

Steel Belts for the Automotive Industry

Automotive Testing



Your Road on Our Steel Belts!

The Berndorf Band Group is the world's leading supplier for Steel Belts, Belt Systems and worldwide service. Identifying the latest trends and developments of the industry and integrate them into our product portfolio is part of the Berndorf Band Group philosophy. For this reason, research and innovation are especially important in Berndorf, to be able to adapt Steel Belts and Belt Systems to the individual customer requirements.

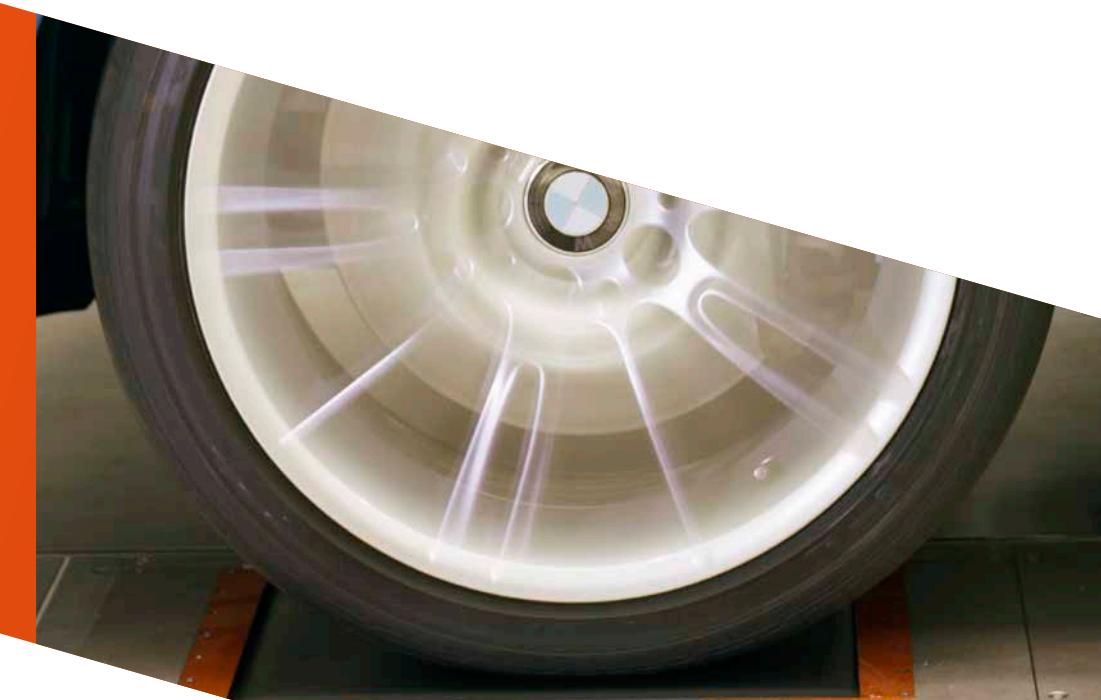
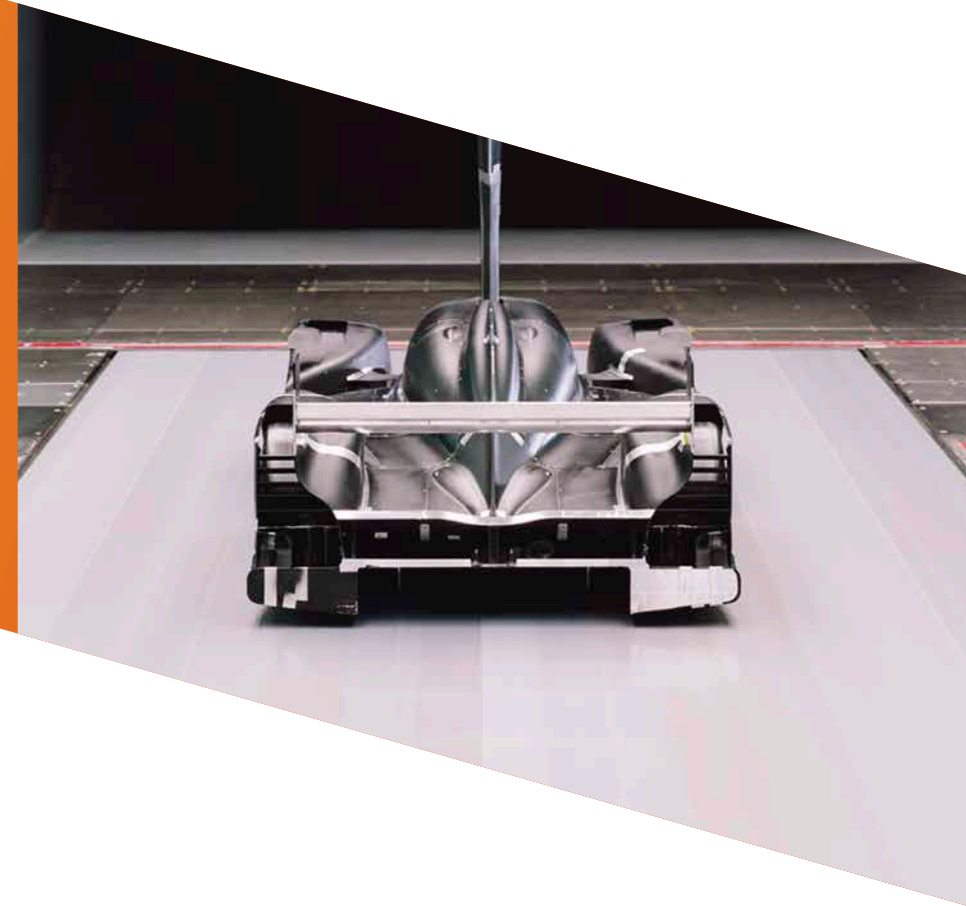
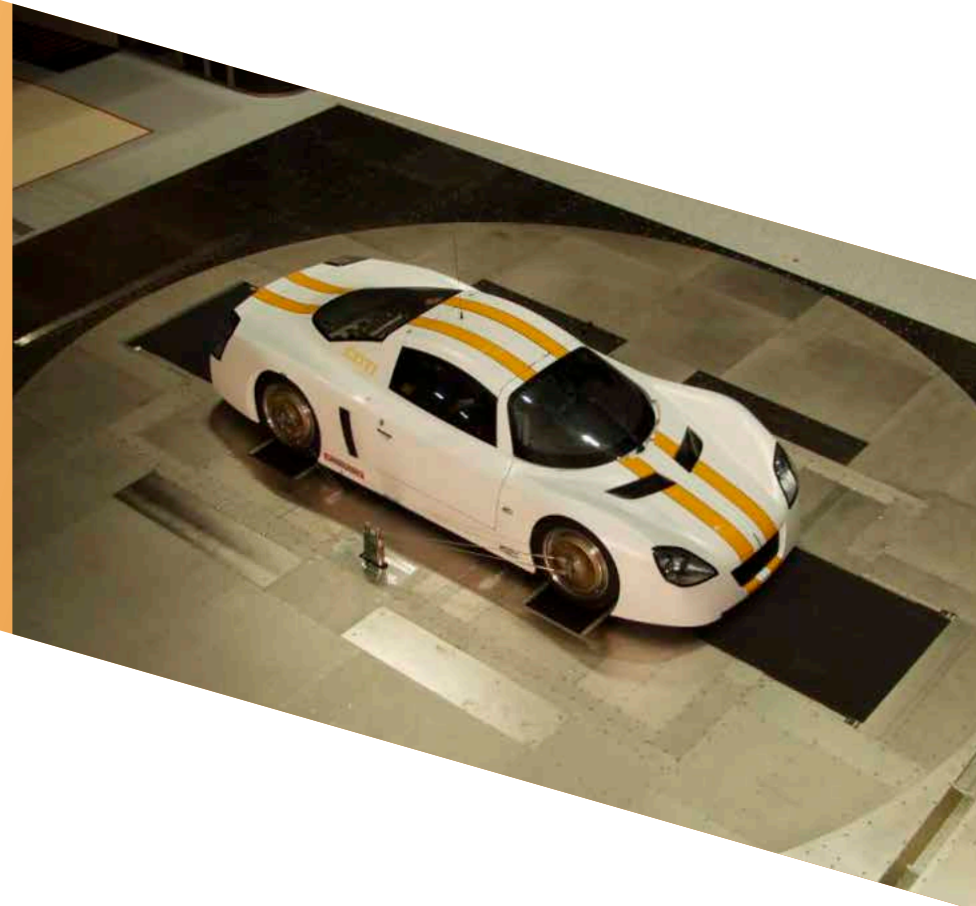
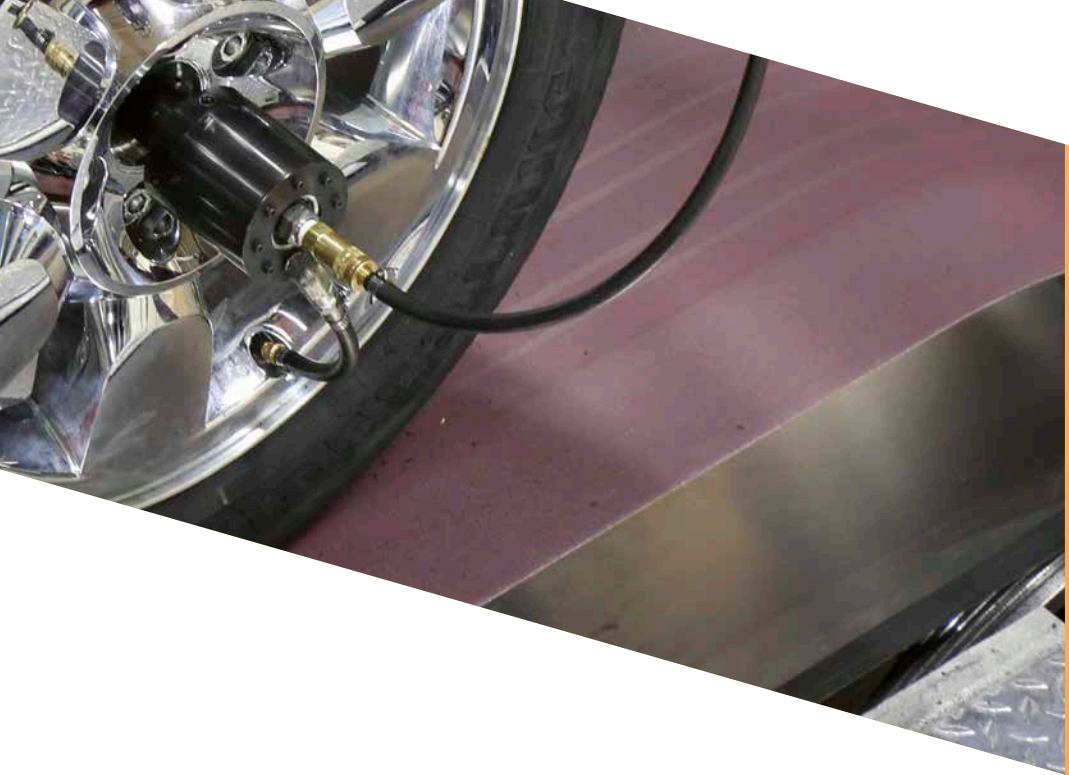
Esteemed for its variety of Surface Coatings, the Berndorf Band Group manufactures high quality Steel Belts, which are operating at speeds up to 350 km/h (217 mph). The combination of customer-specific Steel Belt Coatings and robust Berndorf stainless Steel Belts, simulates real conditions for all kinds of test situations in the field of vehicle development.

