

Silent running for noise reduction Blickle wheels and castors can significantly reduce noise emissions

Rosenfeld, August 2019. Too much noise can make you ill - a common issue at the workplace. Excessive noise emissions can damage your hearing and your autonomic nervous system. A number of measures can help mitigate these issues, like using quiet wheels and castors on transport trolleys in industrial and commercial settings. Blickle has developed a number of different versions with special tread. They are soft, quiet, provide low levels of starting, rolling and swivel resistance and help keep employees healthy.

According to the Federal Environment Agency, “[t]he right to life and physical integrity guaranteed in the German constitution applies without restriction in all situations - that includes employees at work.” However, this doesn’t quite reflect the situation in the real world. According to a report published by the Federal Ministry for Labour and Social Affairs, there were around 13,000 reported cases of noise-induced hearing loss in Germany in 2017. 6,849 of these cases were determined to be work-related. According to a survey conducted by the Federal Institute for Occupational Safety and Health, around five million workers in Germany are exposed to noise levels in excess of 85 dB at work. However, DIN EN ISO 11690-1 requires noise levels at industrial workplaces to not exceed 75 to 80 dB.

The Federal Environment Agency recommends a number of measures for reducing noise levels. These include “technical measures at the source and quieter working methods.” The latter can be achieved using solutions which at first glance seem to have no direct connection to noise reduction - like using wheels and castors with particularly low noise treads on transport trolleys. “Users frequently use loud castors with a hard tread because they think that softer treads have a lower load capacity and higher running resistances,” explains Matthias Hellstern, Product Manager at Blickle in Rosenfeld. This is actually not the case, as demonstrated by the special materials in the company’s portfolio, all of which have proven their worth in a number of different applications. “People frequently underestimate the impact of wheels and castors. But they actually have a significant influence on noise emissions when goods are being transported,” says Hellstern. Depending on the trolley and the goods which are being transported, the noise produced by the wheels can be increased many times over.

Super soft tread

The Blickle SoftMotion soft rubber series is perfectly suited for applications where operational comfort, shock absorption and significant noise reduction are required. The special tread made of high-quality elastic solid rubber glides over the floor softly and quietly. This can be particularly helpful when using service trolleys or when transporting components which are sensitive to shock. When combined with a hardness 55 Shore A tread, the thick tread layer made of high-quality elastic solid rubber and a specially adapted contour ensure low levels of rolling resistance and quiet operation. The Blickle ALBS series can also be used to reduce noise levels and ensure extremely high levels of operational comfort. The extra thick tread and the crowned surface with a Blickle Besthane[®] Soft tread enable employees to move transport trolleys smoothly and quietly. The wheels in the ALBS series are resistant to heat buildup under dynamic load and are particularly suitable for high-speed applications.

Also suitable for sensitive environments

Hard and loud wheels are frequently used in the food and hygiene sector. Our POTHS and POBS series, on the other hand, can handle heavy loads in sensitive hygienic areas while reducing noise levels and providing exceptionally high operational comfort.

The Blickle POTHS wheel series consists of a heavy and stable nylon wheel centre and a tread made of thermoplastic polyurethane. The soft tread has a hardness of 80 Shore A, has good shock absorption properties and provides low levels of rolling resistance. This reduces the noise levels produced during transport and ensures pleasant operation with low vibrations. The chemically bonded connection between the tread and the wheel centre provides a high load capacity and significant room for compression. POTHS is non-marking and preserves the floor.

Blickle's POBS wheel series is a premium solution for hygienic applications. These wheels have a particularly thick tread cushion made of the soft, reaction-injected premium Blickle Besthane[®] Soft polyurethane, which is moulded onto a nylon wheel centre. This provides low levels of rolling resistance, excellent operational comfort with quiet operation and good floor preservation, even in a sensitive environment. These wheels are also hydrolysis-resistant and corrosion-resistant. Plus, they have an extremely high level of chemical resistance to a wide variety of aggressive substances.

Tests run in Blickle's laboratory have shown that choosing the right wheel plays an important role when it comes to noise levels. It is important to note here that the majority of the noise depends on the nature and quality of the goods being transported. Nevertheless, the tests showed the difference between various wheel

materials. When transporting loose stamped parts over a corrugated plate, the elastic solid rubber series POES had by far the best performance with noise levels measured at 70 dB. The POEV and POTHS wheel series are also much quieter than commonly used nylon wheels, which can cause noise levels in excess of 90 dB. As an increase of 10 dB represents a doubling in volume, it is important to select the right wheels.

