

A photograph of industrial machinery in a factory setting. A large roll of teal-colored material is being processed by a machine with white and grey components. The machine has various rollers and a red emergency stop button. The background shows other industrial equipment and a tiled floor.

Steel belts for the rubber industry

Premium-grade steel belts made by Berndorf Band

Berndorf Band manufactures steel belts that deliver the specific properties needed for the production of rubber and plastic sheet products using, for instance, rotocure presses. Given the extreme loads of stress to which they are subjected, the belts need to feature a design that ensures maximum strength and tolerance as well as a long lifetime. Taking full advantage of their experience in manufacturing steel belts, Berndorf Band has found the perfect material in NC52.6 and discovered the special properties the weld seam of the belt must possess. Both the martensitic materials and the spiral weld seam satisfy even the highest standards, guaranteeing product quality that is second to none. The company also found that NICRO 12.1 and NICRO 31 are ideal for cooling belts in the tire industry and for salt baths for the pretreatment of rubber products. The belts are tailored to the individual requirements of the customer and can be made with or without a longitudinal weld seam, endless or prepared for welding and with a spiral weld seam.

As a technology leader in their field, the Austrian company offers, aside from their high-quality endless steel belts, customer service that is second to none, steel belt machines and effective training centered around the steel belt. Thanks to their mobile training center, the company is also capable of providing customers with training measures on their own premises.



Highlights

- Unrivaled surface quality
- Industry-specific weld seam options
- Outstanding flatness of the weld seam and the belt
- Exceptional operating characteristics
- Superior belt life

Belts ground on one and both sides

Mill finished belts are used for the manufacture of general rubber and plastic sheet products such as conveyor belts or rubber products for the tire industry. Belt widths of up to 2,000 mm can be achieved. Standing out primarily with their high level of thickness steadiness, belts ground on one side provide the basis for the production of high-quality rubber transport belts, printing blankets, reinforced rubber sheet products and inflatable boat sheeting. The manufacture of very thin products - such as rubber linings for tanks and reactors in the chemical industry - call for even greater thickness steadiness and flatness. To guarantee these properties, the belt is ground on both sides.



“We are particularly proud of the method we use to join the belts, which we developed in house and which is required for creating rubber and plastic sheet products: the spiral weld seam. This patented method eliminates the need for the longitudinal and/or cross weld seam and extends the lifetime of the steel belts significantly.”

*Thomas Stückler
Director Sales*

Material			NICRO 12.1	NICRO 31	NICRO 52.6
Type			CrNi 17 7	CrNiTi 13 4	CrNiCuTi 15 7
Similar material no.		DIN AISI	1.4310 301	1.4313 -	- -
Tensile strength	at 20 °C	N/mm ²	1,150	1,080	1,550
0.2% yield offset strength	at 20 °C	N/mm ²	950	1,050	1,500
Hardness		Rockwell HRC	37.0	33.5	48.0
		Vickers HV 10	360	330	480
Elongation 50 mm			18	5	6
Welding factor			0.70	0.95	0.80
Fatigue strength under reversed bending stress*	at 20 °C	N/mm ²	480	480	700
Modulus of elasticity	at 20 °C	N/mm ²	200,000	205,000	200,000
	at 200 °C	N/mm ²	180,000	-	188,000
Density		kg/dm ³	7.90	7.70	7.74
Mean coefficient of thermal expansion	20-100 °C	10 ⁻⁶ m/m °C	16.0	10.8	10.9
	20-200 °C	10 ⁻⁶ m/m °C	17.0	11.2	11.5
	20-300 °C	10 ⁻⁶ m/m °C	-	11.7	11.7
Specific heat		J/g °C	0.50	0.46	0.50
Thermal conductivity	at 20 °C	W/m °C	15	21	16
Specific electric resistance	at 20 °C	Ohm mm ² /m	0.73	0.60	0.80
Max. permissible operating temperature		°C	250	350	350
		°F	480	660	660
Tensile strength at max. permissible operating temperature		N/mm ²	940	970	1,250
0.2% yield strength at max. permissible operating temperature		N/mm ²	770	930	1,180

* 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.