Real Testing Conditions

Due to the flat rolling area and the stiffness of the Steel Belt, realistic test simulations can be achieved. In addition, the dimensions of the Steel Belts can be adapted to be suitable for all kind of test facilities.

Surface Coatings

In order to be able to simulate different road surfaces, we offer an extensive portfolio of Steel Belt Coatings. Berndorf Band Group experts are constantly working on new Surface Coatings and are also available for the development of customized surface requests.



Test Simulations According to Your Requirements

Issues such as fuel consumption, driving behaviour, acoustics and safety are considered as top priorities in the development of motor vehicles and tires. For this reason tests related to automobiles are highly relevant worldwide.

Due to tight manufacturing tolerances, Berndorf stainless Steel Belts have an extended belt lifetime. Our Steel Belts with the highest quality standards allow a high number of test cycles under extreme stresses and speeds up to 350 km/h (217 mph). Therefore they are primarily used for all types of automotive test simulations.

Berndorf Steel Belts can be applied with a big variety of Surface Coatings. The different surfaces enable tests to be carried out under realistic conditions according to the requirements of the customers.

Further Steel Belt Coatings are constantly developed by our R&D-Team in cooperation with customers.



Increased Belt Lifetime Thanks to Our Special Manufacturing Processes

Special materials are needed to meet the particular demands of the automotive industry. NICRO 52.6 is such a material, which has been developed and optimised by the Berndorf Band Group over many years to meet the high standards of vehicle development tests.

The high-strength NICRO 52.6 is characterised by excellent tensile strength combined with high elongation. The Berndorf Band Group's special heat and surface treatment concept also optimises the mechanical properties of the Steel Belt. As a result of this special Berndorf manufacturing process the belt lifetime expands.

Best running characteristics in terms of flatness, straight running and belt geometry even under severe test conditions are further advantages of the premium steel belt material NICRO 52.6.

Belt Geometry

Material	Width in m in		Length in m ft		Thickness in mm in	
	Min.	Max.	Min.	Max.	Min.	Max.
NICRO 52.6	0.2 7.87	9.0 354.33	1.4 4.59	270 886	0.3 0.012	3.5 1.378

The belt dimensions can be individually adapted to specific customer requirements.

ADVANTAGES

- » Keyplayer with many years of experience in the automotive industry
- » Vehicle development thanks to excellent Steel Belt characteristics
- » Speeds up to 350 km/h (217 mph)
- » Broad portfolio of specially developed Surface Coatings

« The Rolling Road System with Berndorf Steel Belts is a key component in our state-of-the-art wind tunnel for aerodynamic development. Here we're glad to have Berndorf as a reliable partner beside us who claims the same quality standards as we demand of ourselves.

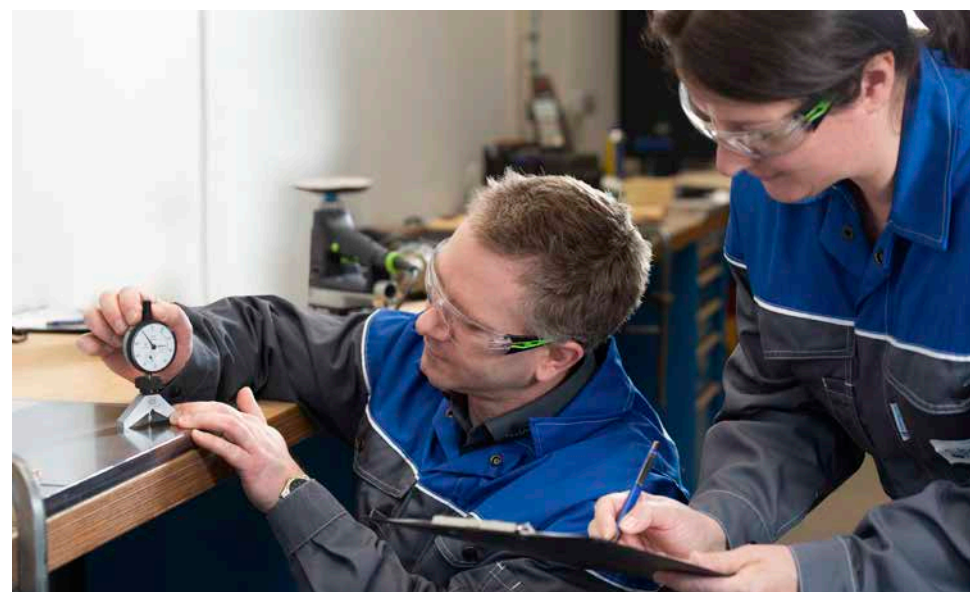
Steffen Schrodt
Managing Director, Sauber Aerodynamics

