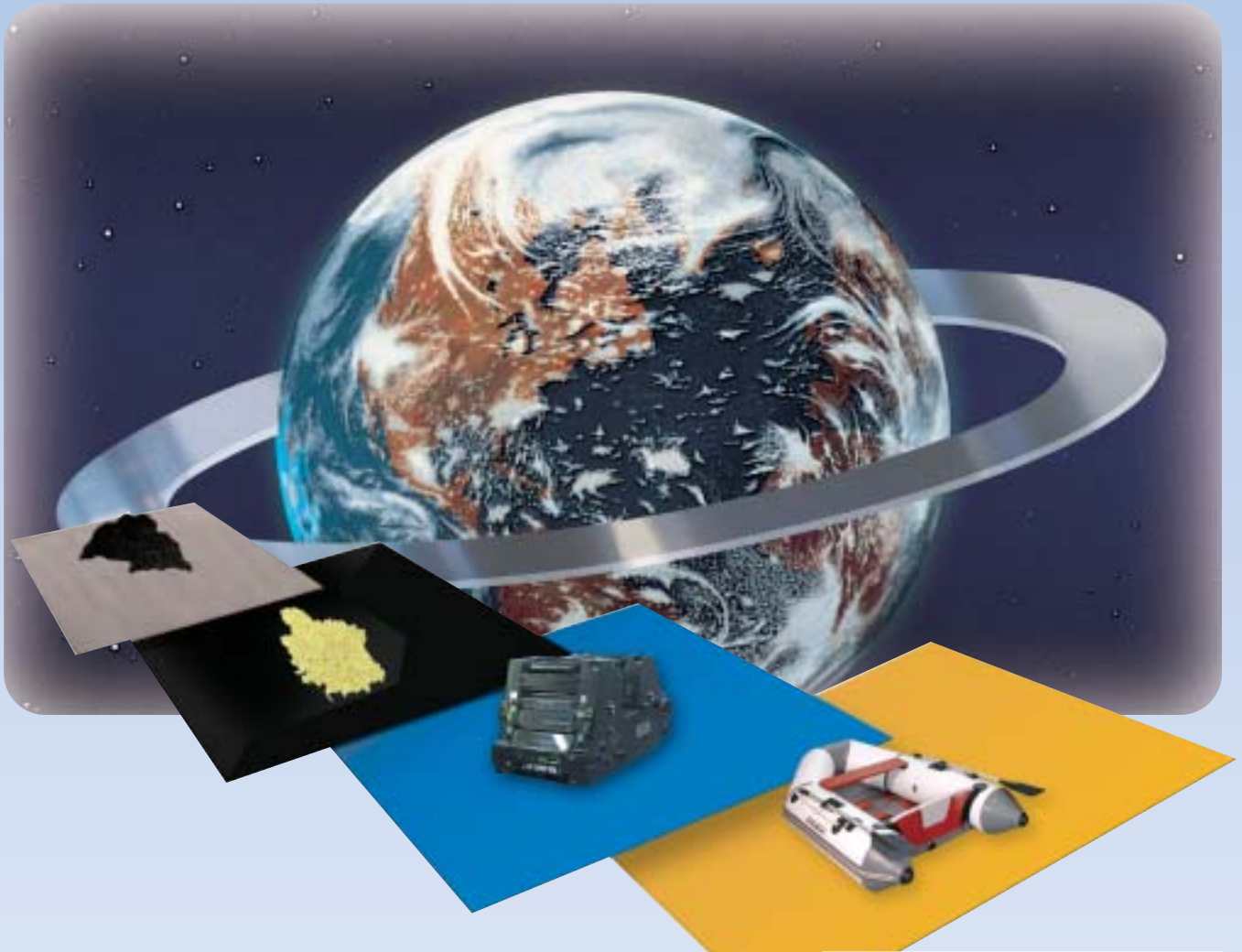


Rubber- and Plastic Products



Berndorf Band is one of the world's leading manufacturers of high-quality process belts made of stainless steel. Continuous development, innovative production methods and new materials enable us to design the belt features to meet our customers' needs exactly.

Spirally-welded belts are particularly suited for use in the continuous production of flat rubber- and plastic products. Due to the unique patented spiral design there is, especially for wide belts no need for a longitudinal and a cross welding seam. Hence there is also no joining point of welding seams, which in turn has a major positive influence to tolerances and lifetime of steel belts.

Berndorf Band belts excel themselves in their superior surface quality, which results in high quality final products. A world-wide service net guarantees quick availability of highly qualified service specialists.



Industrial area of Berndorf.

