

The **braking behavior** of freight cars with „**quiet**" **brakes** such as LL-shoes and K-shoes, when operating sometimes **differs considerably** from the one of the still widely used GG brake shoes.

„Quiet" brakes produce smooth wheel treads which lead to low static friction values with a **higher risk of slipping/flat spots**.

BRAKE SYSTEM

In particular, **BRAKES WITH LL-SHOES** as a substitute for the GG shoes show a delayed braking behavior at lower speeds and/or low block temperatures and/or wet weather conditions.

The **BRAKE WITH K-SHOES** shows predominantly a inconspicuous behavior.

BRAKE FORCE

SS – BRAKE POWER and loaded velocity of more than 100 km/h increase the differences (and abnormalities).



CONSEQUENCES

The **premature wear/damage** of running surfaces leads to **considerable costs and time expenditure**:

Retirement, workshop supply, unscheduled repairs and downtimes generate additional costs, transport breakdowns and delays in your delivery process!

We therefore strongly recommend that you comply with and pass on the following instructions for use.

LEGEND

BRAKE TYPES:

- **LL brake shoe** (low noise, low friction – silent)
- **K brake shoe** (composite – silent)
- **GG brake shoe** (cast iron – normal)

BRAKE POWER:

- **ss brake settings**
(maximum speed 120 km/h)
- **s brake settings**
(maximum speed 100 km/h)



WHEN IS THERE A PARTICULAR DIFFERENCE IN BRAKING BEHAVIOR?

The response behavior of freight wagons with "quite" brakes requires **special care and anticipatory braking behavior**, particularly in the case of:



"Mixed" freight trains
with GG, LL, K (and /or)



Wet rails /
damp weather



Low temperatures /
cold brake shoes

PREVENTIVE MEASURE FOR OPERATING WAGONS WITH "QUIET" BRAKE SHOES

- ! Strict adherence to the **speed limit** of 100 km/h for trains with „S" brake settings.
- ! Whenever possible, **avoid** to operate trains with **mixed brake equipment**.
- ! **Avoidance of wagons with „SS" and „S" brake settings in one train.**
- ! The braking power of the SS brake at 100 km/h loaded is 15 to 20% higher (+8 to 10% for empty wagons) and requires a correspondingly highly sensitive braking performance.
- ! Strict adherence to the **operating instructions** according to UIC VBK-S (LL) points 2. 1. 2 and 2. 1. 3 (brake operation at $v < 50$ km/h or under winter conditions) for LL-braked wagons.
- ! Strict compliance **with filling and dissolving times** according to DB RiLi 915. 0107 or VDV regulations (in DE) or comparable operating specifications in other countries.

Compliance with these measures can prevent extensive additional costs and delays in operating and transport processes.

If you have any further questions about the proper operation of quiet brake shoes, please contact service@interfracht.cz