



Steel belts for the automotive industry

Premium-grade steel belts made by Berndorf Band

Guaranteeing the safety of all traffic participants is the foremost priority in the development of motor vehicles and tires. This is why tests are an indispensable tool for the global automotive industry. For instance, the verification of the quality and material properties of tires mandates that the road conditions simulated for the tire tests resemble the conditions found in the real world as closely as possible.

The test systems used for these testing applications are composed of Berndorf's stainless steel belts, which can sustain speeds of up to 300 km/h. Berndorf Band's specially engineered coatings create a belt surface that accurately replicates natural road conditions, making it possible, for instance, to exactly analyze the abrasion resistance of the tires. Thanks to their unparalleled geometry, the belts designed in Berndorf deliver unsurpassed operating characteristics. Steel belts intended for automotive testing applications are available in dimensions starting at 1.5 m in length, 200 mm in width and 0.3 mm in thickness.



©IABG mbH - IABG flat track tire test stand Flat-Trac® III CT Munich /Ottobrunn

Highlights

- Stellar operating characteristics as well as perfect flatness and straightness
- Ultimate strength and stability
- Long lifetime
- Longitudinal and spiral weldedweld seams
- Different sizes and belt dimensions
- Specially developed belt coatings

High-end steel belts from Berndorf

To meet the special requirements of automotive testing applications, Berndorf Band furnishes their steel belts with a special high-end material as early as the manufacturing stage: Nicro 52.6. This material is set apart by its high strength and outstanding resilience. The material owes its singular characteristics to many years of research and development the company has been investing in their steel belts. The know-how they have obtained in the process has enabled the company to develop a special curing process for the stainless steel they use. The material properties needed are ensured by controlled tempering.



Five Belt Rolling Road System

“Successful teams in the top tiers of car racing and Formula 1 as well as countless automotive manufacturers rely on the Berndorf steel belts. Customers operating in these fields use our belts in different widths for their elaborate wind tunnel tests.”

Thomas Stückler
Sales Director

Material		NICRO 52.6	
Type		CrNiCuTi 15 7	
Tensile strength at 20 °C		1,550 N/mm ²	
0.2% yield offset strength at 20 °C		1,500 N/mm ²	
Hardness	Rockwell HRC	48	
	Vickers HV 10	480	
Elongation 50 mm		6 %	
Welding factor		0.80	
Fatigue strength under reversed bending stress*	at 20 °C	700 N/mm ²	
Modulus of elasticity	at 20 °C	200,000 N/mm ²	
	at 200 °C	188,000 N/mm ²	
Density		7.74 kg/dm ³	
Medium heat transfer coefficient	at 20-100 °C	10 ⁻⁶ m/m °C	10.9
	at 20-200 °C	10 ⁻⁶ m/m °C	11.5
	at 20-300 °C	10 ⁻⁶ m/m °C	11.7
Specific heat		0.50 J/g°C	
Heat conductivity at 20 °C		16 W/m°C	
Specific electric resistance at 20 °C		0.80 Ω mm ² /m	
Max. permissible operating temperature		350 °C 662 °F	
Tensile strength at max. permissible operating temperature		1,250 N/mm ²	
0.2% yield strength at max. permissible operating temperature		1,180 N/mm ²	

*50 % of the test specimens withstand 2,000,000 load cycles.

Typical values. Subject to change due to technological progress. Errors and omissions excepted. If not otherwise specified, the values given apply at room temperature.