



BONA830EM | product specification

BONA830EM wheels are the fourth generation of stress-optimised wheels from the BONATRANS design school for tread braked freight wagons. It is a universally applicable wheel of modern design for axle loads of both 23.5 t and 23 t. It is designed for extreme mechanical and thermal loading. It is therefore particularly suitable for the trans-European transport, container and pocket wagons, swap body wagons and other applications, such as operation in Nordic conditions and operation in mountainous areas with frequent and intensive tread braking, frequent negotiation of curves with small radii, etc. Thanks to the highest factor of safety in its class, the **BONA830EM** wheel can manage what other wheels cannot. In addition, it brings savings to the operator thanks to its significantly extended service life.

Key features

- “EM” = Extended Mileage – long service life thanks to the possibility to operate the wheel to the diameter of 830 mm and the enhanced BONASTAR®ER7 steel grade according to EN 13262
- The highest factor of safety in its class
- Mutual interchangeability with other optimized wheels
- Lower carbon footprint thanks to extended service life
- Optimum wheel for wagons with composite brake blocks (K, L, LL)



GHH-BONATRANS
Pioneers of wheelset solutions

Exceptional service life and low Life Cycle Costs (LCC)

Customer requirements for substantially longer service life compared to commonly used wheels on the market were considered in the wheel design.

“EM” in the name refers to Extended Mileage (service life), which we achieve through the possibility to operate the wheel to the diameter of 830 mm and the enhanced **BONA^{STAR}ER7** steel grade.

The number “830” in the name refers to the possibility to operate the wheel to the diameter of 830 mm (if the wagon design allows it) compared to the common 840 mm. This means at least 10 % longer service life compared to wheels with the limit wear groove at the diameter of 840 mm.

The wheel service life is further extended by the use of the enhanced **BONA^{STAR}ER7** steel grade that meets the requirements of TSI and EN 13262 and has substantially higher resistance to wear and damage due to rolling contact fatigue (RCF). Compared to the common ER7 steel grade, wheels from this enhanced steel grade achieve up to 30% longer service life.

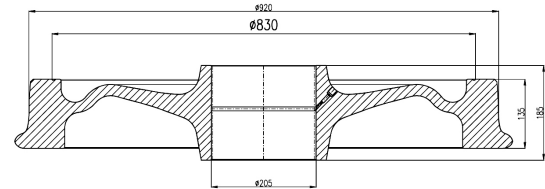
The optimised weight increases transport efficiency and reduces energy intensity.

Mutual interchangeability with other wheels

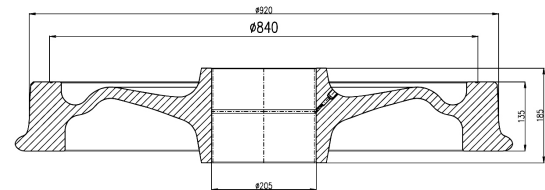
We supply **BONA830EM** wheels for axle loads of both 23.5 t and 25 t. For already operated wagons, where the existing design of the bogie (or the brake) does not allow the advantages of the 830 mm limit wear groove, a wheel version with the common 840 mm limit wear groove is approved.

Due to this, and also due to mutual interchangeability with other types of stress optimised wheels, it is possible to benefit from the high factor of safety and the extended service life of the **BONA830EM** wheel in virtually any newly manufactured or already operated wagon.

Variant with the 830 mm limit wear groove



Variant with the 840 mm limit wear groove



Norms and certificates

- TSI WAG, subsystem 'rolling stock – freight wagons' certificate
- Production is carried out in accordance with EN 13262:2020
- The wheel design corresponds to EN 13979-1

