



BONASTAR[®]4BD | product specification

Rolling stock wheels are exposed to extreme loads and if we want to secure their long lifespan, we have to use first-class materials with well-balanced mechanical properties.

BONASTAR[®]4BD (for brake disc) is the answer to this challenging situation. Thanks to our extensive experience in the field of both material and design, this specially developed material achieves wheel lifespan levels exceeding 2,000,000 km.

Key features

- Approximately 30% greater life in mileage terms compared to wheels made of standard EN grades
- Greater resistance against Rolling Contact Fatigue (RCF) and hence also against the development of shelling on the wheel tread
- High operation reliability
- Ultimately reduction of the wheelset Life Cycle Costs (LCC) during the rolling stock life and operation

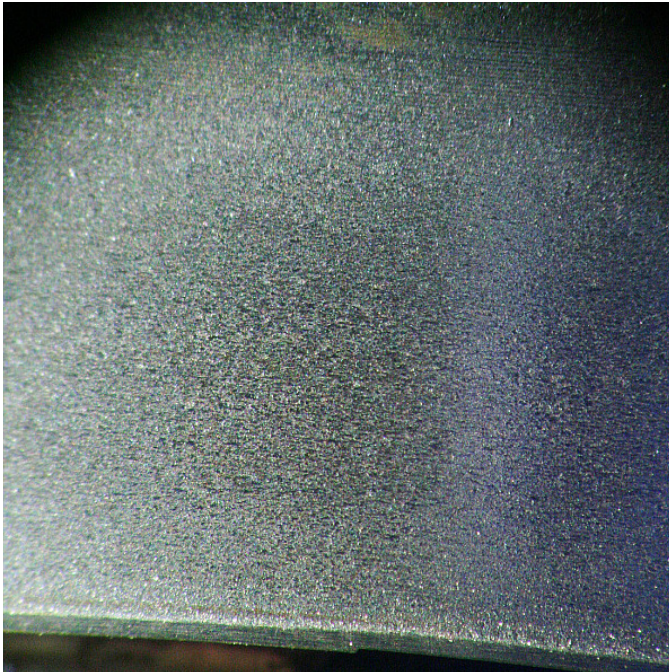


GHH-BONATRANS
Pioneers of wheelset solutions

Verification

- Repeated detailed tests of the material mechanical properties and parameters have been performed.
- Detailed material tests have been performed.
- Material fatigue tests have been performed both on small test specimens as well as on real-size wheels.
- Laboratory material tests have been performed on Twin Disc test equipment to test the wear and sensitivity to RCF.

BONASTAR®4BD



Application

- All types of passenger, locomotive and freight rolling stock including high-speed, where primary braking is disc based

Approval

- Applicable according to TSI for passenger, locomotive and freight rolling stock

ER8

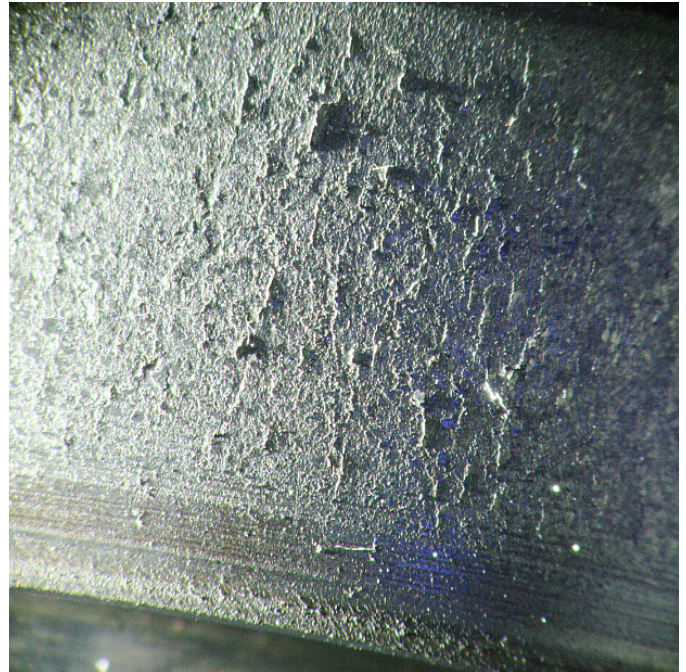


Photo documentation of the contact surfaces after 50,000 cycles of the Twin Disc tests applying a 1,500 MPa contact pressure, with slippage 0.9 %

Grade	Change in the sample diameter (mm)	Mass reduction (g)	Sample cross extension (mm)
BONASTAR®4BD	0.471	2.88	1.39
ER8	0.495	2.93	1.44

Table comparing the behaviour of the two materials on the Twin Disc test equipment.