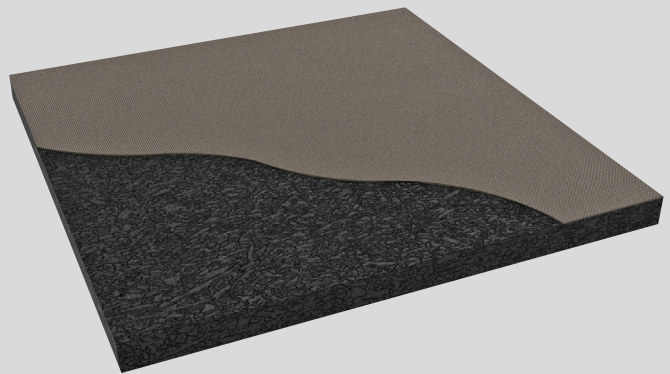




INSTALLATION INSTRUCTIONS for Ciprotec



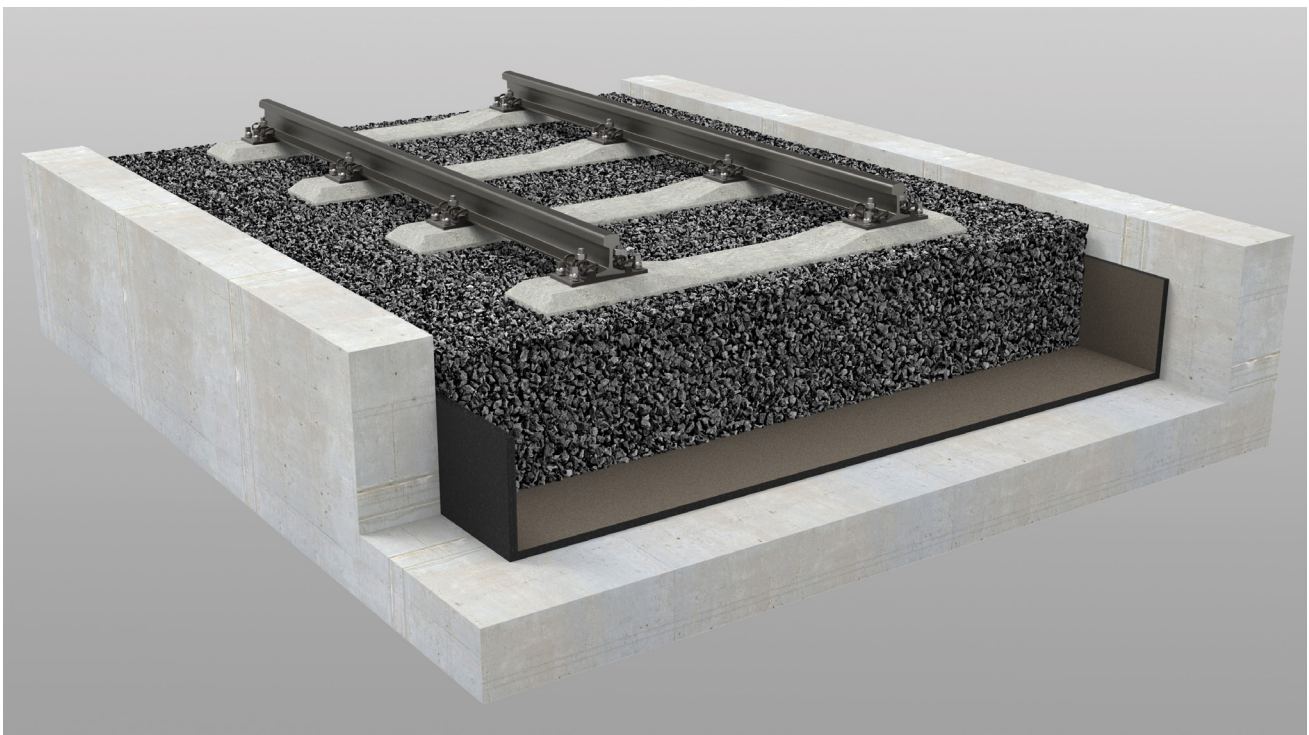
Application

Ciprotec is mainly used on ballast-covered surfaces in track construction (bridges, tunnels, etc.) to reduce ballast wear or to protect structural coatings in the interface between ballast and concrete or steel. The mats lie on the subfloor over the entire surface and also serve to dampen vibrations and decouple structure-borne noise in the track superstructure of rail-bound traffic.

Ciprotec is available in different stiffnesses and thicknesses from min. 10 mm for different axle loads and a wide range of superstructure concepts, so that optimum protection of the ballast or the adjacent structure surfaces is ensured. Ciprotec is suitable for use on underground trains, suburban trains, trams and mainline trains.

The under ballast mats, the top side of which is laminated with a geotextile (GRK 5), are supplied as standard in rolls 10 m x 1.25 m, packed on pallets. Special lengths and sheet goods, e.g. for use as side mats, can also be provided on request.

Ciprotec under ballast bed





Substrate / Preparation

In principle, the guidelines of the railway operator apply to the installation of the sub-ballast mats in the track system.

The floor must be swept clean and any coarse unevenness or sharp-edged elevations on the surface removed before laying the sub-ballast or track bed mats. Loose and pointed objects must be removed. The elastic rubber layer adapts to minor unevenness.

Installation

The geotextile-covered side of the mat faces the ballast (top). The mat tracks are laid at right angles to the track axis. Depending on the duration of storage and the temperature conditions, the sheets should be unrolled before installation so that the mats can be "laid out". Depending on the weather conditions, this may take several hours.

Ciprotec is to be laid without gaps and end to end. If the mats are laid in several layers, the layers must be staggered.

Floor mats are laid first, then any vertically arranged side mats are fitted so that their lower edge rests tightly on the floor mat.

The mats are cut to size or adapted to the substrate geometry using a sturdy hand knife or an electric reciprocating saw. Blades with a serrated edge (insulation knives) have proven to be advantageous for cutting the mats. Drainage openings can be made using a hollow drill.

Bonding to the substrate

Depending on the respective regulations of the railway line operator, the sub-ballast mats are to be glued to the horizontal bearing surfaces at specific points using a suitable surface adhesive (can be obtained from Calenberg, for example).

As a general guideline, about 25% of the contact area should be bonded. This corresponds, for example, to the recommendation of DB Ril. 824.1510. Furthermore, the processing instructions of the adhesive manufacturer must be observed.

Side mats must be glued to the vertical base surface over their entire surface.

Covering the butt joints

Butt joints between the mat sheets must be covered with a suitable cover strip approx. 100 mm wide (e.g. EPDM cover strip from Calenberg).

Accessories

Available from Calenberg on request:

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



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