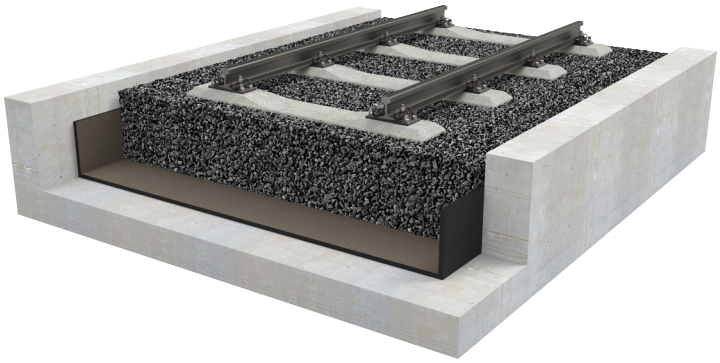
CALENBERG



Product catalogue

SUB-BALLAST MATS

A LISEGA Group Company

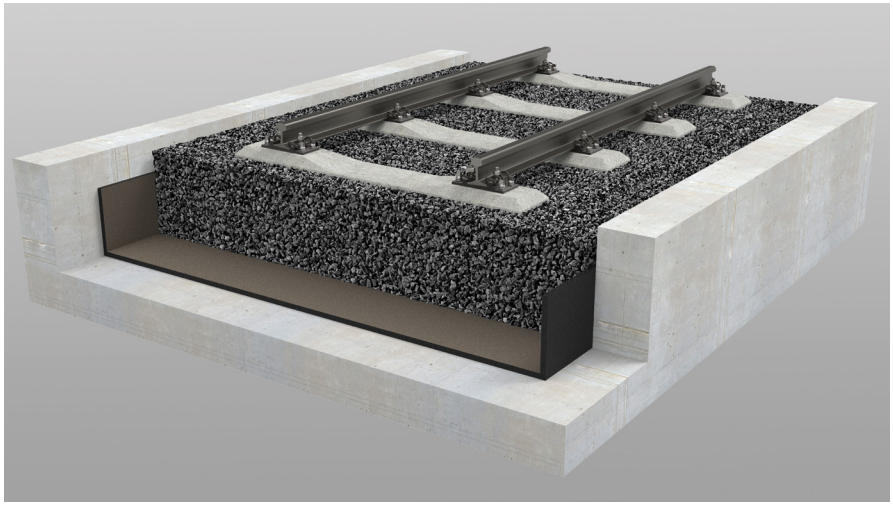
Sub-ballast mats
Product Portfolio

Effective protection for ballasted track

In the area of track superstructure, there are different variants, the ballast track and the ballastless track, for which different components are used in each case with regard to wear and possible vibration protection. Sub-ballast mats are suitable as a protective measure against vibrations and sound transmission caused by passing trains.

Sub-ballast mats are laid over the entire surface directly under the ballast bed in order to achieve both elastic decoupling and protection of the track components. Sub-ballast mats protect, for example, ballast from being destroyed so that the track does not need to be repacked as frequently. This can also ensure a stable track position and protect any existing subfloor sealing.

The elastic sub-ballast mats retain their stability even when subjected to long-lasting continuous loads and under different climatic conditions, thus contributing to track system maintenance cost efficiency and a long service life for the ballast bed.



The optimal solution for your project

- Reduction of vibration and structure-borne sound immissions
- Stabilisation of track structures
- Ballast protection
- Reduction of ballast bed thickness
- Reduction of track maintenance costs
- Long service life and simple installation
- No replacement necessary over the entire service life of the superstructure
- Recyclable materials that can be returned to the recycling loop

Quality assurance according to standards

Our products are manufactured and reused in Germany.

MADE IN GERMANY

Calenberg quality management is carried out in accordance with recognised procedures that meet the quality requirements of established standard regulations. The Ciprotec types have been tested extensively in accordance with DIN EN 17282 by renowned testing institutes (TU München, MPA NRW und Müller BBM). All test reports are available upon customer request.

The Ciprotec sub-ballast mat

Acting with an eye on the future – conserving resources – potential in rail transport technology

The two-layered product consists of 100% recyclable elastomers and is lined with a geotextile (GRK 5) on its upper surface. Ciprotec helps to reduce environmental impact and conserve resources. The composition of the elastomer layer from bonded rubber fibres as well as different mat thicknesses and the geotextile protective layer aid any common ballast superstructure in achieving the required elasticity.

The recyclable and therefore economical sub-ballast mats are used in metropolitan, underground and tram traffic, long-distance and high-speed traffic and freight traffic.

The product types on offer

Note: Values determined according to DIN EN 17282.

CIPROTEC 3017 UP TO A 25-T AXLE LOAD | TRACK CATEGORY TC 3			
Static bedding modulus C_{stat}	Load range 0,02 - 0,10 N/mm²	0,0304 ± 15 % N/mm³	Thickness: ≈ 18,5 mm
Dynamic bedding module C_{dyn} (Evaluation range 0,02 - 0,10 N/mm²)	5 Hz	0,0417 ± 15 % N/mm³	
	10 Hz	0,0464 ± 15 % N/mm³	
	20 Hz	0,0480 ± 15 % N/mm³	

CIPROTEC 6018 UP TO A 25-T AXLE LOAD | TRACK CATEGORY TC 3			
Static bedding modulus C_{stat}	Load range 0,02 - 0,10 N/mm²	0,0417 ± 15 % N/mm³	Thickness: ≈ 19,5 mm
Dynamic bedding module C_{dyn} (Evaluation range 0,02 - 0,10 N/mm²)	5 Hz	0,0585 ± 15 % N/mm³	
	10 Hz	0,0628 ± 15 % N/mm³	
	20 Hz	0,0659 ± 15 % N/mm³	

