

Track covers
level crossings



RAILBETON®

LEONHARDT & HAAS KG
BETONWERKE CHEMNITZ



ICE station Berlin Rummelsburg

Track cover slabs are plane, normally reinforced concrete elements laid in various rail structures to allow road traffic at grade.

All track slabs are usually provided with a full perimeter steel frame. The differences depend on the standard rail fastening. The slabs consist of high-quality concrete in compliance with the road construction rules.

Installation of cover slabs in rail tracks and rail points of

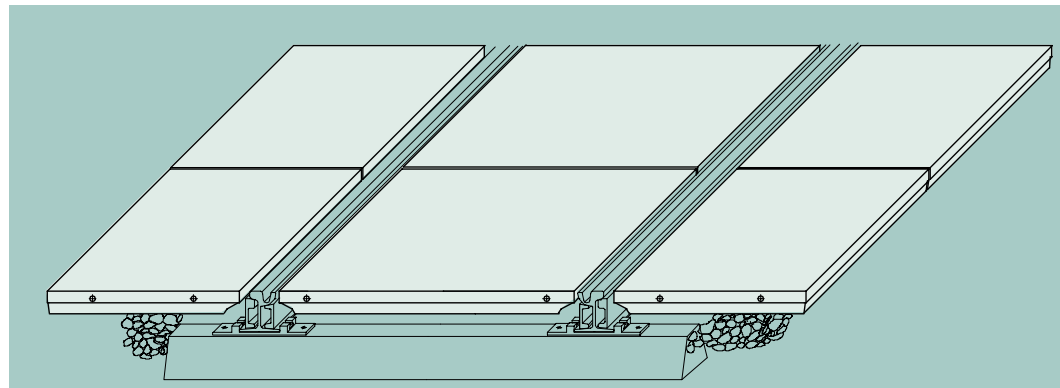
- light railways and trams
- industrial, harbour railways and branch lines
- DB AG and other railways
- narrow-gauge railways

For installation the „**RAILBETON-GP**“ instructions have to be observed. Standardized tender documents are available.

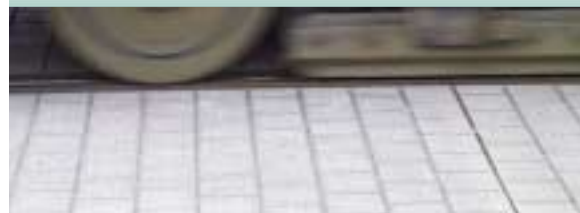
For over 40 years the rail cover slabs of the Chemnitz system by RAILBETON Leonhardt & Haas KG have been successfully used to meet the needs of transport route construction.

For level crossings at grade of DB AG the stronger rail cover slabs, type GÜP – system Chemnitz are used in accordance with the **EBA approval No. 21.21 Iwzb 012/05**. Across Germany about 707,000 sqm have been covered with this system. It has been used both for level crossings of DB AG and branch lines for industrial plants, for example as well as track coverings for trams of local transport operators. The skid-resisting property of the different surfaces is above 45 SRT units.

Track covering type GP – system Chemnitz



Jute pattern



Paving pattern



Sandblasted surface



Granite facing

The following surfaces are available:

- Jute pattern
- Paving pattern
- Ashlar-type finished surfaces, e.g. by sandblasting
- Decorative materials embedded in slab surface, e.g. klinker, concrete paving, natural stone paving
- coloured, e.g. yellow, red or anthracite



Grass vegetation



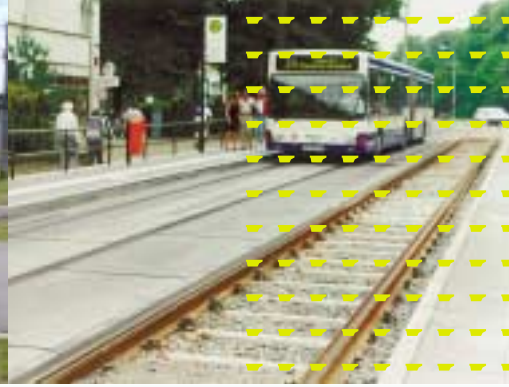
Sedum vegetation



Rail crossing with elastomer edge section



Würzburg, rail crossing with paving pattern



Combined stop Rostock



For over 40 years RAILBETON Leonhardt & Haas has been serving the needs of tram track construction by providing track cover slabs.

To cover magnetic circuits (e.g. of induction loops) non-metal slabs with plastic reinforcement are available. Also provided are insulated slabs for track circuits. The **stray current safety is guaranteed** verified by a relevant expert report.

The slabs are usually dowelled longitudinally by bolts (push-fit plugs). The centre slabs must be protected against transverse and upward displacement. With the edge slabs a welded spacers provides an external longitudinal joint to avoid tyre contact. The range of accessories has been extended by new longitudinal displacement protectors for edge slabs and coupling catches (take-up wedge) with longitudinal displacement protection for central slabs because edge and centre slabs may get displaced in oblique-angled crossings.

The slabs are **dimensioned** according to DIN Technical Report 101, SLW30/60. A dimensioning for special load cases is also possible.

