



Photo: Stadler

BONAE-LOCK[®]L | product specification

Radially flexible (hyperelastic) resilient wheels **BONAE-LOCK[®]L** built on the proved series of **BONAE-LOCK[®]M** resilient wheels and complement the offer of BONATRANS designed wheels for trams and LRV.

E-LOCK key benefits reduce LCC and carbon footprint:

E = easy lock / easy disassembly and assembly of the wheel / easy tyre replacement;

E = economic, longer service life due to innovative **BONASTAR[®]** steel grades;

E = environmental, damping of noise and vibrations, thanks to rubber elements between wheel center and tyre, and optional **BONASILENCE[®]** noise damper.

Due to E-LOCK L = **low stiffness** of the resilient wheel, which is achieved thanks to whole design of the resilient wheel and rubber segments, **BONAE-LOCK[®]L** offers higher suspension comfort than **BONAE-LOCK[®]M** type.

Key features

- High damping of rolling and squealing noise
- High mileage and low LCC due to innovative steel grades
- Low radial stiffness of the wheel increases passenger comfort
- Positive effect on rail vehicle service life
- Low carbon footprint due to long service life and selection of materials
- BONATRANS ECO-design



GHH-BONATRANS
Pioneers of wheelset solutions

Application

BONAE-LOCK®L wheels are suitable especially for modern low-floor trams with wheels directly mounted on bearings and for all types of LRV.

Thanks to high radial stiffness (20 kN/mm) and reduction of dynamic load, **BONAE-LOCK®L** wheels increase the running comfort for passengers. They also protect the rail vehicle from dynamic impacts, which has a positive effect on its service life. At the same time, the dynamic load acting on buildings around the track is reduced.

Tyre replacement

In most trams with inner or outer bearings, the tyre with rubber segments can be replaced without the need of disassembly from the bogie.

BONATRANS ECO-design

Our aim during development of **BONAE-LOCK®L** was mainly to further increase the passenger comfort during transport, compared to resilient wheels with medium stiffness. Thanks to the design solution and selected materials (100% recyclable), **BONAE-LOCK®L** is the ideal solution for silent, environmentally friendly and safe public transport. Especially cities with valuable historical buildings around the track will appreciate higher damping of dynamic impacts acting on foundations of buildings during passage of the vehicle.

Reduction of noise and vibration in cities

BONAE-LOCK®L resilient wheels achieve high effect of vibration damping even without combination with the flange lubrication system.

For even more efficient noise reduction, we supply the wheels with some of the **BONASILENCE®** damping systems that are specially designed for urban transport.

BONASILENCE® noise dampers achieve reduction of the wheel rolling noise by up to 8 dB(A). Moreover, the most unpleasant squealing noise is up to 30 dB(A) lower for wheels equipped with **BONASILENCE®** noise dampers than for wheels without noise dampers, especially in significant frequency bands.

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Innovative technology

We standardly manufacture the tyres for resilient wheels from innovative steel grades **BONASTAR®B6** or **BONASTAR®B7** that achieve higher mileage compared to common steel grades.

The possibility to use the **BONASILENCE®** noise dampers repeatedly during replacement of the worn tyre reduces Life-Cycle Costs (LCC).

Service

We offer to operators of rail vehicles with **BONAE-LOCK®L** wheels the possibility of providing turnkey service of resilient wheels by our experienced service team.

Technical specification

Wheel dia (new):	510 – 700 mm
Max. wheel load:	40 – 60 kN
Radial wheel stiffness:	20 kN/mm
Maximum speed:	up to 120 km/h

BONAE-LOCK®L design

