

SAFETY AND LONG SERVICE LIFE



FREIGHT



GHH-BONATRANS
Pioneers of wheelset solutions

Safety and long service life in extreme conditions

GHH-BONATRANS is the largest European producer of wheelsets, wheels and axles, backed by strong expertise in development and design. Many of our wheelset designs have set industry benchmarks, not only in Europe but globally, thanks to their exceptional safety, reliability and service life. Half of modern freight wagons manufactured in Europe run on our wheelsets.

We specialize in wheelsets with extended service life, helping operators reduce operational and maintenance costs while also minimizing environmental impacts. GHH-BONATRANS provides complete wheelset solutions built on continuous optimisation of wheel and axle design and on research in steel grades, noise emission reduction and surface protection. We are fully equipped to design, manufacture and test any type of freight railway wheelset.

Our expertise includes wheelsets with stress optimised wheels that withstand high thermal and mechanical loads in tread-braked freight wagons. We also produce wheels with high resistance to rolling contact fatigue (RCF) for freight wagons equipped with axle-mounted brake discs. Additionally, we provide comprehensive solutions to mitigate rolling and squeal noise, enabling quieter rail operation in densely populated areas.



Why choose our freight wheelset solutions?

- **Extended service life & low life cycle costs (LCC)** – enhanced steel grades and advanced technologies reduce costs over the product service life
- **Exceptional safety and reliability** – our wheels are not subject to JNS and BAV operational restrictions
- **Optimised wheels for composite brake blocks (L, LL, K)**
- **High thermal & mechanical resistance** – designed for extreme loads and stable performance in demanding operation
- **Mutual interchangeability** with other wheels and axles

Key references



Safe and reliable freight wheels

Each operation has specific requirements, such as payload maximization, low noise emissions, and resistance to demanding operating conditions (e.g. Alpine routes, Nordic climates). With decades of experience in wheel development and manufacturing, GHH-BONATRANS supplies TSI certified, stress optimised freight wagon wheels for axle loads of 23.5 t and 25 t to meet these diverse operational requirements.

- **BONA830EM** – Modern wheel with a high safety factor, optimised weight and low noise, designed for both universal use and extreme mechanical and thermal loading
- **BONA318** and **BONA319** – Designed primarily for extreme mechanical and thermal loading
- **BONA313** – Lightest wheel (313 kg) in the 25 t axle load segment, proven safe design
- **BONA320** – Very low noise wheel equipped with high-efficiency **BONASILENCE®R+** noise damper

Exceptional service life and low life cycle costs (LCC)

Our latest wheel designs **BONA830EM**, **BONA313** and **BONA320** are manufactured exclusively from the improved **BONASTAR®ER7** steel grade (compliant with EN 13262), which delivers extended service life.

BONA830EM wheel goes even further. The version with **830 mm** limit wear groove can achieve a mileage of up to **1,200,000 km** under favourable operating conditions. This then makes it possible to combine wheel and bearing replacement during the IS3 overhaul.

Advanced protective coatings

BONACOAT® is a family of high-performance protective coatings with exceptional durability across all axle, wheel, and wheelset surface protection classes.

Compliant with EN 13261 and approved by DB (BN 918300 bl.12, DBS 918301) and ÖBB (Module 9), **BONACOAT®** offers:

- High protection against mechanical damages
- Exceptional resistance to corrosion and chemical agents
- Compliance with flammability and toxicity limits
- Service life exceeding common axle maintenance intervals, resulting in a lower carbon footprint compared to other coating systems.

Low-maintenance wheelset with additional safety margin

BONAESFA axles are designed to meet the European Standard Freight Axle (ESFA) requirements. Thanks to an optimised axle seat and axle body design, they provide at least 10% higher safety margin compared to conventional freight axle and wheelset designs.

Combined with the **BONA830EM** wheel, this solution sets a new benchmark in safety and operational reliability while reducing life cycle costs (LCC) and carbon footprint.

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