Our specialists will be glad to give you advice during planning, bidding and project execution to find the optimum type of slabs. Rail point coverings are finished based on our measurements.



RSAG Rostock, GP with large-sett paving pattern in tram stop area



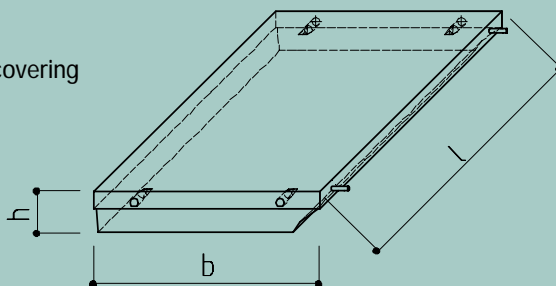
EVAG Erfurt, paving pattern

Plate designations

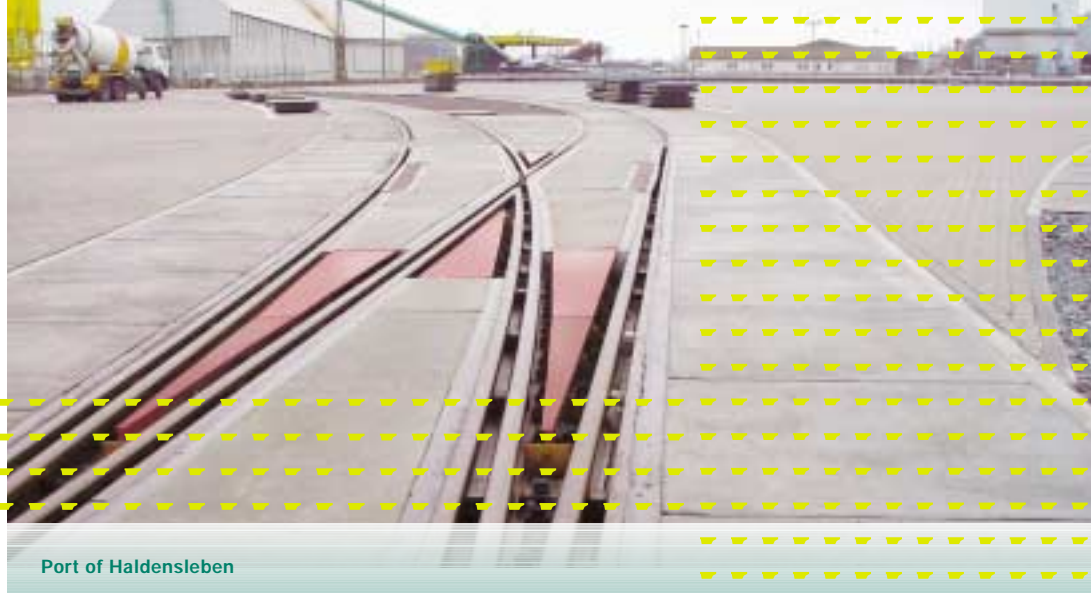
- GP cover slab for track and point covering
- GÜP track cover slab for crossings

GP/GÜP 1300 / 2600 / 120

Track slab	slab width	slab length	slab height



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Port of Haldensleben

Rail point and special coverings

Oblique-angled slabs and slabs with recesses

Rail track and point cover slabs GP/GÜP may have the following dimensions on customer's request. The same applies to oblique-angled (trapezoidal, conical) slabs and recessed slabs for insertions:

- Length: $\leq 2,390$ mm, (plus for right-angled GP/GÜP 2,600 mm)
- Width: 200...1,400 mm,
- Height: 100...180 mm.

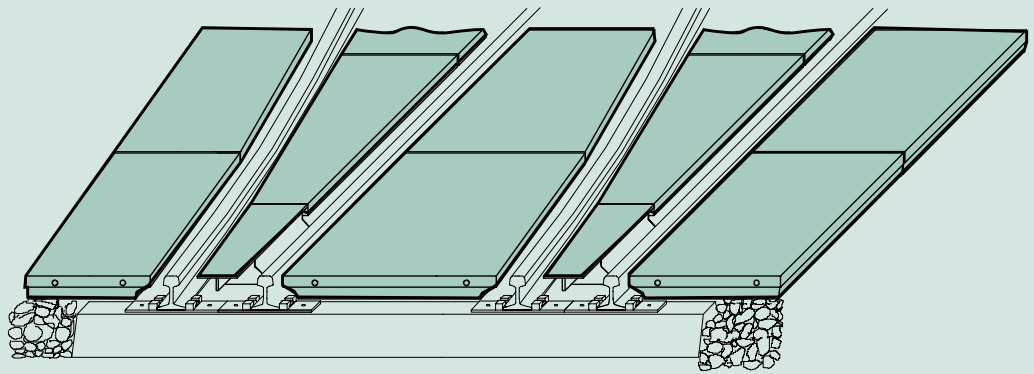
Special dimensions supplied had a maximum axial load of 124 mt and a bearing pressure of 0.1 kN/cm² have been supplied so far.

