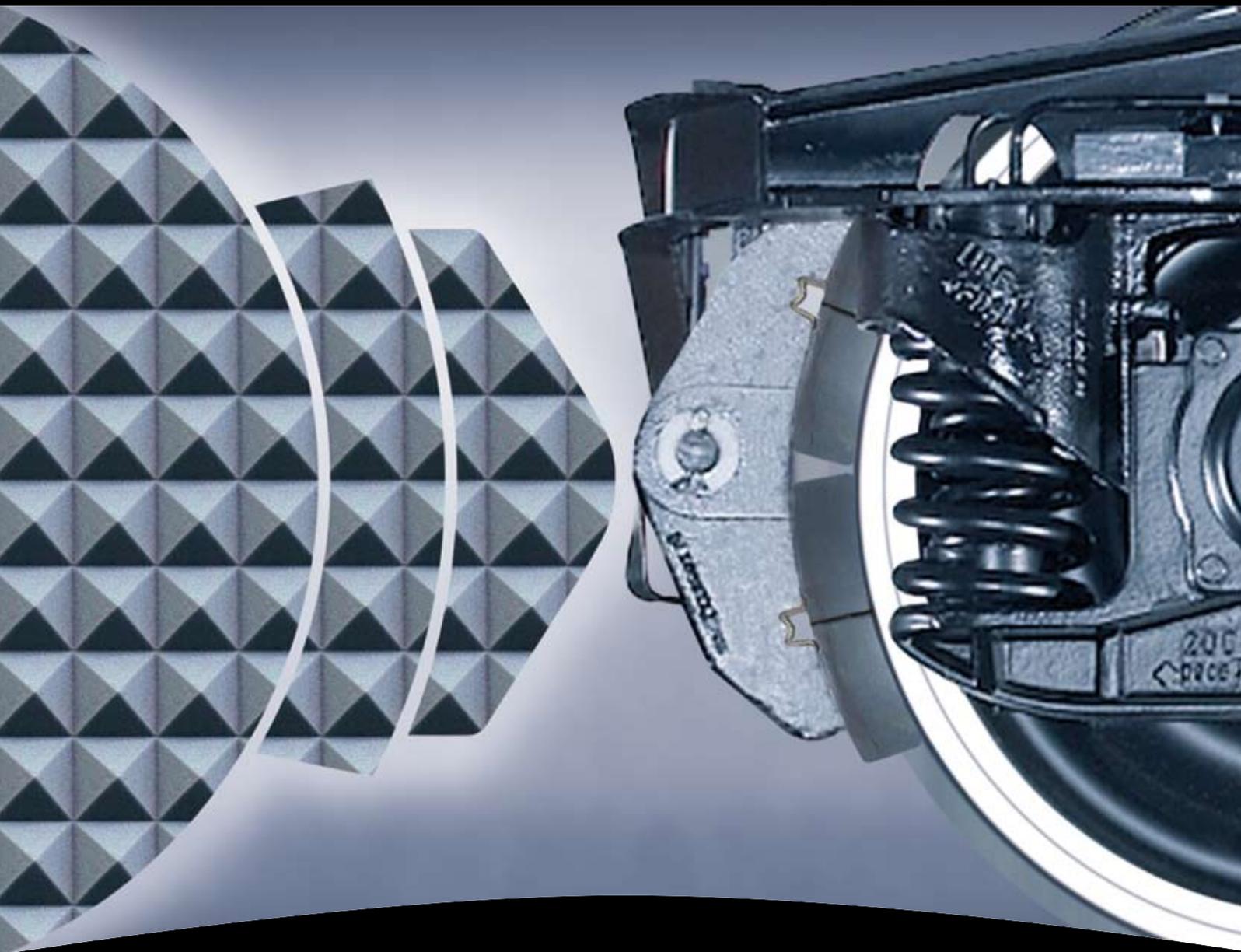


**Railway**

**Honeywell**



LESS NOISE AND GREATER EFFICIENCY  
FROM INNOVATIVELY QUIET BRAKE BLOCKS

**Protects People and Planet,  
Blocks, Wheel and Maintenance Budget:  
LCC-Optimized JURID 816M K-Block**

**JURID<sup>®</sup>**  
by Honeywell

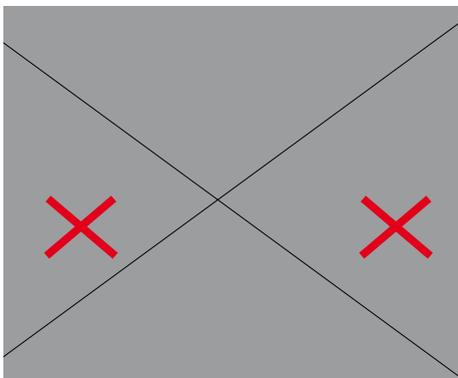
# A Quieter Ride and Lower Costs Due to

## In the Beginning was the Idea



Ever since man harnessed the power of steam, electricity, diesel and petrol to accelerate his new-found mobility, Jurid brake pads have ensured reliable braking and mastery of these forces on road and rail vehicles. However, it has not only been the development of steadily more powerful machines and faster vehicles that has continued unabated ever since. With the discovery of the first compressed friction material in 1914, Jurid created the basis for powerful brake pads that have been optimized and refined year on year to become more than a match for the demands of modern vehicles. The large number of OEM applications is testament to the innovation and quality of Jurid products.

## Old GG Blocks in the Firing Line of new EU Directives



Reducing CO<sub>2</sub> emissions is of paramount importance to European Union authorities, as is encouraging a shift from road to rail for the transport of freight. However, more rail traffic also leads to a considerable increase in noise emissions along rail routes. A Catch-22 situation? No, thanks to a new friction material technology!