CIPROTEC 1013 UP TO A 25-T AXLE LOAD | TRACK CATEGORY TC 3			
Static bedding modulus C_{stat}	Load range 0,02 - 0,10 N/mm²	0,054 ± 15 % N/mm³	Thickness: ≈ 14,5 mm
Dynamic bedding module C_{dyn} (Evaluation range 0,02 - 0,10 N/mm²)	5 Hz	0,075 ± 15 % N/mm³	
	10 Hz	0,080 ± 15 % N/mm³	
	20 Hz	0,085 ± 15 % N/mm³	

CIPROTEC 1515 UP TO A 35-T AXLE LOAD | TRACK CATEGORY TC 4			
Static bedding modulus C_{stat}	Load range 0,02 - 0,164 N/mm²	0,0729 ± 15 % N/mm³	Thickness: ≈ 16,5 mm
Dynamic bedding module C_{dyn} (Evaluation range 0,02 - 0,164 N/mm²)	5 Hz	0,0969 ± 15 % N/mm³	
	10 Hz	0,1003 ± 15 % N/mm³	
	20 Hz	0,1048 ± 15 % N/mm³	

CIPROTEC G 1015 UP TO A 25-T AXLE LOAD | GTRACK CATEGORY TC 3			
Static bedding modulus C_{stat}	Load range 0,02 - 0,10 N/mm²	0,051 ± 15 % N/mm³	Thickness: ≈ 15 mm
Dynamic bedding module C_{dyn} (Evaluation range 0,02 - 0,10 N/mm²)	5 Hz	0,074 ± 15 % N/mm³	
	10 Hz	0,081 ± 15 % N/mm³	
	20 Hz	0,086 ± 15 % N/mm³	

Accessories

Available from Calenberg upon request:

- Surface adhesive R, tubular bag approx. 840 g
- EPDM cover strip (dimensions 0.1 m x 1.3 mm), fully self-adhesive

Delivery

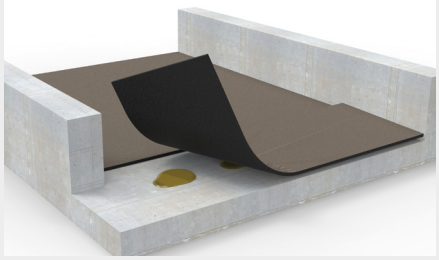
The sub-ballast mats are supplied in standard rolls of 10 m x 1.25 m, packed on pallets. Upon request, special lengths and sheet products, for example for use as side mats, can also be manufactured.

Simple installation of all sub-ballast mats

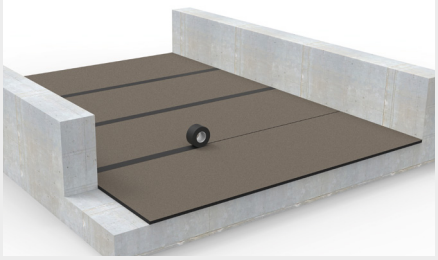
Important! The installation instructions of the railway operator must be taken into account.

1. Clean substrate

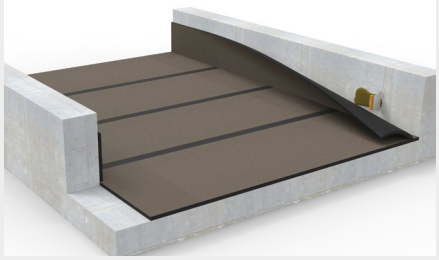
2. Bonding to the substrate



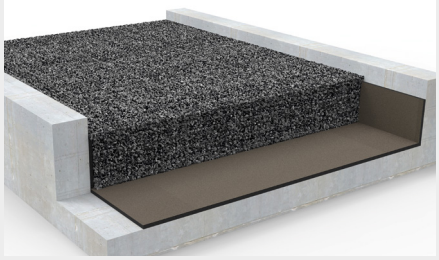
3. Bonding of the mat joints



4. Fitting the side mats

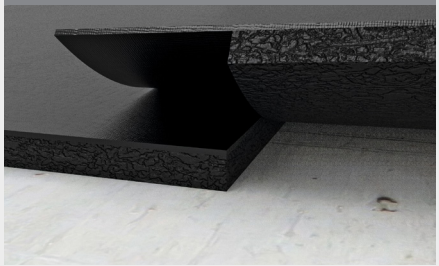


5. Covering with ballast



Note
The geotextile-laminated side acts as a protective layer and must always face the ballast (upwards).

Overlap strips



Exception Ciprotec G 1015
Unlike product types 3017, 6018, 1013 and 1515, this variant has an overlap strip. For a jointless surface, the overlap strip vulcanised to the side can be stapled to the adjacent sub-ballast mat. Gluing is usually not necessary.

Contact

Would you like to learn more about our products and services? Our team of experts will be happy to support you with your project:

bahn@calenberg-ingenieure.de

Am Knübel 2-4
31020 Salzhemmendorf | Germany

Tel. + 49 5153 940 00
Fax + 49 5153 940 049

info@calenberg-ingenieure.de
www.calenberg-ingenieure.com

A LISEGA Group Company

9 November 2023 | 3rd Edition | ©Calenberg Ingenieure GmbH | Subject to change