Experience with **harbour installations** and **industrial railways** has shown that track slabs are also beneficial as rail point covering:

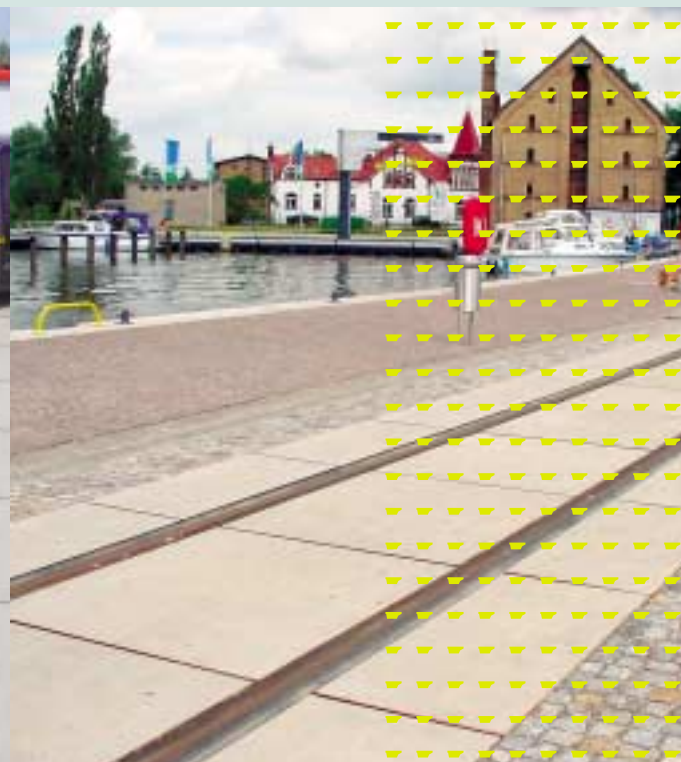
- high long-term use value compared to paving or bituminous covers
- point slabs are dowelled to each other
- no residual bituminous areas required
- protection against longitudinal and transverse displacement

Necessary steel structures, such as mountable tongue blade protectors, covers of the control gear and covering wedges are supplied.

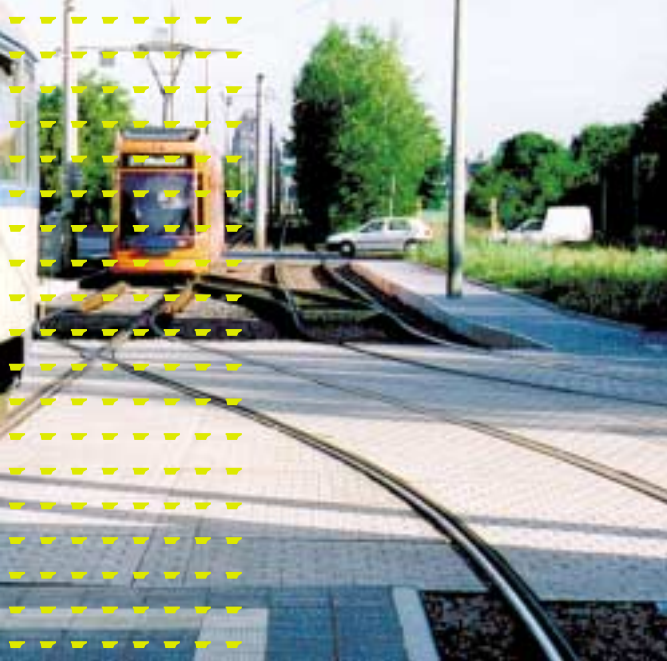
Covering example



Rail and point covering Berlin Fair Ground



Port of Neustrelitz

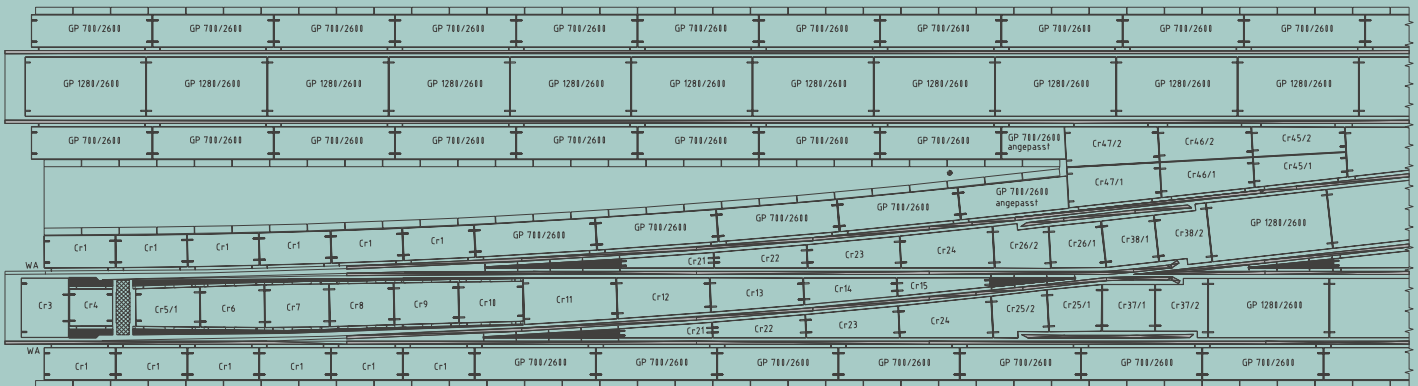


LVB Leipzig, track and point slabs with paving pattern (terminal station Meusdorf)