## Honeywell Friction Materials: A BMWi Partner in the LÄGiV\* Research Project

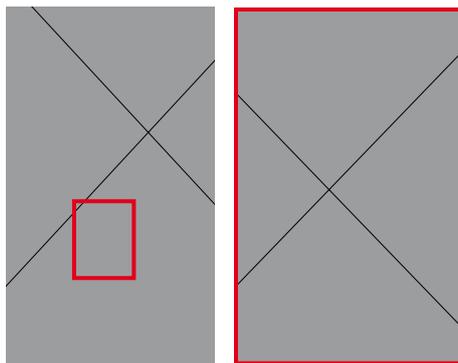
Against a backdrop of impending legal regulations on noise reduction for freight trains, and in agreement with the German Federal Ministry of Transport, Building and Urban Development (BMVBS), the German Federal Ministry of Economics and Technology (BMWi) initiated the LÄGiV\* project to study and develop suitable measures. Honeywell is a major contributor to this project, and is even able to offer an immediate product solution – the JURID 816M K-Block.

\* Noise reduced Freight Traffic by Innovative Composite Brake Blocks

## New Technology for Quieter Blocks in the Future



The problem with cast iron blocks is not so much the squealing when braking, but more the rumble of the rolling noise, caused by metal wear debris particles becoming welded onto the wheel.



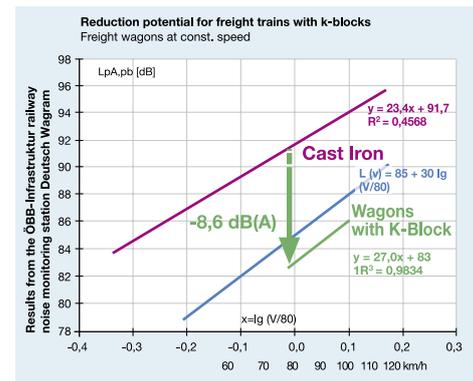
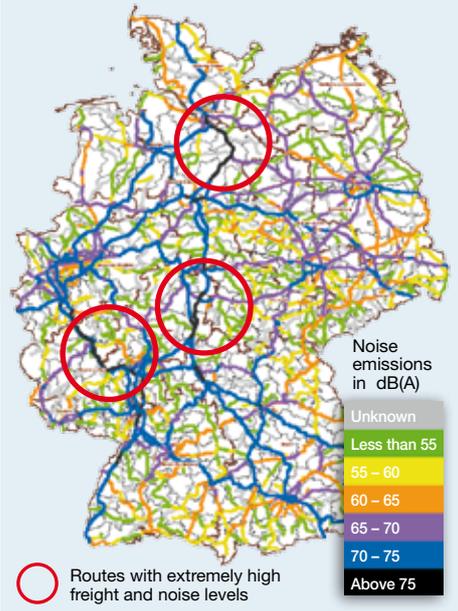
The K-block material, produced using plastic composite technology, leaves no material deposits on the running surface of the wheel, thus preventing a rumbling noise.



