



# STEEL BELTS FOR FOOD PROCESSING

Berndorf Band is one of the world's leading manufacturers of high-quality process and transport belts for the food industry.

## Reliable, hygienic and easy to clean

When it comes to cooling, deep-freezing, steaming, drying and transporting food, steel belts are often exposed to extreme mechanical and thermal stress. Berndorf Band steel belts are designed to withstand these high requirements. They provide high quality and reliability even at fluctuating operating temperatures and at high load cycles. The belts are characterized by perfect flatness, abrasion resistance and straight tracking.

In the industrial food processing industry the smooth surface of steel belts eliminates fibers or fat remnants from lodging within

gaps during processing, helping maintain hygienic requirements. Steel belts from Berndorf Band do not only meet strictest hygienic requirements but are also easy to clean. Due to the smooth belt surface limited amounts of aggressive chemicals are required. The cleaning area can be reached easily and there are no hidden edges needing to be flooded with aggressive detergents. Not only does the smooth belt surface allow for an environmentally friendly cleaning solution, it also saves time!



Corrosion resistance is another crucially important element of steel belts. Therefore, Berndorf Band pays special attention to material selection.

## Continuous Reliability

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## Endless steel belts from the beginning



During each production step all steel belts from Berndorf Band are run in endless condition between two drums.

The results of this production method are perfect tracking and belt straightness. For you as a customer this means less downtime resulting from tracking problems and longer belt life due to less belt damage. Furthermore steel belts from Berndorf Band show excellent flatness leading to improved product quality and less scrap.

### **Chocolate prefers CARBO 32**

Berndorf Band offers with the martensitic steel CARBO 32 a transport belt with numerous advantages, e.g. easy weldability, high resistance against abrasion and deformation as well as high fatigue strength under bending stress.

### **Technical support**

Berndorf Band has an international service network offering steel belt installation, repair and inspection. Highly qualified Berndorf Band engineers and service technicians can perform inspections on your steel belt and conveyor. We also offer other special engineering services related to conveyor improvements.

### **Belt tracking systems**

A reliable belt tracking system is critical to the trouble-free operation of a steel belt system. It must withstand widely varying conditions, such as pressure and temperature, and protect the steel belt from excessive stress. Berndorf Band offers reliable and safe tracking systems.

## Perforated steel belts & accessories

### Vee-ropes & product retaining strips

Berndorf Band guarantees perfect adhesion of vee-ropes and product retaining strips.

#### Material of vee-ropes

Natural or nitrile rubber (standard) for operating temperatures from  $-20^{\circ}\text{C}$  -  $+100^{\circ}\text{C}$  =  $-4^{\circ}\text{F}$  -  $212^{\circ}\text{F}$

Natural rubber for operating temperatures from  $-60^{\circ}\text{C}$  -  $+60^{\circ}\text{C}$  =  $-76^{\circ}\text{F}$  -  $140^{\circ}\text{F}$

Spiral vee-rope made of stainless steel for operating temperatures exceeding  $+100^{\circ}\text{C}$  =  $212^{\circ}\text{F}$

#### Material of product retaining strips

Nitrile rubber for operating temperatures from  $-20^{\circ}\text{C}$  -  $+100^{\circ}\text{C}$  =  $-4^{\circ}\text{F}$  -  $212^{\circ}\text{F}$

Natural rubber for operating temperatures from  $-60^{\circ}\text{C}$  -  $+60^{\circ}\text{C}$  =  $-76^{\circ}\text{F}$  -  $140^{\circ}\text{F}$

Silicone rubber for operating temperatures from  $-80^{\circ}\text{C}$  -  $+200^{\circ}\text{C}$  =  $-112^{\circ}\text{F}$  -  $392^{\circ}\text{F}$