RSAG Rostock, Point covering Schröderplatz

GP rail point slab covering – installation drawing



Rail crossings of tram in Mannheim, MVV Verkehr AG



Fishing port of Rostock



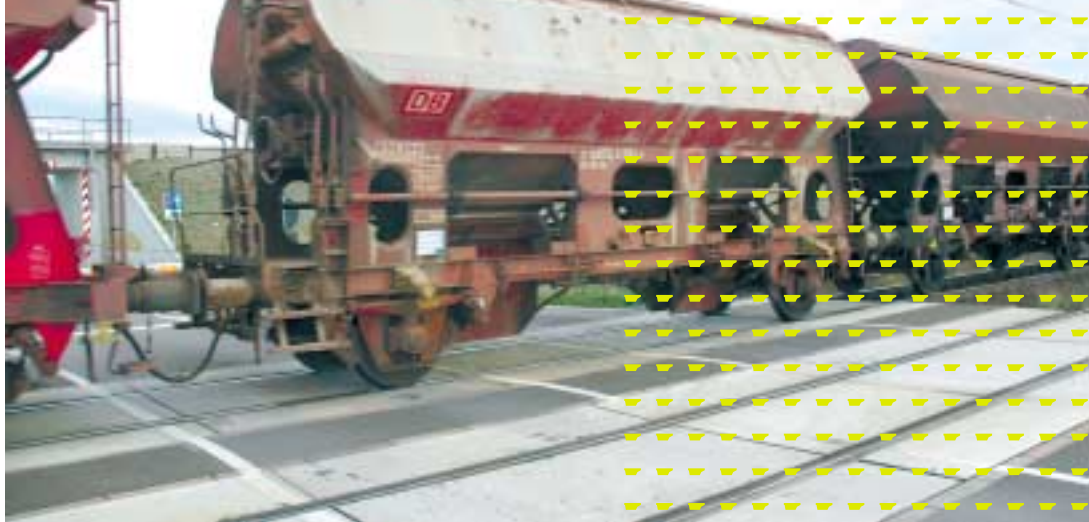
Point covering Cossen

Installation drawings

For special slabs, such as rail point coverings, our in-house design department provides the necessary installation drawings which are based on rail point installation drawings and the measurements at site.

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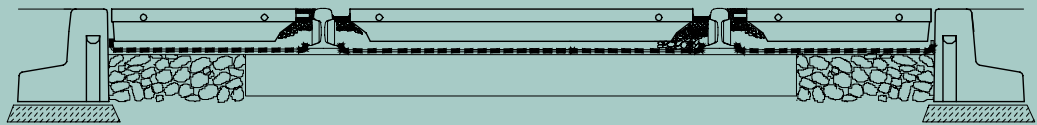
Rail crossings RAILBETON type GÜP – system Chemnitz

The basic design of the track slabs, type GÜP for road crossings is similar to that of the rail cover slabs, type GP. GÜP slabs, however, are designed for higher dynamic loads, such as railway crossings.

They are made in compliance with the **EBA approval, No. 21.21 Iwzb 012/05.**



Example of rail crossing slab covering



Chemnitz park railway, gauge 600 mm



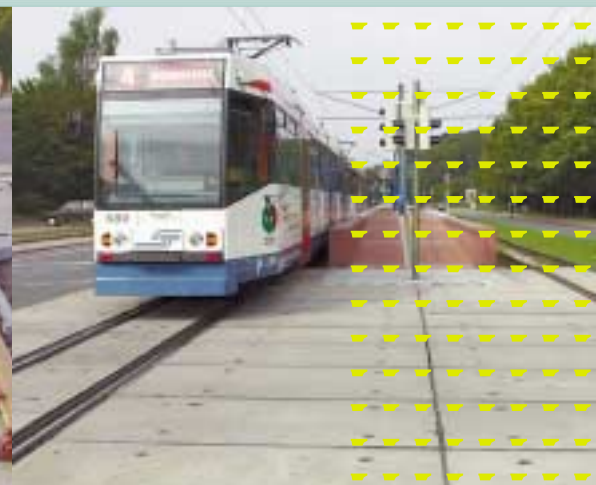
Berlin Fairground



Rail crossing RAILBETON, type GÜP, Essen



GP on roadway, Augsburg



GÜP type Bielefeld, new route Uni-Linie



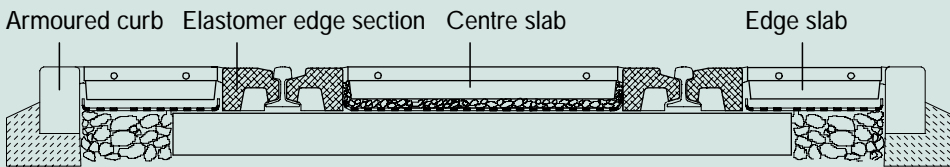
Berlin Rummelsburg



Rail crossing with elastomer edge section, Leipzig

Special forms of rail crossings

Railbeton elastomer edge section



Rail crossings can be a combined system of the types GP and GÜP and elastomer edge sections.

