

Ciprotec 1013

Under ballast mat for track systems

Application

Ciprotec is mainly used for ballast tracks on bridge decks, tunnel floors or similar. It helps to avoid ballast wear or protects coatings of concrete or steel structures. The mats fully cover the subfloor. They also provide highly effective reduction of vibrations and sound emissions caused by rail bound traffic. The various types of mats come in thicknesses from min. 13 mm and are designed for different axle loads, speeds and types of permanent way. Ciprotec guarantees effective attenuation of structure-borne noise and vibration in tunnels underneath buildings, track sections adjacent to buildings and bridges over structures. Ciprotec is suitable for main line railway-, metro-, underground-, light rail- or tram tracks.

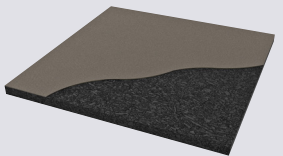
Description

Ciprotec is a black elastic mat made of PU bound rubber fibres, laminated on top with a geotextile layer of robustness class GRK 5. The upper table shows the main properties of the product.

Installation

Ciprotec is layed to a well-swept subfloor. Projecting concrete edges or similar, protruding reinforcement parts etc must be removed. Ciprotec shall be layed butt-jointed without gaps. In case several layers of Ciprotec are installed, the different layers shall be staggered. Longitudinal or transverse joints between single mats facing the ballast bed or a concrete track slab, shall be closed with a suitable covering strip or tape. The same applies to possible corner joints between floor- and side mats. If requested, the mat can also be glued in whole or in part to the surface of the subfloor.

Product data

PRODUCT PROPERTIES					
Item	Test Standard	Values	Dimensions and Weight	Values	
Tensile strength	ISO 37	0.25 N/mm ²	Length [m]	≈ 10	
Elongation at break	ISO 37	56 %	Width [mm]	≈ 1250	
Fire behaviour	DIN EN 13501-1	Bfl classification	Thickness [mm]	≈ 14.5	
Ozone resistance	DIN ISO 1431-1	Crack Assessment 0	Weight [kg/m ²]	≈ 8.2	

NOTE

The different test results C_{stat} and C_{dyn} according to EN 17282 and DIN 45673-5 are mainly due to the use of different load plates in the test facilities. EN 17282 uses a geometric ballast plate (GBP) while DIN 45673-5 uses a flat load plate.

EN 17282		DIN 45673-5	
Static Bed Modulus C_{stat}		Static Bed Modulus C_{stat}	
Load Range [N/mm ²] applies to C_{stat} and C_{dyn}	Value ± 15 % [N/mm ³]	Load Range [N/mm ²] applies to C_{stat} and C_{dyn1}	Value ± 15 % [N/mm ³]
0.02 - 0.10	0.054	0.02 - 0.10	0.10
Dynamic Bed Modulus C_{dyn}		Dynamic Bed Modulus C_{dyn1}	
Frequency [Hz]	Value ± 15 % [N/mm ³]	Frequency [Hz]	Value ± 15 % [N/mm ³]
5	0.075	5	0.122
10	0.080	10	0.130
20	0.085	20	0.137

Tested at: TU Munich, MPA NRW and Müller-BBM. Test reports are available on request.

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