

SAFETY AND LONG SERVICE LIFE



FREIGHT



GHH-BONATRANS
Pioneers of wheelset solutions

Safety and long service life under extreme conditions

Careful optimization of wheel and axle design, its assembly, steel grades, noise emissions, protective coatings, and many other aspects, makes GHH-BONATRANS able to design, produce, test and homologate any type of freight railway wheelset. The ones with stress optimized wheels, exposed to high thermal and mechanical loads, typical for wagons using wheelsets braked by shoes. Also for the ones facing high RCF loadings on wagons with axle mounted brake discs. Integration of noise absorbing solutions is just another option for rail-bound operation passing through densely populated areas.



Why choose our solutions for Freight Transport?

- Low residual stress - reduces the risk of crack(s) initiation and growth
- Low deformations - increase safety against derailment of the vehicle in operation
- High axle loading capacity - for heavy haul application
- High resistance against thermal loading - suitable for composite shoes (K, L as well as LL)
- Benchmark - in Europe most commonly used wheels for new rolling stock as well as in maintenance
- Traceability - we comply with the latest product traceability requirements
- GHH-BONATRANS is the largest European producer of freight wheelsets, wheels and axles

Selected customers



Safe and reliable freight wheels

GHH-BONATRANS offers a wide range of wheel designs tailored for customers' needs and verified by tests as well as proven by certificates issued by all European railways as well as authorities and/or by the UIC committee or TSI. And most importantly, they have passed hundreds of millions of kilometers in safe and reliable operation.

Three generations of stress optimized railway wheels from BONATRANS - 1st: **BONA314**, **BONA324**; 2nd: **BONA318**, **BONA319**; 3rd: **BONA313**, **BONA320**; are dedicated especially for freight wagons equipped with tread brakes.

Wheels subjected to greater thermal loading from braking using composite blocks (K, L as well as LL), and reduced noise emission limits challenged once again our ability to optimize wheel design, steel grade, including noise dampers on the wheel. Having implemented the most advanced calculation and testing methods GHH-BONATRANS has developed the 3rd generation of very low-weight, low-stress and low-noise freight wagon wheel, called **BONA313** and **BONA320** with high efficiency noise damping rings **BONASILENCE®R+**. The wheels **BONA313** and **BONA320** are made from highly innovative steel grade **BONASTAR®** which is characterized by higher lifespan which is reached through improved resistance against wearing and rolling contact fatigue degradation.

Protective axle coating systems

BONACOATc3

- Operationally verified coating system (used by key customers over a long period)
- DB Approval (BN 918300 bl.12, DBS 918301) OeBB (Module 9)
- Suitable solution for common wheelsets, both for new freight wagons as well as for maintenance
- Thermoindication coating system
- High thermal resistance, suitable also for wheels braked by composite blocks



BONACOATc2

- The coating system is derived from high-speed protection for Class 1 (and fully compliant with EN 13261 Class 2)
- Application thickness from 200 µm
- Outstanding resistance to mechanical damage according to EN 13261
- Unique anticorrosive protection against corrosive media
- Coating system developed for axle protection, mostly used in combination with standard wheel coating system **BONACOATc3**



Low maintenance wheelset with additional safety margins

The **BONAESFA** axle seat and axle body have min. 10 % higher safety margins compared to common freight axle/wheelset design.

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