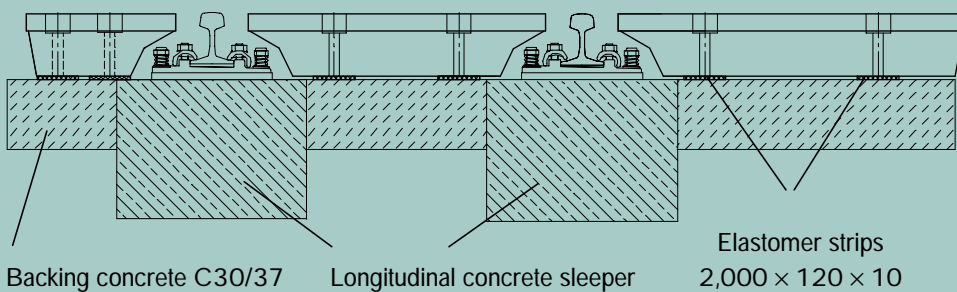
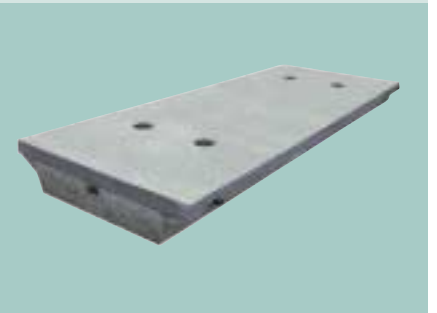
The combined systems meets the safety requirements for rail-road structures.



To keep the maintenance cost at a minimum, elastomer edge profiles and, if necessary, track cover slabs can be individually picked and installed again after completion of work.

Railbeton type Bielefeld

Modified track covers with a special height of 180 mm are supported by elastomer strips on longitudinal concrete beams and dowelled with screw anchors. The full perimeter steel frame and the reinforcement were hot-dip galvanized.



Backing concrete C30/37

Longitudinal concrete sleeper

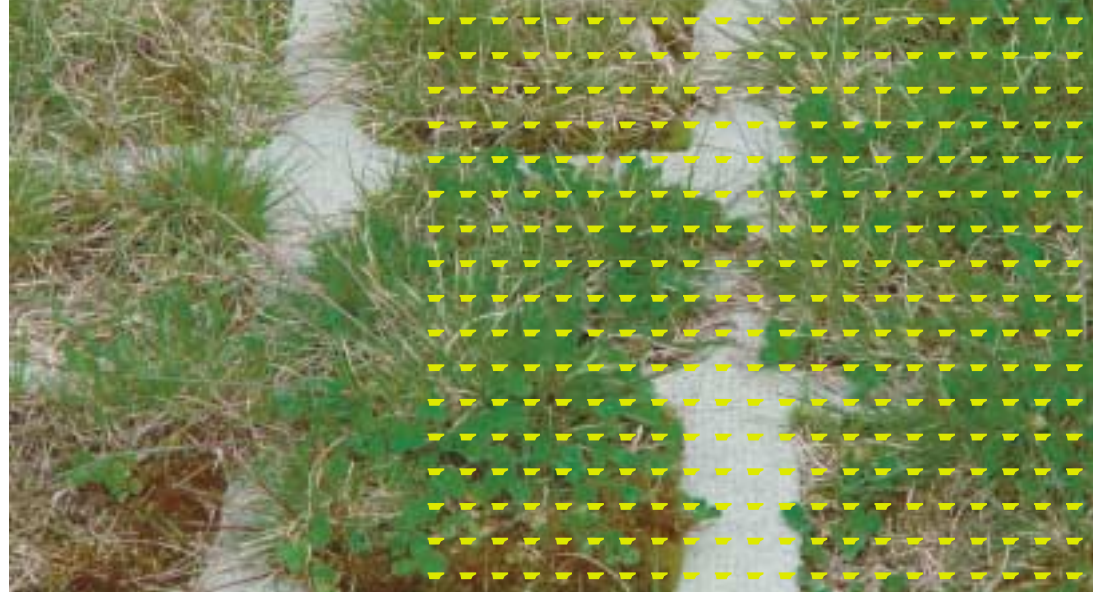
Elastomer strips
2,000 × 120 × 10



Rail crossing RAILBETON, Calbe

The grass track slabs (RGP) developed by RAILBETON Leonhardt & Haas KG make it possible for emergency vehicles to cross plantable rail tracks in inner cities. Wheel loads of $R \leq 50$ kN are possible.