Quietly over the cobblestones

Blickle's quiet wheels have already proven their worth in a number of different scenarios - such as the one faced by a traditional German bakery. The scenario: One of the bakery's city centre branches was causing a lot of noise by rolling catering trolleys over cobblestones at 4:30 in the morning. This led to a lot of complaints from local residents. Management contacted Blickle to find an alternative for the light-duty castors with an expander fitting which they previously used in order to reduce noise emissions. The wheel and castor specialists recommended the Blickle SoftMotion elastic soft rubber series, and this proposed solution was selected over a competitor.

The Blickle solution impressed the management of the bakery. Its previous setup was completely replaced by a combination of the Blickle SoftMotion wheels with the light duty LKRA bracket series and a suitable expander fitting. The high-quality materials and an extra-thick tread significantly reduced noise levels and lowered rolling resistance compared to a solid rubber tread. The bakery reduced the morning noise to such an extent that almost no further complaints have been received from local residents.

Clear advantages for glass manufacturers

A Blickle development also proved popular with the world's largest glass manufacturer, which is based in France. Every day, the group produces more than 4.3 million high-quality crystal and glass items in five factories across the world. They use 250 loading platforms on castors to transfer the products from the furnaces to a variety of storage locations for finishing and for shipping. Each of these platforms is capable of transporting up to 1.5 tons of goods. However, there are a number of obstacles: The floor has broken glass and plastic film remnants in some areas. High noise emissions were caused as a result of various points of friction between the castors as well as the film remnants, which often wrapped around the wheel axle. The customer also had problems with breakages due to the products falling down or hitting each other during transport. The French company turned to Blickle in their search for an alternative.

One of the manufacturer's requirements was that the mounting height of the transport units needed to be retained. Blickle's specialists made some minor

changes to the design of the trolley and recommended spring-loaded heavy-duty castors. The elastic solid rubber tyres with "Blickle EasyRoll" smooth rolling quality combined with the extremely robust spring-loaded bracket in the LSFN series dealt with all of the challenges facing the glass manufacturer. The heavy-duty castors effectively dampen any shocks which occur and significantly reduce noise levels. An additional thread guard prevents film remnants that may be lying around from wrapping around the wheel axle and consequently causing it to lock up.

Meta title: Blickle offers an extensive portfolio of quiet wheels and castors for noise reduction

Meta description: Blickle has a wide range of quiet wheels and castors for noise reduction which have already proven their worth in a number of scenarios

Keywords: Blickle wheels castors noise reduction quiet running low rolling resistance tread low vibration heavy-duty castors

Picture captions:



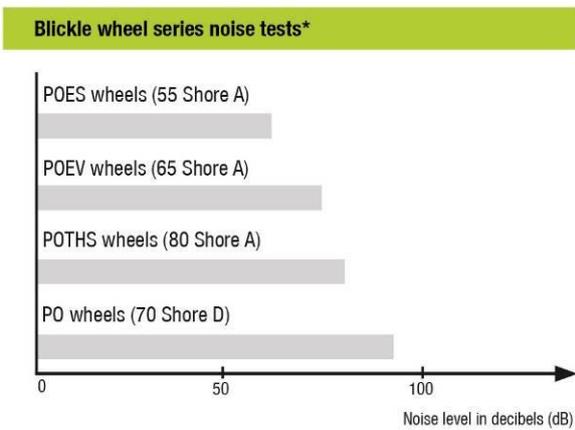
Image 1: Too much noise can make you ill - a common issue at the workplace. Excessive noise emissions can damage your hearing and your autonomic nervous system. Using quiet wheels and castors on transport trolleys in industrial and commercial settings can help mitigate these issues.



Image 2: Blicke SoftMotion light duty castors with expander fitting provide a high level of operational comfort and effective shock absorption for transported goods.



Image 3: The Blicke POTH wheel series consists of a stable nylon wheel centre which ensures pleasant operation with no vibrations.



* Trolley with 100 kg load. Noise levels measured on corrugated plate with 200 mm wheel Ø at walking speed.

Image 4: Evidence from the test laboratory: Blicke wheel series are much quieter than frequently used nylon wheels.

Picture credit: Blicke Räder+Rollen GmbH u. Co. KG

About Blickle:

The family company was established in 1953 and has been committed to uncompromising quality, high levels of availability, innovation and reliability ever since. Today, Blickle is a global leader in the production of wheels and castors. There are more than 30,000 items in its standard product range. Blickle also develops a large number of tailored solutions in partnership with customers. The group has over 1,000 employees; more than 750 of these based at the headquarters in Rosenfeld, Germany. In addition to the production facilities in Rosenfeld, Blickle has 17 sales subsidiaries in Europe, North America and Asia and delivers to over 120 countries worldwide.

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