Innovative noise-protection: effective, environmentally friendly and economical

Z-bloc is an innovative and environmentally friendly system of noise protection on railways. Z-bloc's special feature is its very low height of 73cm above the rail's top surface and it is extremely effective because of the small distance from the track. The system has been used successfully in Scandinavia since 1999.

The protection of residents from noise on railways will remain in the future just as indispensible as the transport of passengers and goods by the railway, because sleeping disorders, headaches, stress and irritations which are caused by noise can lead to permanently damaged health.

Effective noise protection

A modern noise-protection system must therefore be effective first of all. Z-bloc is based on the principle of controlling the noise effectively in the immediate vicinity of where it came from. The Z-blocs with an absorber on the inner side are mounted on the railway embankment only 170cm from the track's centre. The sound is controlled highly effectively in this way by attenuating chambers underneath the rail vehicles and by attenuating channels on the sides.

Z-bloc is environmentally friendly

Conventional noise barriers in towns and residential areas adversely affect the landscape and they obstruct the view because of their height. These effects are highly undesirable in many applications. The Z-bloc's low installed height only influences the surroundings slightly. The clear view is retained for residents, train drivers and guards. What is more, the small area that the Z-bloc offers on one side is not very inviting for graffiti artists.

Economic efficiency of Z-bloc

Z-bloc's constructional features make the system highly attractive economically. The investment costs remain comparatively low because of low manufacturing costs and simple modification of the standard blocks. Extra space for mounting the blocks is not required.

Mounting of the Z-bloc directly on the railway embankment at a distance of 1.7m from the track's centre

The foundation is less elaborate and geo-technical investigations are unnecessary.

The project's planning costs remain manageable. The reduction of sound level that is achievable with Z-bloc can be calculated more precisely because the weather conditions only have a slight influence.

Z-bloc took part in a European project called 'Quiet City Transport' (QCITY) between 2005-2009. One of the targets of QCITY was to investigate different measures to reduce railway noise. One study was to install a low barrier at 1.7m from the track centre and to measure the reduction in the noise level from urban, InterCity and freight traffic.

From that project, new functions evolved; among them was the testing of evacuation doors. The new absorber that is found in generation 3 is a direct result from the results of QCITY project.

After the QCITY project, Z-bloc continued its further development, so that the hard safety demands regarding this kind of product could be met. Apart from the evacuation doors, the shape of the Z-bloc was changed so it would make optimal conditions for evacuating a stationary train. In that case, Z-bloc would work as an evacuation platform. The new frame that is used in generation 3 is also optimised for rail maintenance along the rail.

Hasso Wien is responsible for the marketing and licensing of Z-bloc International. Hasso has opened up new markets for a huge number of international projects.

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