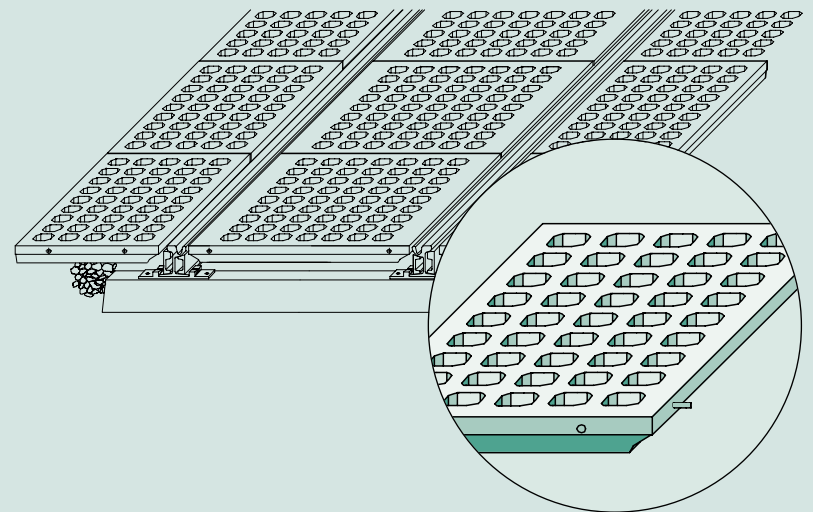
The rail tracks are safety insulated against stray current. Existing tracks can be subsequently planted. Vertical recesses of 105×105 mm are planted with dry grass or sedum.



Track cover Type RGP – grass recess



Track cover RGP, Rostock



EVAG, Erfurt



DVB, Dresden, combined track use by bus and tram

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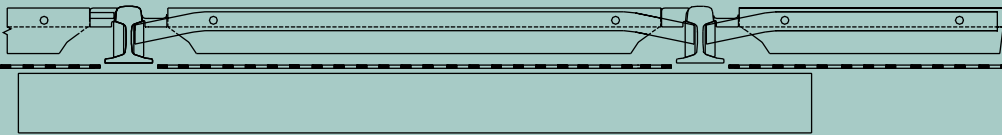
RSAG, Rostock



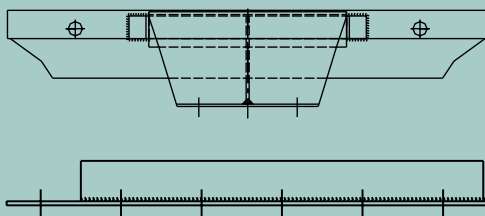
LVB, Leipzig

Accessories for all types

Transverse displacement and height protectors

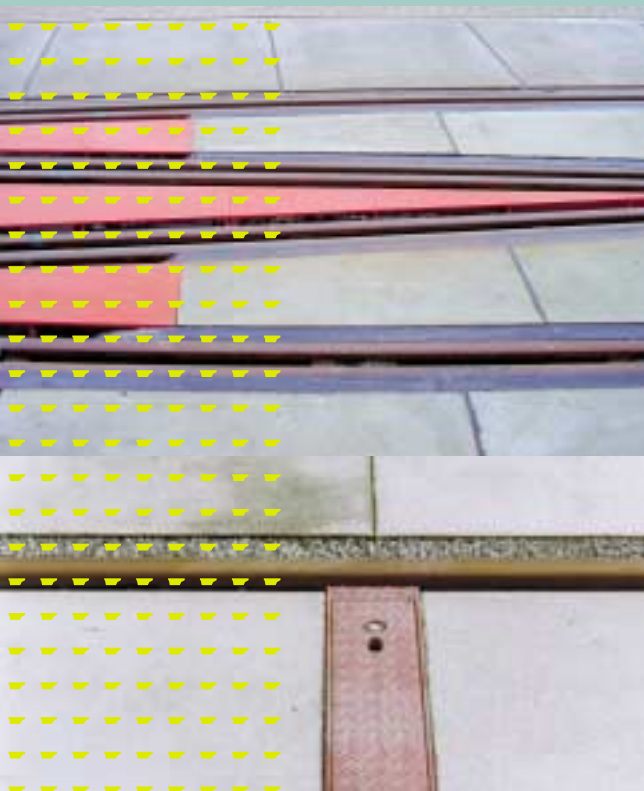
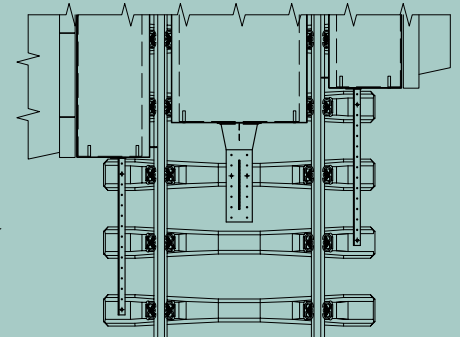
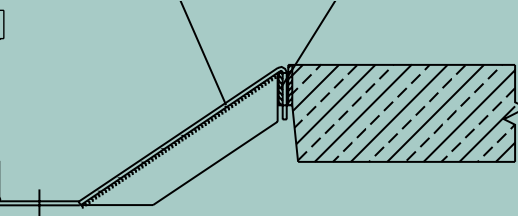


Take-up wedge (coupling catch)