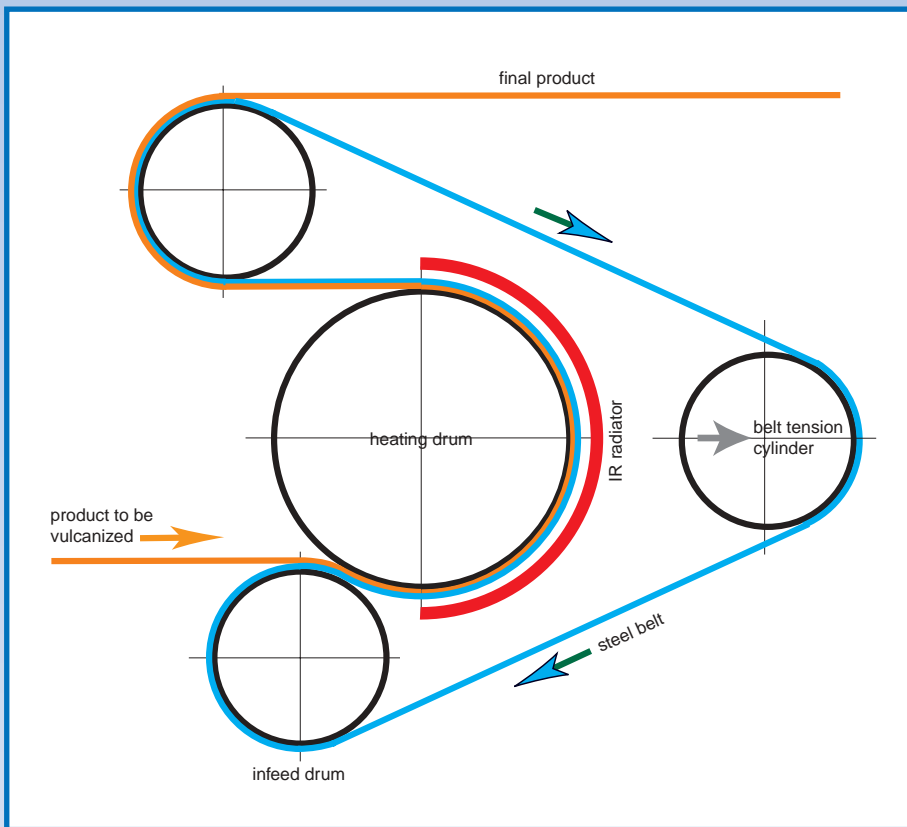
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www.berndorf-band.at



Our maxim: **"Continuous reliability"**

The principle of a rotating vulcanising press



The product is introduced over the infeed drum to the heating drum, and after a 3/4 rotation it is passed over to another deflection pulley.

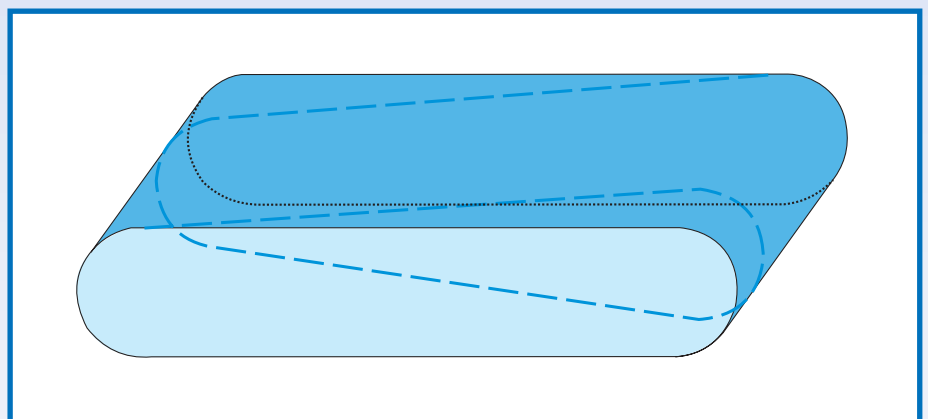
The vulcanisation process is carried out by compressing the product between the tensioned back heated steel belt and the heating drum.

Spirally welded steel belts

Spirally welded steel belts were developed by Berndorf Band specially for wide rotocure presses.

There are no joining points from seams along lengths and widths, so local variances in thickness are eliminated.

Thanks to its construction the spirally welded belt has a longer lifetime than conventionally manufactured belts with welded seams along lengths and widths.



Due to the positioning of the welded seam in a helical line along the whole bandwidth there is no deterioration in physical characteristics of the steel belt, as the welding factor has a minimal influence on the tensile strength, therefore the full resistance to extension of the material is available.

NICRO 52.6 and NICRO 62.5

Berndorf Band has been using both of these martensitic materials successfully since 1983 for example in continuous double belt- and rotocure presses.

Following models are available:

	mill finished	one side ground	both side ground
with longitudinal welding seam		●	●
without longitudinal welding seam	●	●	●
prepared for field welding	●	●	●
endless welded	●	●	●
spiral welding seam		●	

Typical examples of use:

● Mill finished Belt:*)

Products: standard flat rubber- and plastic products, for example transport belts

Advantage: Belt width up to 1.600 mm possible

*) Heat treatment of materials can lead to optically different colours of mill finished surfaces. This is however removed by cleaning brushes during normal operation and does not impair the steel belt quality or the production.

