

## TRACKFIX POX

### Approval by the German Federal Railway Authority for operational testing of ballast bonding



#### Properties:

*TRACKFIX POX* is a rigid, 2 component epoxy based injection resin. Thanks to its high mechanical strengths, it can be used to fix rail ballast/gravel efficiently in railway construction.

#### *Other Application areas are:*

- Transitions between standard open rail and fixed rail stretches
- Suitable for full and partial Bonding I + II
- Protection of Gravel slope
- As protection against ballast shifting
- As protection against flying ballast
- For safety during work on tracks
- Position stabilization and/or correction
- Reduction of tamping intervals
- For Stabilization and Fixation of sleepers
- For easier cleaning of track ballast bed
- Reduction of dust production in operations

Due to its outstanding viscosity *TRACKFIX POX* is penetrating superbly into the track ballast in order to solidify it. Application of this product is being realized in dry to slightly damp areas.

#### Technical Data:

##### Substance data of components:

###### *Component A*

Consistency	liquid	
Colour	light yellow	
Odour	almost odourless	
Spec. density (23°C)	approx. 1,16 g/cm <sup>3</sup>	DIN EN ISO 2811-1
Dyn. viscosity (23°C)	approx. 6000 mPas	DIN EN ISO 2555

###### *Component B*

Consistency	liquid	
Colour	light yellow	
Odour	similar to amine	
Spec. density (23°C)	approx. 0,99 g/cm <sup>3</sup>	DIN EN ISO 2811-1
Dyn. viscosity (23°C)	approx. 20 - 40 mPas	DIN EN ISO 2555

Mixture of A- and B-component:

Processing temperature	10 - 30°C	substrate temperature
Mixing ratio A : B	2,27 : 1 (parts by weight) 1,92 : 1 (parts by volume)	
Viscosity of mixture (23°C)	approx. 400 mPas	DIN EN ISO 2555

Reaction data (at 23°C):

Pot-life	approx. 30 min	DIN EN 14022
Final curing	7 d	

Properties after curing:

Compressive strength	approx. 95 N/mm <sup>2</sup>	DIN EN 12190
E-modulus	approx. 190 MPa	DIN EN ISO 527
Tensile strength	approx. 34 MPa	DIN EN ISO 527
Elongation at break	approx. 6 %	DIN EN ISO 527

**Processing:**

The A and B components are being mixed homogeneously in the specified mixing ratio within a dry and clean vessel. Afterwards and due to its relatively long reaction time the mixed product can be applied by a one Component Pump.

Indicated injection pump *ME-1 K ELECTRIC*

For cleaning of pump and injection devices we recommend the use of *PUR-O-CLEAN* (see specific Technical Data Sheet).

The mixed product should be applied homogeneously over the prepared area of track ballast by an injection lance (using a flood grouting process). To facilitate this application, we recommend the use of an appropriate distribution head (an approx. 40 cm long T shaped discharge pipe with outlets).

It can be grouted over the track ballast without a pump too within the reaction time.

Thanks to its viscosity it penetrates quickly into the pores of the ballast sealing and solidifying it with a long lasting effect.

The application in the determined areas should be repeated in intervals upon total solidification of the ballast is achieved.

Alternatively, *TRACKFIX POX* can be injected into the ballast or under the sleepers by ram Injection lances.

Technical consumption approaches:

- ~ 3 - 4 kg/m<sup>2</sup> for Ballast slope reinforcement
- ~ 1 - 2 kg/m<sup>2</sup> for bonding ballast bed of up to 15 cm thickness
- ~ 2 - 4 kg/m<sup>2</sup> for bonding ballast bed of up to 30 cm thickness
- ~ 5 - 8 kg/m<sup>2</sup> for bonding ballast bed of up to 50 cm thickness

Consumptions stated here are based on our own experiences. Nevertheless, before starting work a field test should be executed within the area in order to calculate the very specific consumption on site.

For a quantity consumption of up to 48 kg *TRACKFIX POX* on 1 m<sup>3</sup> track ballast according to DBS 918061 (08/2021), the classification of the fire behavior according to DIN EN 13501-1:2019-05 with A2fl-s1 exists as a mandatory requirement for the use in traffic tunnels.

Applicable at ambient temperatures of : 10°C - 40°C  
Recommended product temperature : 15°C - 30°C

**Safety information:**

*TRACKFIX POX* component A contains epoxy resin. *TRACKFIX POX* B-component B contains amines. Both components are classified as hazardous according to Regulation (EC) Nr. 1272/2008 (CLP).

It is therefore necessary, before beginning processing, to become familiar with the precautions and safety advice as indicated in the material safety data sheet.

**Packaging:**

*TRACKFIX POX*  
*Component A* 20 Kg- Sheet metal hobbock

*TRACKFIX POX*  
*Component B* 8,8 Kg- Plastic canister

**Storage:**

Shelf life at least 12 month in original packaging when stored in dry conditions between 15 - 25°C, protected from heat, frost and direct sunlight.

After the expiration the use of the product is generally not recommended, unless an approval has been provided by TPH. This approval can only be obtained by the quality assurance department of TPH releasing the material after verification of main properties being within specification.

**Disposal:**

Small quantities of cured product residues can be disposed of as normal domestic waste. Dispose of not cured product components must be effected in accordance with the corresponding local regulations. For further information please refer to the material safety data sheets.

**Test certificates:**

*TRACKFIX POX* - Determination of identifying properties and performance characteristics of epoxy resin according to DIN EN 1504-5, MFPA Leipzig 2010

Injection behaviour in concrete structures - Testing of the crack filler *TRACKFIX POX* according to DIN V 18028:2006-06; MFPA Leipzig 2011

Development of the compressive strength of the epoxy-based injection resin *TRACKFIX POX* at lowest application temperature; MFPA Leipzig 2012

*TRACKFIX POX* – Investigation of the elution behavior of an epoxy resin-based injection resin in the column test with reverse flow direction; MFPA Leipzig 2016

Investigation on ballast bonded by *TRACKFIX POX*, Technical University (TU) Munich 2019

Examination according to TrinkwV 2012 and Coatings Guideline; görtler analytical services gmbH Vaterstetten 2019

Determination of compressive strength on Ballast bonded by *TRACKFIX PUR*, *TRACKFIX POX* and *TRACKFIX SIL*, TU Munich 2019

Approval for operational testing of the two-component injection resin *TRACKFIX POX* for ballast bonding; Eisenbahn-Bundesamt 2020

*TRACKFIX POX*, *TRACKFIX SIL*, *TRACKFIX PUR* - Reaction to fire test of floor coverings; MFPA Leipzig 2023

*TRACKFIX POX*, *TRACKFIX SIL*, *TRACKFIX PUR* – Determination of heat of combustion according to DIN ISO 1716:2010-11; MFPA Leipzig 2023

**Legal notice:**

The correct and thus successful application of our products is not subject to our control. A guarantee can be issued for the quality of our products within the framework of our sales and supply conditions, however not for successful processing. All data and specifications in this specification sheet are based on the present state of the art and the right to changes and adaptations for the sake of development remains explicitly reserved. The consumption specifications designated by us can be only average empirical values, where deviations are possible on an individual basis and therefore cannot be excluded by us.

**TPH Bausysteme GmbH**  
Nordportbogen 8  
**D-22848 Norderstedt**

Tel.: +49 (0)40 / 52 90 66 78-0  
Fax: +49 (0)40 / 52 90 66 78-78  
e-mail [info@tph-bausysteme.com](mailto:info@tph-bausysteme.com)  
Web [www.tph-bausysteme.com](http://www.tph-bausysteme.com)