‘s leading supplier for steel belts, belt systems and worldwide service. Our turnkey products are used in continuous production processes of various industries. The continuous development and quality of our products is of great importance and gives us the possibility to adapt the characteristics of our portfolio, so that every product fits to the required customer needs.For many years, the company has been manufacturing conveyor and sorting belts with total lengths of up to 300 m (948 ft) and minimum straight running deviations.

Worldwide known of our high-quality products and comprehensive range of services, Berndorf experts weld the steel belt endless during the installation on site. More over, Berndorf Band Group will also align machines as necessary and replace components that come into contact with the steel belt.

Areas of application

Steel belts of the transport industry are mainly applied for the transport of bulk and general cargo. In accordance with your requirements, our experts select the appropriate steel belt material for your application.

Worldwide service

The Berndorf Band Group service network performs such tasks as steel belt installations, repairs, inspections, maintenance and training for all types of belts worldwide. Find your service partner close to you on www.berndorfband-group.com

Durable steel belts for the most demanding processes

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.

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 find the best material to fulfil the customer requirements and can then deliver and install the product within a few weeks.

ADVANTAGES

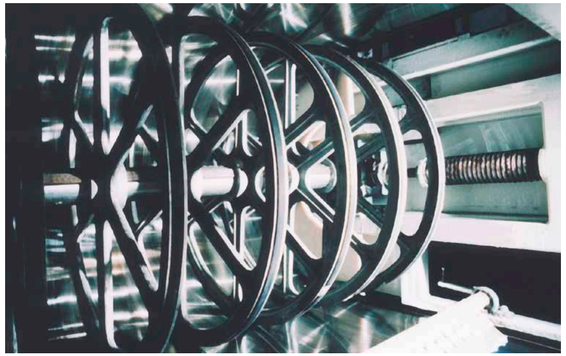
» High dynamic fatigue strength
» Precise and straight tracking
» Perfect flatness
» Optimum axial straightness
» Smooth surface

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.

For further information including an overview of all belt tracking solutions please contact your Berndorf Band Group representative or visit www.berndorfband-group.com.



« Customized process systems are our core competence. So, also transport and sorting belts are manufactured according to our customer´s demands. »

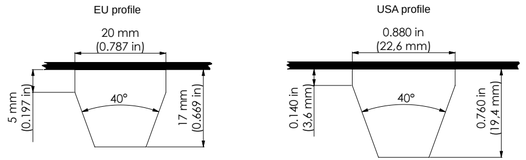
Richard Szigethi
Technical Product Manager

Vee-ropes and retaining strips

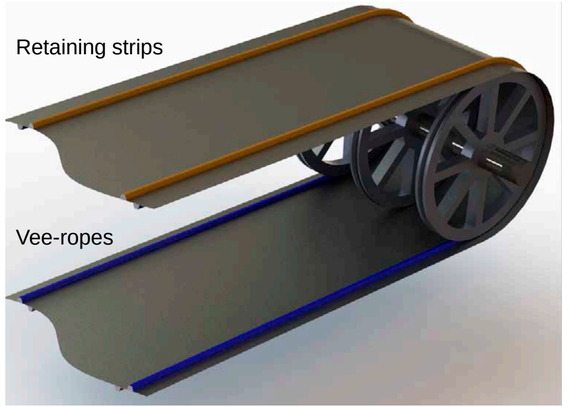
Steel belts of Berndorf Band Group can be provided with vee-ropes and/or retaining strips. A special production process gurantees perfect adhesion of the ropes and strips, independently from different mechanical load and working temperatures.

Vee-ropes

When using steel belts, a good belt run is essential. With vee-ropes the steel belt is positively guided. Different working temperatures do not damage the vee-ropes, because the temperature changes have no effects to the ropes. Depending on the material and type of the guiding and supporting sheaves the suitable vee-rope is selected from a big variety of different types of vee-ropes.