The noise levels of wheels braked using K-blocks are reduced by up to 8 dB(A), slashing perceived rolling noise by half.

## Firmly in the Green on Ecology and Economy

Diagram showing rail traffic noise emissions on the DB AG rail network



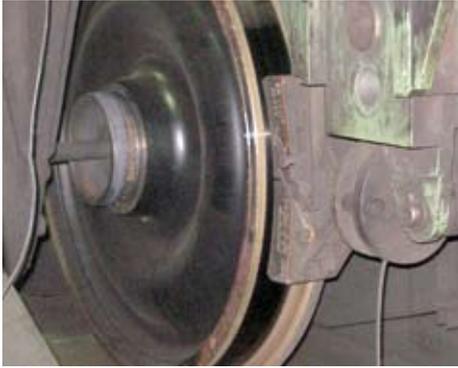
The JURID 816M K-block with reduced noise emissions is a significant contribution by Honeywell towards protecting the environment.

Not only that, it also offers several economic benefits. K-blocks from Jurid not only minimize running wheel wear, they also reduce wear on the brake block by up to 80 % compared with GG-blocks. Alternatively, from the user's perspective, JURID 816M K-block last up to five times longer and therefore increase maintenance intervals by a factor of four.

In view of the impending legal requirements, the first freight train operators have already launched innovation programs to convert their freight cars from cast iron blocks to K-blocks. Careful scheduling of maintenance intervals makes the conversion process very cost effective. Operators who have already made the switch are experiencing an interesting competitive advantage.

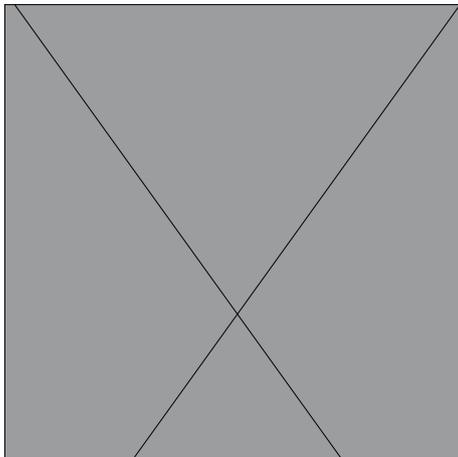
# Reduced Wear and Longer Service Life

## Harder than Reality: The Jurid Test Center



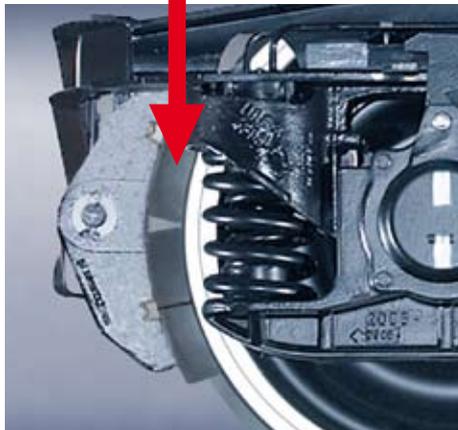
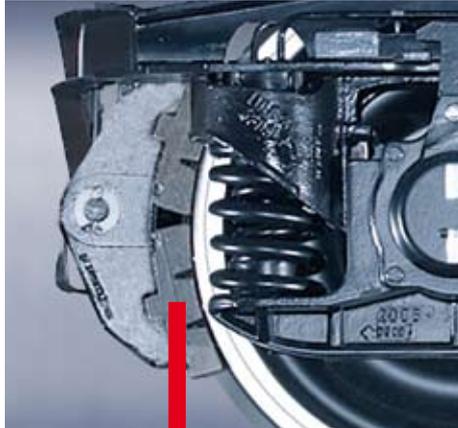
Leaving aside their successful introduction on rail vehicles, the quality of Honeywell products is continually tested and monitored using the latest equipment at the Jurid Development and Test Center. The results from the different test programs confirm the consistency of the friction values and the low wear characteristics of Jurid brake blocks.

## JURID 816M Quality Homologized by the UIC



The JURID 816M K-block is approved by the Union Internationale des Chemins de Fer (UIC). It permits any freight car with conventional brake block configurations to be converted to K-blocks and used on international rail networks without any further official authorization.

