

VTG AG POLICY BRIEF

March 2017

NOISE REDUCTION – A KEY TO RAISING THE ACCEPTANCE OF RAIL

Dear Sir or Madam,

It is very important to VTG, the biggest rail freight car hire company in Europe, to make rail more attractive. One important way to do so is to **REDUCE NOISE POLLUTION** caused by freight cars. Why? Because quieter wagons drive greater acceptance of rail freight transportation by the public at large. Aware of this, VTG started work on technical innovations to reduce its wagons' noise emissions **AS FAR BACK AS 2004**. We also expressly welcome the planned introduction of legislation to reduce noise pollution. The important thing, though, is that this must be done properly: The needs for **NOISE REDUCTION AND COST-EFFECTIVENESS** must be reconciled in such a way that rail transportation remains able to compete with



road haulage. This issue of our policy brief outlines how we believe that can be done.

I wish you an enjoyable and informative read!

Dr. Heiko Fischer
Chief Executive Officer



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The fitting of railcars with quiet brake pads is supported by the European Union

10 dB

is how much quieter conversion makes a wagon. To the human ear, that is equivalent to **CUTTING NOISE LEVELS IN HALF.**

VTG'S COMMITMENT – OUR CONTRIBUTION TO NOISE REDUCTION

VTG takes the concerns of people who live near rail freight lines seriously. That is why we have been working hard to reduce noise pollution since as far back as 2004. Together with the industry as a whole, we have undertaken a voluntary commitment only to deploy quiet freight cars in Germany as of the end of 2020. Since 2004, all our new railcars have been fitted with quiet composite brake pads. Since 2007, we have also added new railcars with disk brakes.

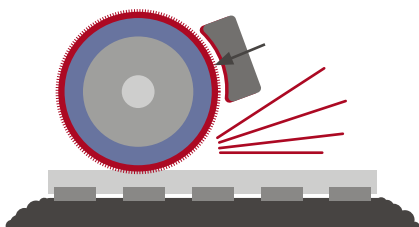
WHAT ARE COMPOSITE OR „LL“ BRAKE PADS?

Composite brake pads, also known as low-noise, low-friction (or „LL“) brake pads, are **SIGNIFICANTLY QUIETER** than the cast iron brake pads used as standard in the past – which explains why they are also called „whisper brakes“. The use of composite materials **REDUCES THE ROUGHNESS OF THE WHEEL SURFACES**, thereby noticeably attenuating the wagon's rolling noise.

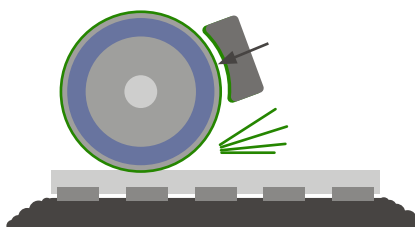
WHAT ARE DISK BRAKES?

Freight cars with disk brakes have two extra disks on the wheelset axle. Since brake pads transmit the braking forces to the sides of these disks, the **WHEEL SURFACES THEMSELVES ARE NOT AFFECTED BY BRAKING PROCESSES** and are not roughened as a result – unlike with cast iron brakes. A smoother surface generates less resistance, which in turn leads to **QUIETER** braking processes and less rolling noise.

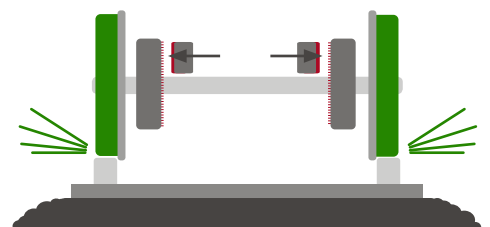
CAST IRON BRAKE PADS



COMPOSITE („LL“) BRAKE PADS



DISK BRAKES



QUIET ENGINES, QUIET RAILS: OTHER FACTORS THAT HELP CURB NOISE POLLUTION

Fitting freight cars with quiet braking technology is an important step toward noise reduction. That, however, exhausts the technical possibilities that can make the existing fleet quieter. To further ease the burden of noise on the population, a combination of noise-reduction measures must also be put in place by infrastructure operators and railway companies:

1. STRUCTURAL ALTERATIONS ALONG THE TRACKS

NOISE BARRIERS are the best-known method and a highly effective way to reduce noise. But there are a number of other alternatives too, including **PADDED SLEEPERS, RAIL DAMPERS** and **SUB-BALLAST MATTING**. These options attenuate the oscillations and vibrations caused by rail vehicles and substantially reduce noise pollution.

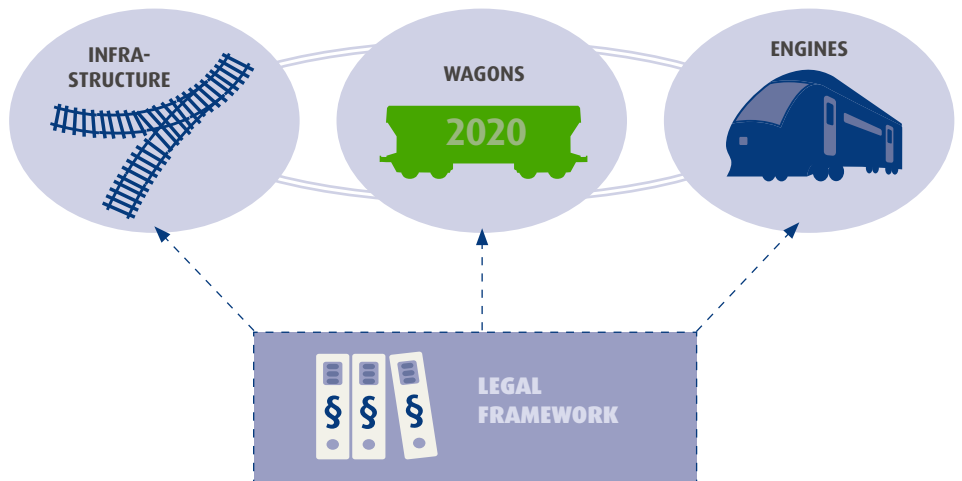


2. FITTING ENGINES WITH NOISE-REDUCING COMPONENTS

Railway engines too can play a key part in reducing noise. Both the **DRIVE SYSTEMS AND BRAKING TECHNOLOGY** should be optimized with a view to noise attenuation.

A PACKAGE OF INTERLOCKING MEASURES – TO MAKE RAIL FREIGHT MORE ATTRACTIVE

Raising public acceptance is vital to the future of rail freight. And if this goal is to be achieved, the people who live near rail freight lines must be exposed to less noise pollution. Refitting freight cars plays a major role in this context. We are aware of this responsibility and are happy to shoulder our part of the burden. Yet it will only be possible to maximize effective noise reduction **IF INTERLOCKING IMPROVEMENTS ARE MADE TO ALL THE RELEVANT FACTORS:** to wagons, engines and infrastructure. Another critical element is a legal framework that does not lose sight of the need for a cost-effective rail system.



CONTACT VTG

We would welcome the chance to engage in dialogue with you. Please feel free to talk to us about any issues relating to rail freight transportation. We would be happy to assist you with facts, figures and expert opinions.

WHO TO CONTACT

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