



# Mobile noise and irritation barriers

This is green.

More technology.  
Less noise.  
**Innovative noise reduction.**

no. 43

Construction sites have various disturbing effects on people and animals. Noise pollution, e.g. from pile driving, drilling and dismantling work or from truck traffic, is one of the biggest environmental problems. As more and more construction is taking place in or near residential areas, the number of complaints from people who feel annoyed by construction noise is increasing. Animals also feel disturbed by construction noise. In the breeding season and during the rearing of the offspring, construction site noise can pose a risk to reproduction success, especially with noise-sensitive bird species. In addition to noise pollution, the construction site also has a barrier effect, which can be an ecological trap if animals unexpectedly migrate into the construction site, either to cross it or to open up new habitats (e.g. the pioneer species the common toad). The glare caused by machines, fences, site lighting or structures that reflect sunlight and thus cause irritation (e.g. crossing structures to the otter) should not be underestimated either. Visually shielding and low-noise techniques and machines can be used as a protective measure, as well as an optimised organisation of site work that can also increase acceptance among local residents. However, increased construction site noise is not always avoidable, e.g. groundwater pumps often have to run permanently.

## Experience from projects at Deutsche Bahn

DB is increasingly using mobile noise barriers or mats to protect both residents and employees on the construction site. For example, in the expansion of the node in Halle/Salle or in the conversion of the railway station in Rangsdorf. In addition to the noise protection effect, the mobile walls also serve as dust, privacy and glare protection. In current plans, DB wants to use barriers to protect meadow birds during the breeding season. At the same time, they prevent unwanted immigration of animals during construction. To prevent irritations because of barriers, a colour design is possible. The placement in relation to the sound source is decisive for the acoustic success of mobile noise barriers. The better the source is shielded, the higher the effect. At the moment, DB is thinking of enhancing barriers with a temporary "hop-over" for bats. However, this has not yet been tested in practice.



Construction project "Kreuzungsbau Elsterwerda": The vacuum pumps, which operate twenty-four-seven, were encapsulated with insulated wooden enclosures to reduce the construction volume.

Reconstruction of station Rangsdorf:  
Piloting mobile inflatable CENO TEC noise barriers

## Examples of mobile noise barriers

### CENO TEC

- Double-shell, inflatable noise barriers made of plastic membranes achieve an effect almost comparable to concrete walls.
- In cooperation with the Fraunhofer Institute for Building Physics (IBP) and the University of Stuttgart, CENO has developed and patented these special membrane elements for temporary noise protection.



### HPZ: Large noise protection system

- in three construction heights: 3.5, 4.4 and 7.0 metres
- noise protection mats consist inside of a complex fibre structure and are pumped up
- for maximum flexibility, the stud frame is made of lightweight, high-strength aluminium profiles

### HPZ: Small noise protection system

- designed for noise reduction on track construction sites (e.g. tamping work)
- with a size of approx. 3 x 1 meter, the handy sound insulation elements made of special plastic-coated fabric can be integrated into the fixed barrier.
- elements can also be attached to existing scaffolding/barriers on construction sites inside and outside buildings
- in combination with the floor connection flap, even better noise reduction\* is achieved

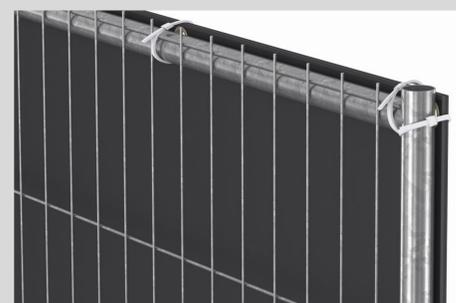


### Heras Lärmschutzmatte® (noise protection mat)

This product was developed in England and has been a proven companion of the construction industry already for years. Heras Mobile Fencing & Security has acquired the exclusive rights to sell and rent the noise protection mat in Europe.

The mat is a noise limitation measure\* for the environment and the employees. As far as the environment is concerned, e.g. aggregates, drainage pumps or other machines that continuously generate noise can be fenced in. Employees can be protected by separating noise-generating work such as grinding, cutting and drilling with noise protection mats.

- front of the sound-absorbing, padded tarpaulin made of laminated, flame retardant PVC
- fibreglass fibre filling (99% made from recycled plastic bottles)
- back of the filling laminated and fire-resistant (can be used close to aggregates)
- simply attached by a single erector to the site fence or, if necessary, to a scaffolding construction.



\*specific noise reduction values in dB(A) can be obtained from the manufacturer, depending on the area of application.



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Climate protection.  
Nature conservation.  
**Deutsche Bahn.**