### Perforated steel belts

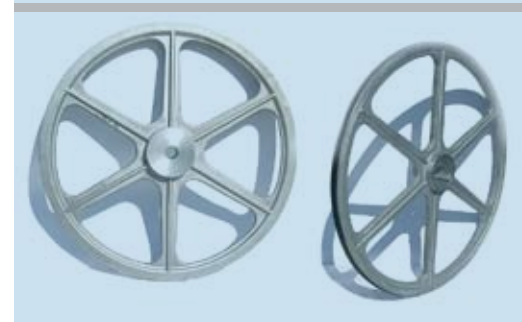
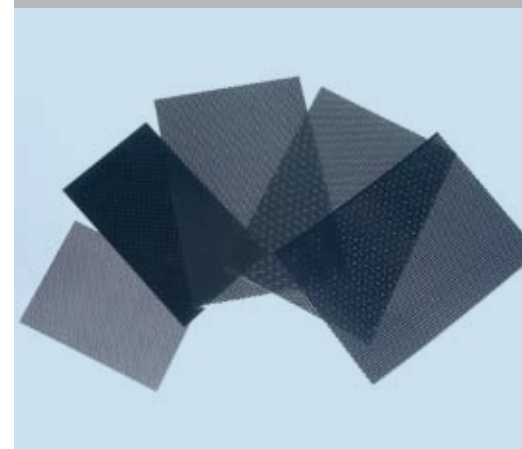
Berndorf Band can provide the following standard perforations (dimensions mm/in):

Hole diameter	2,5/.098	3,0/.118	3,1/.122
Triangular pitch	5,0/.197	6,5/.256	5,0/.197
Open space	22.68%	19.32%	34.87%

Other, special perforations are available on request.

### Guiding & supporting sheaves

Berndorf Band offers all prevalent executions of both guiding and supporting sheaves. For more detailed information please contact your local Berndorf Band representative.



## Technical data

Physical and mechanical properties. Typical values.

Material			NICRO 12.1	NICRO 22	NICRO 31	NICRO 52	CARBO 13	CARBO 32
Type			CrNi 17 7	CrNiMo 17 12 2	CrNiTi 13 4	CrNiCuTi 15 7	Ck 67	-
Similar material		DIN	1.4310	1.4401	1.4313	-	1.1231	-
		AISI	301	316	-	-	-	-
Tensile strength	RT	N/mm <sup>2</sup>	1150	1100	1080	1150	1200	1280
0.2% yield offset strength	RT	N/mm <sup>2</sup>	950	970	1050	1100	970	1220
Hardness		Rockwell HRC	37,0	33,0	33,5	37,0	36,0	42
		Vickers HV 10	360	330	330	360	350	410
Elongation 50 mm		%	18	12	5	8	8	5
Welding factor			0,70	0,65	0,95	0,95	0,80	0,80
Fatigue strength under reversed bending	RT	N/mm <sup>2</sup>	480	440	480	500	450	550
Modulus of elasticity	at 20 °C= 68 °F	N/mm <sup>2</sup>	200.000	200.000	205.000	200.000	210.000	205.000
Density		kg/dm <sup>3</sup>	7,90	7,95	7,70	7,74	7,85	7,82
Mean coefficient of thermal expansion	20-100 °C= 68-212 °F	10 <sup>-6</sup> m/m°C	16,0	16,5	10,8	10,9	11,1	11,8
	20-200 °C= 68-392 °F	10 <sup>-6</sup> m/m°C	17,0	17,5	11,2	11,5	11,9	12,4
	20-300 °C= 68-572 °F	10 <sup>-6</sup> m/m°C	-	-	11,7	11,7	12,5	12,8
	20-400 °C= 68-752 °F	10 <sup>-6</sup> m/m°C	-	-	-	-	12,9	-
Specific heat		J/g°C	0,50	0,50	0,46	0,50	0,46	0,46
Thermal conductivity	at 20 °C= 68 °F	W/m°C	15	15	21	16	46	38
Specific electric resistance	at 20 °C= 68 °F	Ohm mm/m <sup>2</sup>	0,73	0,75	0,60	0,80	0,13	0,20
Max. permissible operating temperature		°C	250	250	350	350	400	350
		°F	480	480	660	660	750	660
Tensile strength at max. permissible operating temperature		N/mm <sup>2</sup>	940	870	970	900	850	1100
0.2% yield offset strength at max. permissible operating temperature		N/mm <sup>2</sup>	770	770	930	830	720	1050

\*) 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 omissions excepted.