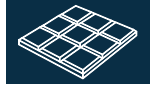


INSTALLATION INSTRUCTIONS

OIL-EX in railway systems



Use

Deutsche Bahn (DB) Guideline 880.1030 regulates the use of protection systems in holding sidings. This guideline aims to help design and operate locomotive holding tracks in such a way that they do not contaminate and have no impact on soils or water bodies. Protection systems with different technical designs and effectiveness should be used in locomotive sidings with their design depending on the identified levels of need for action. Covering systems with absorption mats are classified as Level I need for action. There is no licensing requirement for protective systems equipped with absorption mats.

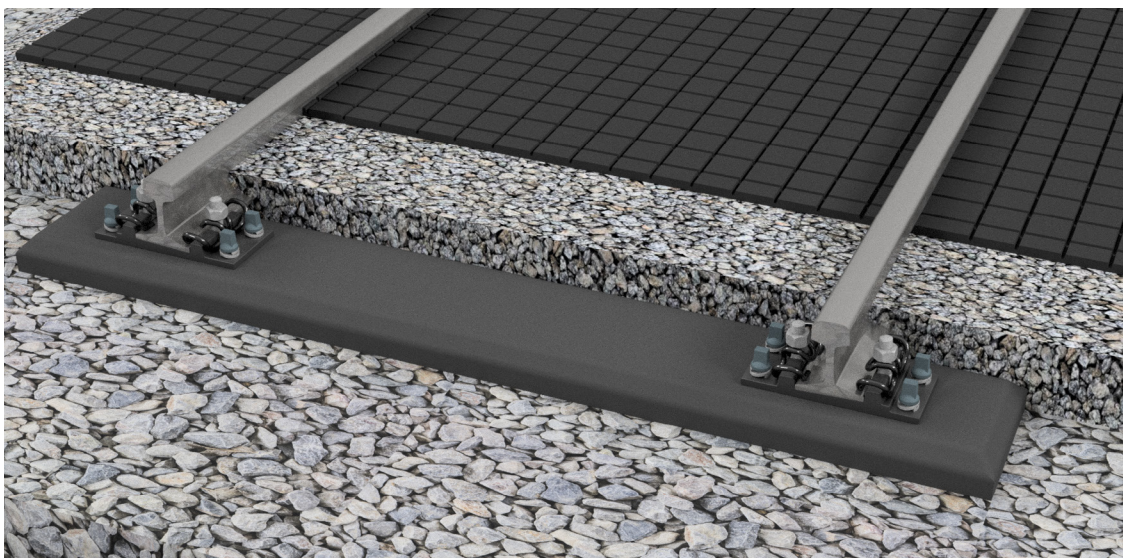
Preparing the subsurface

The subsurface for the protection system needs to be prepared to hold the mats before OIL-EX is laid. The ballast bed should be filled with Grain Size 2 ballast (15/30) up to the upper edge of small hardware parts. The total width of the ballast bed must be at least 3.1 m. This laying width comprises a track width.

Installation

The OIL-EX absorption mat is generally delivered in rolls. The width of the mat matches the width of the central strip (1.48 m), so it can be fitted exactly and there is no need to trim the mat. The side strip is 0.74 m wide, corresponding to half the width of an entire mat. The longitudinal cut can be made on site or in advance in the factory, depending on requirements. When laid, the OIL-EX rolls are rolled out in the direction of the track and then fixed under the rail heads. The mat can be adapted to the track geometry easily thanks to the flexible rubber material. Additional fastening is not required thanks to the net weight of the mats.

Laying OIL-EX under ballast bed





Laying lengths

The laying lengths of the track section to be fitted with protection systems are generally 20 m if only one single locomotive can be parked. If several locomotives are parked in the siding on a regular basis, multiple 20 m lengths must be laid as required. A protection system 10 m long is sufficient for small locomotives and motorised auxiliary vehicles less than 10 m in length.

Partial patching of the absorption mat

If certain parts of the absorption mat are more heavily stained than other parts, it might be necessary to repair such heavily stained parts earlier than the rest of the mat. It is possible to cut out the contaminated sections and replace them with a new, uncontaminated piece of OIL-EX. To do so, a rubber strip about 100 mm wide must be glued along the cut edges of the mat's lower surface so as not to damage the mat's insulation from the subsurface.

Installation beneath overhead lines

Guideline 880.1030 specifies that absorption mats on electrified tracks beneath overhead wires may only be installed if there is an added railway earthing system. To ensure the track system is safe as required, a grid should be laid on top of the ballast under the mats. The grid should be earthed at least every 100 m. However, such grid structures do not form part of Calenberg Ingenieure's scope of supply. The grids (structural steel mats with bars 5 mm in diameter) will ideally lie on top of the steel bars. A grid element is 5 m in length. The width of the grid between the rails is around 1430 mm and 720 mm at the sides. The individual grid elements are joined by welding the 16 mm steel bars together. The earthing system must conduct through these bars. The grids should be fitted shortly before laying the OIL-EX mats. The earthing system should be installed in accordance with the applicable DB AG regulations.

Areas of use

Thanks to its customised cut, OIL-EX mats can be laid extensively across sub-surfaces. This means protection can also be provided for hydraulic machines, storage of containers or decanting systems filled with hydrocarbons, even on unpaved ground outdoors.

Disposal

Oil-contaminated OIL-EX mats constitute waste requiring supervision. A waste disposal document – for oil-contaminated operating materials, for example – is required for disposal. The contaminated mats are categorised under GTIN 9008390014325 (used filtering media and absorbents with harmful contaminants) or AVV 150202 (oil-contaminated operating materials). You can apply for an official waste disposal document from a local waste management company. The waste disposal document allows you to dispose of OIL-EX mats collectively (max. 1.1 m³) or individually.



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