● Belt ground on one side:

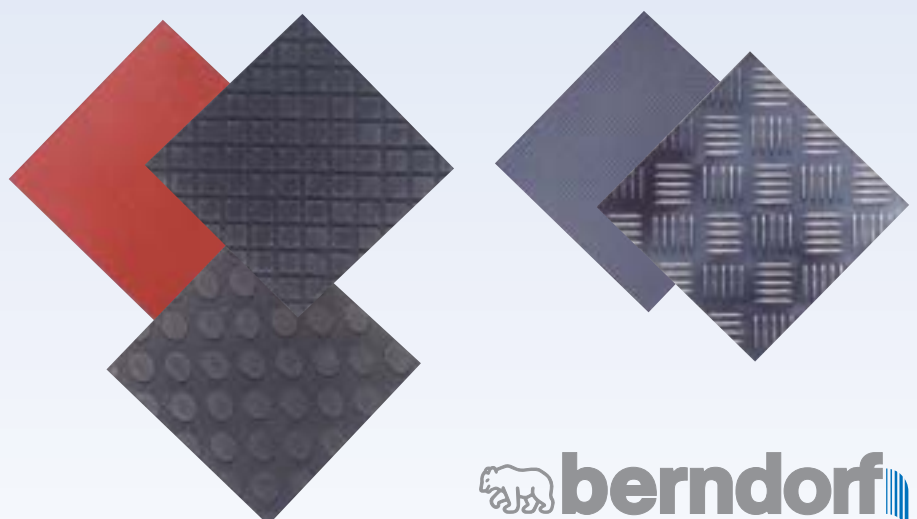
Products: high-quality rubber transport belts, printing backcloths, re-enforced rubber products and products for inflatives

Advantage: very good thickness uniformity

● Belt ground on both sides:

Products: Coating for containers, pipes and reactors in the chemical industry

Advantage: best possible thickness uniformity



Technical Data

Physical and mechanical properties. Typical values.

Material			NICRO 52.6	NICRO 62.5
Type			CrNiCuTi 15 7	CrNiCu 15 5
Similar material		DIN	-	-
		AISI	-	-
Tensile strength	RT	N/mm ²	1550	1450
0.2% yield offset strength	RT	N/mm ²	1500	1410
Hardness		Rockwell HRC	47,5	46,0
		Vickers HV 10	480	460
Elongation 50 mm		%	6	8
Welding factor			0,80	0,75
Fatigue strength under reversed bending stress*)	RT	N/mm ²	700	650
Modulus in elasticity	at 20°C	N/mm ²	200.000	200.000
	at 200°C	N/mm ²	-	-
Density		kg/dm ³	7,74	7,80
Mean thermal expansion coefficient	20-100°C	10 ⁻⁶ m/m°C	10,9	10,8
	20-200°C	10 ⁻⁶ m/m°C	11,5	10,8
	20-300°C	10 ⁻⁶ m/m°C	11,7	11,3
	20-400°C	10 ⁻⁶ m/m°C	-	-
Specific heat		J/g°C	0,50	0,42
Thermal conductivity	at 20°C	W/m°C	16	16
Specific electric resistance	at 20°C	Ohm mm/m ²	0,80	0,77
Max. permissible operating temperature		°C	350	300
		°F	660	572
Tensile strength at max. permissible oper. temp.		N/mm ²	1250	1160
0.2% yield offset strength at max. permissible oper. temp.		N/mm ²	1180	1130

*) 50 % of the test specimens withstand 2,000.000 load cycles.

If not mentioned separately, indicated figures are valid at room temperature.

Data are stated without warranty and are subject to change as a result of technical developments.



Berndorf Band manufacturing workshop

Thickness uniformity of endless welded belts:

mill finished	excluding welded seams	≤ 0,1 mm
area adjoining the welding seam		≤ 0,1 mm
ground on one surface	including welded seams	≤ 0,08 mm
ground on both surfaces	including welded seams	≤ 0,06 mm

Surfaces (typical values)

	mill finished	ground	
R _z	1 µm	2,5 µm	4,0 µm

R_z = average surface roughness

Belt flatness

longitudinal welding seam	shop weld *)	ground	mill finished	+/- 0,05 mm
		ground	ground	+/- 0,05 mm
spiral welding seam	shop weld *)	ground	mill finished	+/- 0,05 mm
cross welding seam	shop weld **)	mill finished	mill finished	+/- 0,1 mm
		ground	mill finished	+/- 0,05 mm
		ground	ground	+/- 0,05 mm
cross welding seam	Field weld**)			+/- 0,1 mm

*) measured with a 75 mm precision ruler at a belt tension of 50 N/mm²

***) measured with a 200 mm precision ruler at a belt tension of 50 N/mm²

Cross welding seam angles: 45°, 60°, 80°, spirally welded