Vee-rope-material	Operating temperatures
Nitrile rubber	-20 °C to +100 °C | -4 °F to +212 °F
Natural rubber	-60 °C to +60 °C | -76 °F to +140 °F
Stainless steel spiral vee-rope	exceeding +100 °C | exceeding +212 °F



Retaining strips

Product retaining strips allow the pouring of viscous products onto the surface of the belt without the product running off the edges. Depending on the type of strips, they can be connected to the belt by means of bolts and a screw connection or by the use of a special glue.

Retaining strip-material	Operating temperatures
Nitrile rubber	-20 °C to +100 °C | -4 °F to +212 °F
Natural rubber	-60 °C to +60 °C | -76 °F to +140 °F
Silicone rubber	-80 °C to +300 °C | -112 °F to +572 °F

Steel belts for the transport industry - physical and mechanical properties. Typical values.

Material			NICRO 12.1	CARBO 13	CARBO 24	CARBO 32
Type			CrNi 17 7	Ck 67	-	-
Similar material		DIN AISI	1.4310 301	1.1231 -	- -	- -
Tensile strength	at 20 °C at 68 °F	N/mm² psi	1,150 166,800	1,200 174,000	1,420 206,000	1,280 185,600
0,2%-yield offset strength	at 20 °C at 68 °F	N/mm² psi	950 137,800	970 140,700	1,320 191,500	1,220 177,000
Hardness		Rockwell HRC Vickers HV 10	37.0 360	36.0 350	44.5 440	42 410
Elongation 50 mm | 1.97 inch		%	18	8	6	5
Welding factor			0.70	0.80	0.75	0.80
Fatigue strength under reversed bending stress*	at 20 °C at 68 °F	N/mm² psi	480 69,600	450 65,300	550 79,800	550 79,800
Modulus of elasticity	at 20 °C at 200 °C at 68 °F at 392 °F	N/mm² N/mm² kpsi kpsi	200,000 180,000 29,000 26,100	210,000 - 30,500 -	210,000 - 30,500 -	205,000 - 29,700 -
Density		kg/dm³ lbm/in³	7.90 0.29	7.85 0.28	7.85 0.28	7.82 0.28
Mean coefficient of thermal expansion	20-100 °C 20-200 °C 20-300 °C 20-400 °C 68-212 °F 68-392 °F 68-572 °F 68-752 °F	10⁻⁶m/m°C 10⁻⁶m/m°C 10⁻⁶m/m°C 10⁻⁶m/m°C 10⁻⁶in/in°F 10⁻⁶in/in°F 10⁻⁶in/in°F 10⁻⁶in/in°F	16.0 17.0 - - 8.9 9.4 - -	11.1 11.9 12.5 12.9 6.2 6.6 6.9 7.2	12.0 12.5 12.9 - 6.7 6.9 7.2 -	11.8 12.4 12.6 12.9 6.6 6.9 7.0 7.2
Specific heat		J/g°C BTU/lb°F	0.50 0.12	0.46 0.11	0.45 0.11	0.46 0.11
Thermal conductivity	at 20 °C at 68 °F	W/m°C BTU/hr ft°F	15 8.7	46 26.6	40 23.1	38 22
Specific electric resistance	at 20 °C at 68 °F	Ω mm²/m Ω mil²/in°F	0.73 28.74	0.13 5.12	0.20 7.87	0.20 7.87
Min. permissible operating temperature		°C °F	-196 -321	- -	- -	- -
Max. permissible operating temperature		°C °F	250 480	400 750	250 480	350 660
Tensile strength at max. permissible operating temperature		N/mm² psi	940 136,300	850 123,300	1,300 188,500	1,100 159,500
0.2%-yield offset strength at max. permissible operating temperature		N/mm² psi	770 111,700	720 104,400	1,100 159,500	1,050 152,300

Special materials available upon request.

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

The application areas for steel belts and belt systems of Berndorf Band Group are as broad and individual as your requirements. Give us the opportunity to discuss your goals in a personal meeting. Together we will find the right solution for your requirements.

Our worldwide sales and service network available on www.berndorfband-group.com

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