Take-up wedge with longitudinal shift

Suspension plate

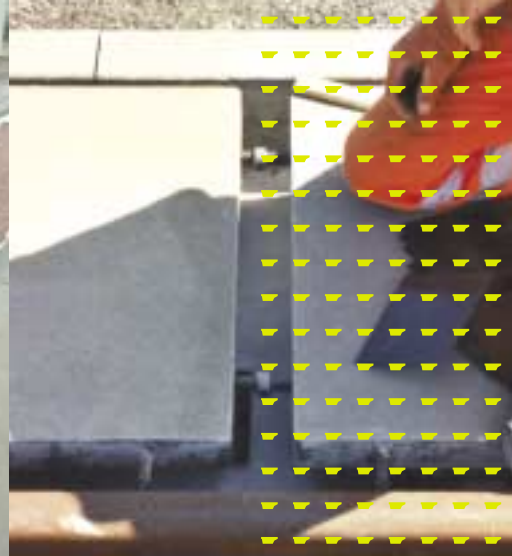


Accessories

Standard track cover slabs can be dowelled. The necessary accessories are recommended by our specialists according to the project requirements:

- welded spacers (for longitudinal and cross joints)
- bolts (push-fit plugs)
- spacer rings
- take-up wedge (coupling catch) with or w/o longitudinal displacement protection
- Transverse displacement and height protectors
- Wedge for rail point covering
- Tongue blade protector (side rail) for rail points
- Elastomer strips for chipping-free bearing
- Longitudinal displacement protector





Erfurter Verkehrsbetriebe, track slab laying

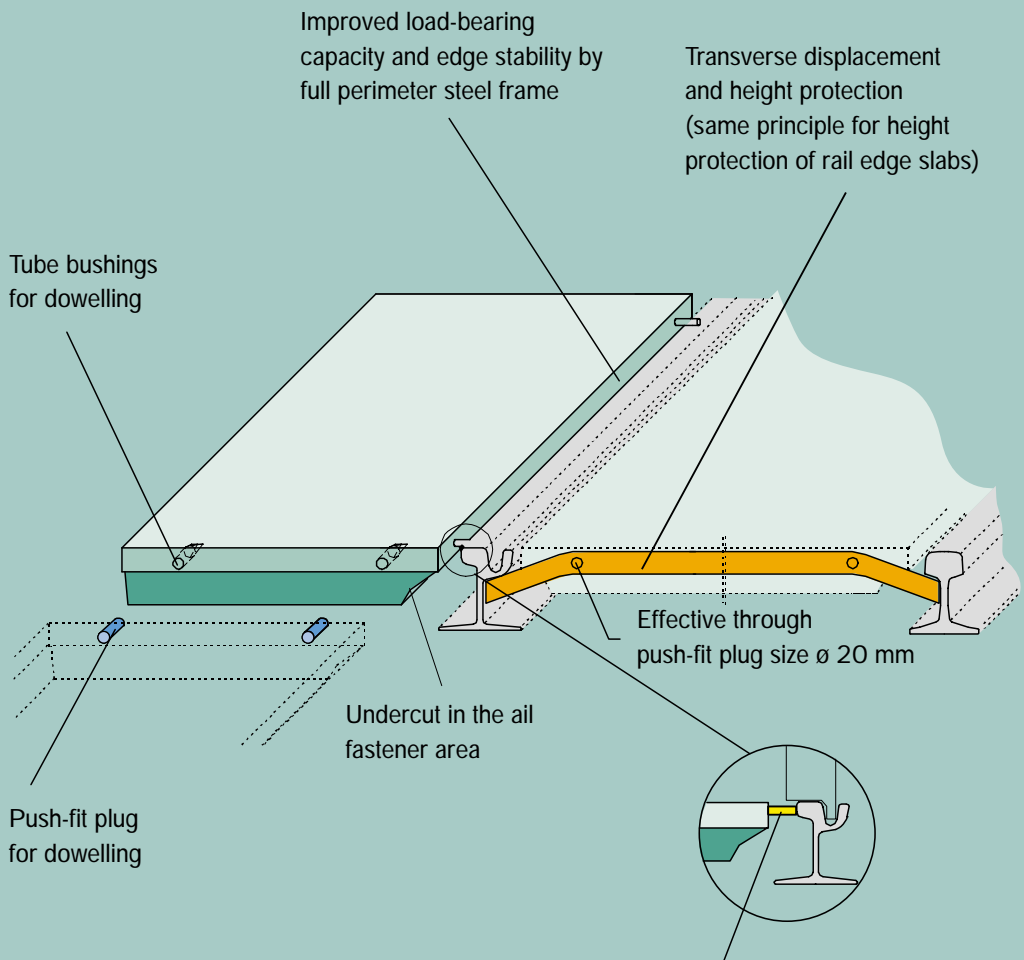
Technical details, installation and testing

Technical details

The track cover type GP was initially installed in Chemnitz/Saxony in 1972. Technical details, such as the doweling of slabs for better stability, accessories, such as transverse and longitudinal displacement protection, are a vivid example of how the system has been constantly improved. The track lining can be adjusted to the individual needs. After having reviewed necessary details our engineers submit a suitable proposal.