## The JURID 816M K-block as an Alternative

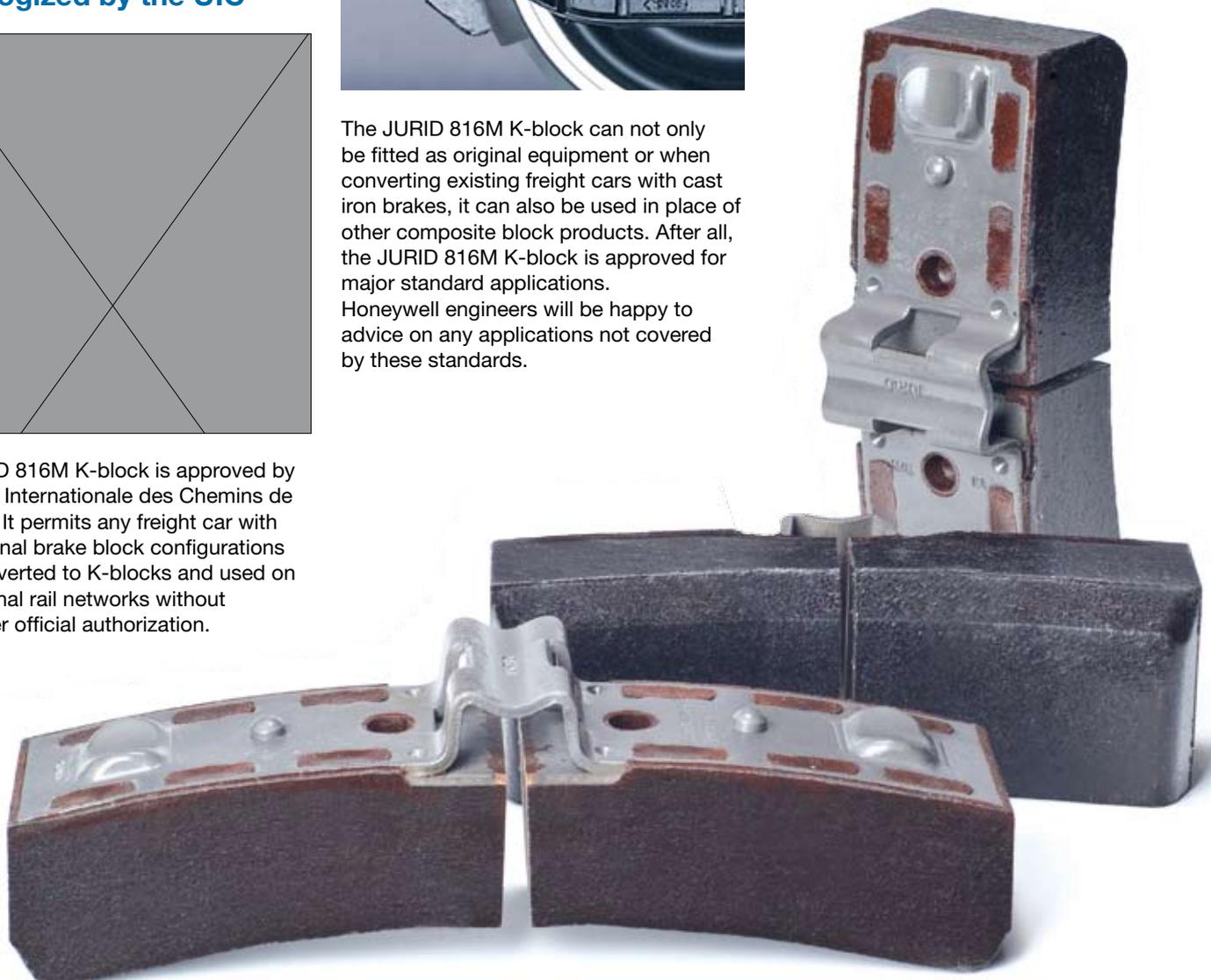


The JURID 816M K-block can not only be fitted as original equipment or when converting existing freight cars with cast iron brakes, it can also be used in place of other composite block products. After all, the JURID 816M K-block is approved for major standard applications. Honeywell engineers will be happy to advice on any applications not covered by these standards.

## JURID 816M as Original Equipment



Since UIC approval was granted, and with EU emissions regulations imminent, K-blocks are being fitted to new freight cars as original equipment. In light of glowing references and convincing LCC arguments, more and more JURID 816M K-blocks are finding their way into the brake systems of leading freight car manufacturers.



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