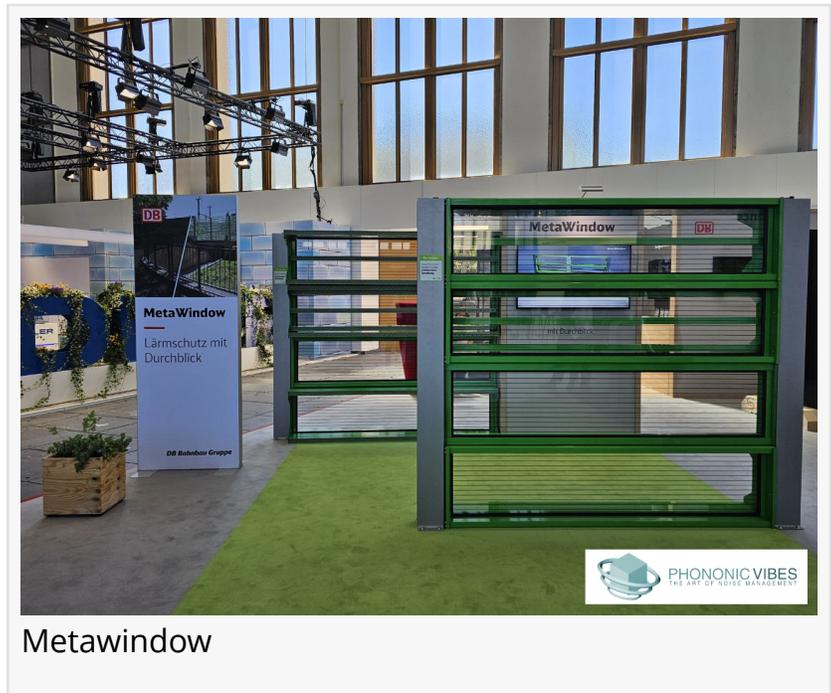


Minimal impact, less noise: Deutsche Bahn with Phononic Vibes, develops innovative and transparent sound-absorbing walls

The MetaWindow, the first transparent and sound-absorbing panel in the world.

MILAN, ITALY, June 24, 2024

[/EINPresswire.com/](#) -- [Deutsche Bahn \(DB\)](#) and [Phononic Vibes](#) srl announce a true innovation in the field of noise protection: transparent soundproof walls with high sound-absorbing properties. The [MetaWindow](#), developed by Phononic Vibes together with DB, combines the sound-absorbing properties of conventional walls with the visual advantages of transparent walls. The key is the use of metatechnology, metamaterials, which increase acoustic efficiency compared to traditional noise protection systems thanks to the special geometry of the system.



Metawindow

DB and the Italian company Phononic Vibes collaborated and developed the product together from concept to certification. The MetaWindow was presented for the first time as part of the Greentech Festival in Berlin in May 2024 and the first implementations in infrastructure projects are scheduled for 2024 on the S4 railway section in Hamburg.

Berthold Huber, DB Infrastructure Director: "To achieve our objectives of reducing environmental impact, we must increase traffic on the rails and increasingly expand the network. But only if rail traffic becomes quieter will we be able to obtain the necessary approval and acceptance from citizens. This is precisely where the innovative MetaWindow comes into play: with the transparent noise barrier, municipalities no longer have to decide between appearance and functionality."

The MetaWindow by Phononic Vibes is the ideal solution for places where the law requires highly absorbent noise barriers and equally urban planning sensitivity. Due to the large impact of noise barriers on the urban landscape, railway lines in urban areas are the most affected, as are tourist areas, near residential settlements and in protected natural landscapes. This benefits



More visibility, less noise: together with the Italian startup Phononic Vibes, we have developed transparent sound-absorbing walls with the highest soundproofing properties”

Dr. Richard Lutz, Chairman of the Board of Management of Deutsche Bahn

both residents and travelers by getting an unobstructed view during the train ride. The MetaWindow, by integrating without impact with the surrounding environment, reduces the number of objections and lawsuits when building noise barriers: this in turn has a direct impact on shorter implementation periods.

The innovative metatechnology absorbs specific frequency ranges thanks to its special geometry and, combined with the sound-absorbing material, ensures a high level of sound reduction. The MetaWindow is the first transparent wall on the market to be classified as highly absorbent in terms of sound absorption, achieving sound insulation of

34 to 37 decibels and at the same time maintaining the percentage of transparent surfaces up to 72%. Currently available transparent noise barriers are significantly less effective in reducing noise and are therefore not suitable for widespread use along rail tracks in accordance with legal requirements.

From an economic and price point of view, the economic advantage of the MetaWindow is clear considering the overall costs of building a noise barrier and considering the savings potential of faster design approval procedures thanks to higher acceptance rates.

Noise protection is of great importance to DB and is firmly anchored in the Group's Strong Rail strategy. As one of the four strategic areas, the “Green Transformation” focuses, among other things, on the aspect of noise protection and aims to lighten the burden on all affected residents by 2050 and more than half by 2030. To achieve this objective, two approaches come into play: on the one hand, through specific noise protection measures and, on the other, through measures to reduce noise emission directly on the vehicles that cause noise. By 2030, approximately 3,250 kilometers of the existing network will have to be rebalanced and by 2050, approximately 6,500 kilometers.

Furthermore, noise protection measures are planned as part of the numerous new construction and expansion projects planned by Deutsche Bahn. This includes the aspect of expanding, improving or replacing noise barriers.

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