Installation

To ensure a long service life, it is necessary to observe the installation instructions „RAILBETON-GP“. Customers are provided with the necessary documents during meetings and together with delivery. In the standard version the slabs are installed on unbonded chipping beds.



Advantages of dowelling:

- stable position of slabs
- exact installation
- no height differences between slabs
- can be turned over push-fit plug

Welded spacers provide for an external longitudinal joint to avoid tyre contact. Plastic caps can be provided.





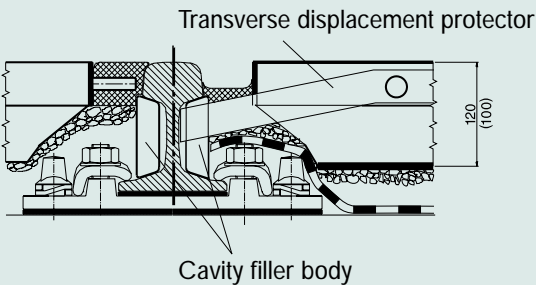
Leipziger Verkehrsbetriebe, covering of bridge Zwickauer Straße



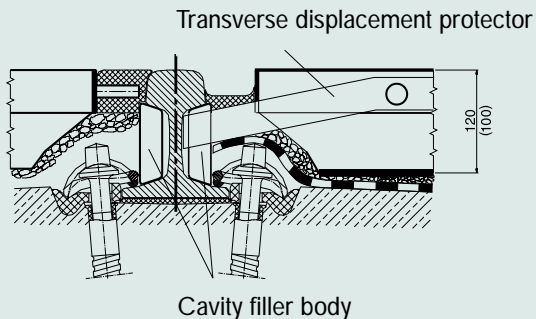
MfPA Leipzig, lab testing of slabs



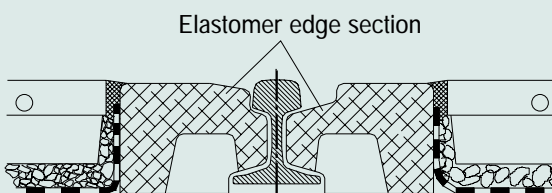
Pavement patterns, type KS or K
Track lining with spacers/transverse displacement protectors and cavity filler body



Pavement pattern type W
Track lining with spacers/transverse displacement protectors and cavity filler body



Track lining with elastomer edge section



Measuring the SRT units

The shaping of the longitudinal joints takes into account the tread profile of the rail car wheels. The standard type is filled with chippings up to 40 mm below the top edge of rail and grouted with bitumen with free space for the wheel flange. When elastomer edge sections are used it is not necessary to remove track slabs for maintenance.

The installation instructions give an exact description of the shaping.

Quality assurance

Load-bearing tests by MFPA Leipzig have verified the suitability for the load case SLW 60. The observance of the material and quality criteria is monitored by PÜZ Bau GmbH Munic trough regular, contractually agreed tests. After quality tests made by DB AG the company has been classified as **Q1 supplier**. All production procedures are subject to the requirements of the quality management system certificated in accordance with **DIN EN ISO 9001:2000**.



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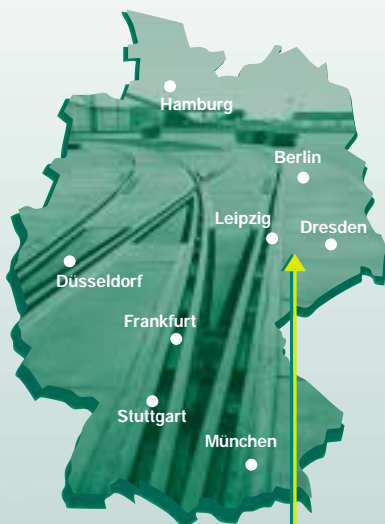
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Let's build together the roads of the future!

Precast concrete components for track construction



Our headquarters in **Chemnitz**
RAILBETON Leonhardt & Haas KG

RAILBETON Leonhardt & Haas KG has been making precast reinforced concrete units for over **70 years**.

As a system provider we fabricate under the brand name **RAILBETON** our own designs and standardized precast units for railbound traffic structures for city and other railways:

- standardized DB precast units (ducts, pits etc.)
- sleepers (gauge ≤ 1 m)
- track cover slabs
- track curbs
- cavity filler bodies
- platform edges (DB, local public transport)
- modular platform system RAILmodul
- tram stop curbs
- surface-mounted guiding systems for the visually impaired
- angular walls
- special-purpose structures etc.

Our **experienced consultants and engineers** give expert advice when it comes to planning, estimating or at site. Our long years' cooperation with German railroad companies has led to a large number of new developments and customized design solutions. Our in-house design department does the necessary **stress calculations** and takes over **complete planning and design jobs**.

We have the required approvals by the Federal Railway Authority (EBA). Our entire production is monitored by PÜZ Bau GmbH Munich. We were classified by DB AG as **Q1 supplier**. The company is certified and works according to the requirements of **DIN EN ISO 9001:2000**.

We would be pleased to send you our **detailed RAILBETON catalogue**.