Minimized Downtimes and Outstanding Service Quality

With our comprehensive training program, we offer our customers the opportunity to train their employees and to minimize unplanned downtimes and maintenance work. With these trainings the basic understanding of Steel Belts is strengthened, damages are analyzed and repair methods are trained. After the course it is easier to assess damages in time and reduce downtimes. In order to conduct minor repairs and maintenance directly on the test stand, an automotive tool kit has been developed by Berndorf Band Group. The tool kit contains all required tools and materials for a successful factory repair on site.



Another highlight of the Berndorf Band Group portfolio is the steel belt repair for automotive Steel Belts in our headquarters in Berndorf. Steel Belts are reconditioned to an improved quality standard and coatings can be replaced quickly and easily in Berndorf. The maintenance concept allows us to offer our customers the highest quality standards and extended belt lifetime combined with maximum flexibility.



Steel Belts for the Automotive Industry - Physical and Mechanical Properties. Typical Values.

Material			NICRO 52.6
Type			CrNiCuTi 15 7
Similar material	DIN AISI		- -
Tensile strength	at 20 °C at 68 °F	N/mm ² psi	1,550 224,800
0.2 %-offset yield strength	at 20 °C at 68 °F	N/mm ² psi	1,500 217,600
Hardness		Rockwell HRC Vickers HV 10	48.0 480
Elongation 50 mm 1.97 in		%	6
Welding factor			0.80
Fatigue strength under reversed bending stress*	at 20 °C at 68 °F	N/mm ² psi	700 101,500
Modulus of elasticity	at 20 °C	N/mm ²	200,000
	at 200 °C	N/mm ²	188,000
	at 68 °F at 392 °F	ksi ksi	29,000 27,300
Density		kg/dm ³ lb/in ³	7.74 0.28
	20-100 °C 20-200 °C 20-300 °C 20-400 °C	10 ⁻⁶ m/m°C 10 ⁻⁶ m/m°C 10 ⁻⁶ m/m°C 10 ⁻⁶ m/m°C	10.9 11.5 11.7 -
Mean coefficient of thermal expansion	68-212 °F	10 ⁻⁶ in/in°F	6.1
	68-392 °F	10 ⁻⁶ in/in°F	6.4
	68-572 °F	10 ⁻⁶ in/in°F	6.5
	68-752 °F	10 ⁻⁶ in/in°F	-
Specific heat		J/g°C BTU/lb°F	0.50 0.12
	at 20 °C at 68 °F	W/m°C BTU/hr ft°F	16 9.3
Specific electric resistance	at 20 °C at 68 °F	Ω mm ² /m μΩ in	0.80 31.50
	Min. permissible operating temperature	°C °F	- -
Max. permissible operating temperature		°C °F	350 662
	Tensile strength at max. permissible operating temperature	N/mm ² psi	1,250 181,300
0.2 %-offset yield strength at max. permissible operating temperature		N/mm ² psi	1,180 171,100

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 omissions 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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