



SIKA AT WORK

SNCF SERVICE HALL FOR ROLLING STOCK, AMIENS, FRANCE

Rail Fixing: Sika® Icosit® KC-340/7

Joint Sealing: Sikaflex®-406 KC

Grouting: Sikagrout®-238

BUILDING TRUST



SNCF SERVICE HALL FOR ROLLING STOCK, AMIENS, FRANCE

Renovation of track infrastructure

- Elastic rail fixing without anchor bolts
- Discrete fixation of the steel base plates using Sika® Icosit®-KC340/7 (elastic PU product)
- Sikagrout®-238 (rigid grout)
- Sikaflex®-406 KC as a fast trafficable sealant

PROJECT DESCRIPTION

The SNCF depot located in Amiens, France (Hauts de France area) is in charge of the maintenance of the regional trains. On various tracks the system, consisting of wooden sleepers directly supporting the rails, was old and no longer efficient, so needing renovation. Over the years, due to aging and environmental conditions, the wooden sleepers had deteriorated: as an example the #7 track was showing potential risks of rail spacing evolution and excessive deflection. The owner SNCF decided on the renovation of the complete rail fixing system.

PROJECT REQUIREMENTS

The consequence of the proposed Sika solutions was the replacement of damaged wooden sleepers with a flexible rail fastening without anchor bolts - Discrete Fixation of steel baseplates with Sika® Icosit® KC-340/7 (PU, elastic product, Shore A hardness 75±5), laid on a leveling layer made with a quick-setting, high mechanical parameters, rigid micro-cement mortar - Sikagrout®-238. The top joint between the rail and the steel profile was sealed with Sikaflex®-406 KC - 1-part, self-leveling, boosted, rapid curing, elastic joint sealant with high mechanical and chemical resistance. The works had to be carried out during a certain period of time limited by the maximum downtime of the tracks.

- Removal of wooden sleepers
- Anchoring of reinforcing bars (connectors to the existing concrete substrate)
- Creation of supports for baseplates using Sikagrout®-238
- Elastic rail fastening without any anchor bolts - Discrete Fixation of steel baseplates, bonded only with Sika® Icosit® KC-340/7
- Treatment of the rail/platform joint using a steel profile along the rail
- Sealing the joint between the rail and the steel cover with Sikaflex®-406 KC

Sika offers global solutions and large adapted product ranges to achieve the owner's goal. The contracting company has been trained by Sika Training Department (products of the complete system, tools and equipment, quality control process on site etc.). The challenge of this project lies in the specification of products with high performance in a very short time so as to meet the requirements of the tight work schedule and the short time in service delivery.



Existing old wooden sleepers and anchorages



Side of the track made of wooden pieces



Old wooden sleepers and anchorages to be removed



Reinforcing bars for connection to the existing concrete substrate



Creation of supports for steel baseplates



New cast supports using Sikagrout®-238 Chargé



The old wooden sleeper and the new sleeper made of Sikagrout®-238 Chargé

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SIKA SOLUTION

To meet the requirements for the renovated rail track, the following Sika proposal was made:

- Anchoring of steel rebars in the concrete foundation using ready to use and rapid curing epoxy product Sika® AnchorFix®-2+
- Pouring of rapid setting micro-concrete SikaGrout®-238 chargé, as a replacement for the wooden sleepers
- After specific preparation, application of an epoxy coating on the new sleepers and steel baseplates, using Sikacor®-299 Airless, then sand broadcasted with quartz 0.4/0.9mm
- Grouting of steel baseplate, only bonded, without any mechanical anchorage in the sleeper, using the Sika® Icosit® KC 340/7 system (primer Sika® Icosit® KC 330 Primer): flexible 2-part polyurethane polymer resin product, designed as a vibration absorbing, load-bearing, flexible grout. This system has also been used around the world for many years at rolling stock service halls.
- Treatment of the joint between the rail and steel plate covering the technical groove along the track: using the 1-part PU resin flexible, self-leveling sealant with high mechanical and chemical resistance, Sikaflex®-406 KC (with primer Sika® Primer 3N) and booster accelerated for the short reopening of service conditions.

Regular quality control at each step of the application process is implemented (substrate quality and preparation, dew point, shore A hardness). On-site performances have been reached according to product specifications. Over 5 weeks, renovation works kept to the initial schedule and allowed the rapid reopening to service conditions so as to resume the maintenance works for the trains in the SNCF depot. The project was completed in April 2021.



Casting of sealant Sikaflex®-406 KC along the rail



Completion of the work



Completion of the work



Formwork around steel baseplate



Grouted steel plates



Casting of Sika® Icosit® KC-340/7

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PROJECT PARTICIPANTS

Owner & Specifier: SNCF Technicentre HDF

Contractor : Entreprise SAMCO – Groupe Dupuy

Sika France : Refurbishment TM, Distribution Unit

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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