



STEEL BELTS FOR AUTOMOTIVE TESTING APPLICATIONS

Berndorf Band is the foremost producer of steel belts for automotive testing applications. The latest technologies in conjunction with decades of experience have enabled us to consolidate our position as technology leader in this field.

Technology and experience

The manufacture of the first tyre testing belt of high-strength stainless steel in the 1980s marked the start of a continuous development. Berndorf Band was and is also the number one in the production of wide belts for flat-track test stands in wind tunnels and heavily loaded wheel drive belts.

Speeds of up to nearly 300 km/h and the need for extremely accurate running properties place exceptionally high demands on steel belts.

Special manufacturing methods coupled with quality testing ensure that our products will stand the test in practical applications.



This is why leading tyre and motor vehicle manufacturers put their trust in our products. Steel belts from Berndorf Band are even widespread in Formula 1 racing, the king class of motor sports.

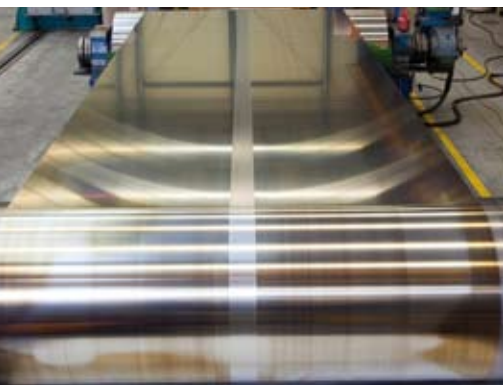
Continuous Reliability

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Belt Types



Berndorf Band manufactures steel belts in a variety of sizes. Steel belts for automotive testing applications are available in lengths of about 1.5 m upwards, 200 mm wide and 0.3 mm thick. In practice lengths of over 20 m, widths of over 3 m and thicknesses of up to 1.0 mm are commonplace today. Steel belts like those required in Formula 1, for instance, are welded together longitudinally in order to achieve widths of over 1,500 mm.

As far as surface quality is concerned, a slightly rough, cold-rolled surface offers a sound basis for automotive testing applications. However, ground surfaces can also be provided, or any other surface quality that may be required.

The geometrical characteristics of such belts are critical in view of the extremely accurate running properties required. Optimal flatness and straightness are of decisive importance for precise running and maximum operating safety.

Some applications even require special coatings on the belt surface. Berndorf Band has years of experience in applying such coatings, which can be put on to both new and used belts.

Service & Maintenance

When it comes to service and maintenance, Berndorf Band has adopted a comprehensive approach in order to provide optimal support for its customers even during operation.

The company has not only developed special repair methods and equipment, but also seminars, training sessions and lectures designed to impart Berndorf Band's specialized knowledge of steel belts and practical experience to the company's customers.

The spectrum of maintenance services ranges from on-site inspections and repairs to general overhauls at the factory in Berndorf, including the replacement of worn-out coatings. Our ultimate objective is always as far as possible to restore each belt to mint condition. It is therefore quite possible for a belt to be overhauled several times during its lifetime.

All this contributes to a long service life for the belt, which is of direct benefit to the customer.



(c) IABG mbH - IABG Flachbahnreifenprüfstand Flat-Trac (R) III CT - München/Ottobrunn



Technical data

Physical and mechanical properties.
Typical values.

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

Tremendous importance is attached to materials and their properties in automotive testing applications.

High belt speeds, short belt lengths and compact configurations with small deflection drum diameters mean a high level of tension coupled with high dynamic loading. This is why Berndorf Band exclusively uses top-quality, high-end materials like NICRO 52.6.

This precipitation hardened stainless steel combines high strength with the excellent toughness achieved by means of special heat treatment. It goes without saying that we carry out this heat treatment in house, allowing us to establish extremely accurate parameters for the above-mentioned materials properties.

*) 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.