Slab track system IVES

// The solution for fast construction times and short track possessions

RHOMBERG SERSA RAIL GROUP

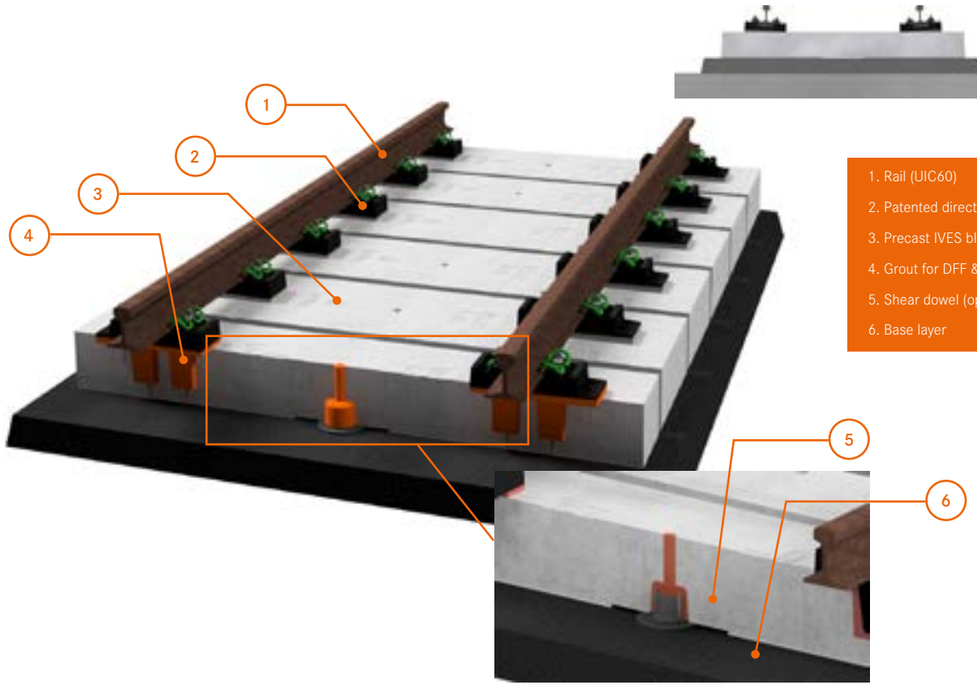
IVES - the result of decades of experience in railway construction

Rhomberg Sersa has been continuously constructing slab tracks in international projects for over 20 years. The IVES system was developed by Rhomberg Sersa as a solution for fast construction times and short track possessions in order to meet the high demands of modern track construction.

The combination of an easy-to-install base layer, prefabricated blocks and direct fastening with a fast-setting mortar enables to quickly release the track for operation.

A high degree of automation can be realised for different process steps.

Highest precision, shortest construction time: IVES.



1. Rail (UIC60)
2. Patented direct fastening (DFF 300 RS)
3. Precast IVES block
4. Grout for DFF & shear dowel
5. Shear dowel (optional, incl. lost formwork)
6. Base layer

Unlimited application possibilities

Different types of rail transport and standardised track system:
The use of the IVES ballastless track system is largely independent of the type of rail transport (urban transit, mainline, high-speed, heavy haul). Thanks to its simple design, any necessary adjustments can be made quickly and easily.

Special configurations:
IVES configurations specially tailored to different project requirements, such as the longitudinal version below, have already been designed and implemented.
Our experts at Rhomberg Sersa support customers in choosing the optimal solution.

System IVES
Your added value

- Short track possessions resulting in high track availability
- Safety through proven long-term performance
- Highest precision through prefabrication & innovative fastening
- Easy replacement & dismantling due to modularity

Efficient use of components and materials

// One of the core ideas behind the development of IVES was the efficient and appropriate use of components and materials, the quality of which must correspond to their respective stresses. Production methods and corresponding transport and construction processes were also taken into account in order to increase efficiency. The result are components that are quick and easy to produce, transport and install.

Rail fastening system

The patented DFF 300 RS system is based on tried and tested, approved components. The support fastening system has been adapted so that it fulfils the highest standards of precision and fatigue strength.

Grout for direct fixation

A high-strength, fast-setting grout is used to ensure a high-quality, swift and reliable connection between the rail fastening elements and the precast concrete element.

IVES blocks

These are used to support the rail fastenings and to transfer the traffic loads to the base layer. The supporting elements can be produced locally using various methods. They are installed using an excavator, mobile crane or gantry crane.

Base layer

The base layer is preferably made from standard road construction asphalt using conventional methods. Optionally, shear dowels are placed in the base layer in order to to achieve the required lateral and longitudinal track resistance. The number of shear dowels depends on routing parameters.

The installation of IVES is characterised by the following principles:

- Combination of bottom-up and top-down installation principles: increasing precision in the construction process
- High degree of prefabrication and use of innovative components
- Possibility of automating various process steps
- Easy to repair in the event of an accident, easy to dismantle in line with the circular economy

IVES installation technology: simple. reliable. fast.

Installation of the base layer
The base layer, preferably consisting of asphalt, is usually applied with a road paver according to the bottom-up principle. Solid shear dowels are installed according to routing parameters to ensure the blocks reliably stay in place.

Placing the IVES blocks
The position and height of the IVES blocks is defined by the base layer. Any superelevation is constructed in the base layer. Thanks to their level surface, they can be driven on with rubber-tyred vehicles immediately after being laid. This allows them to be used as a logistics route during construction.

Formation of the track panel
The track panel is formed connecting rails and rail fastening elements using tried and tested methods. The screws and dowls of the rail fastening systems are protruding into the grouting pockets on the top of the IVES blocks.

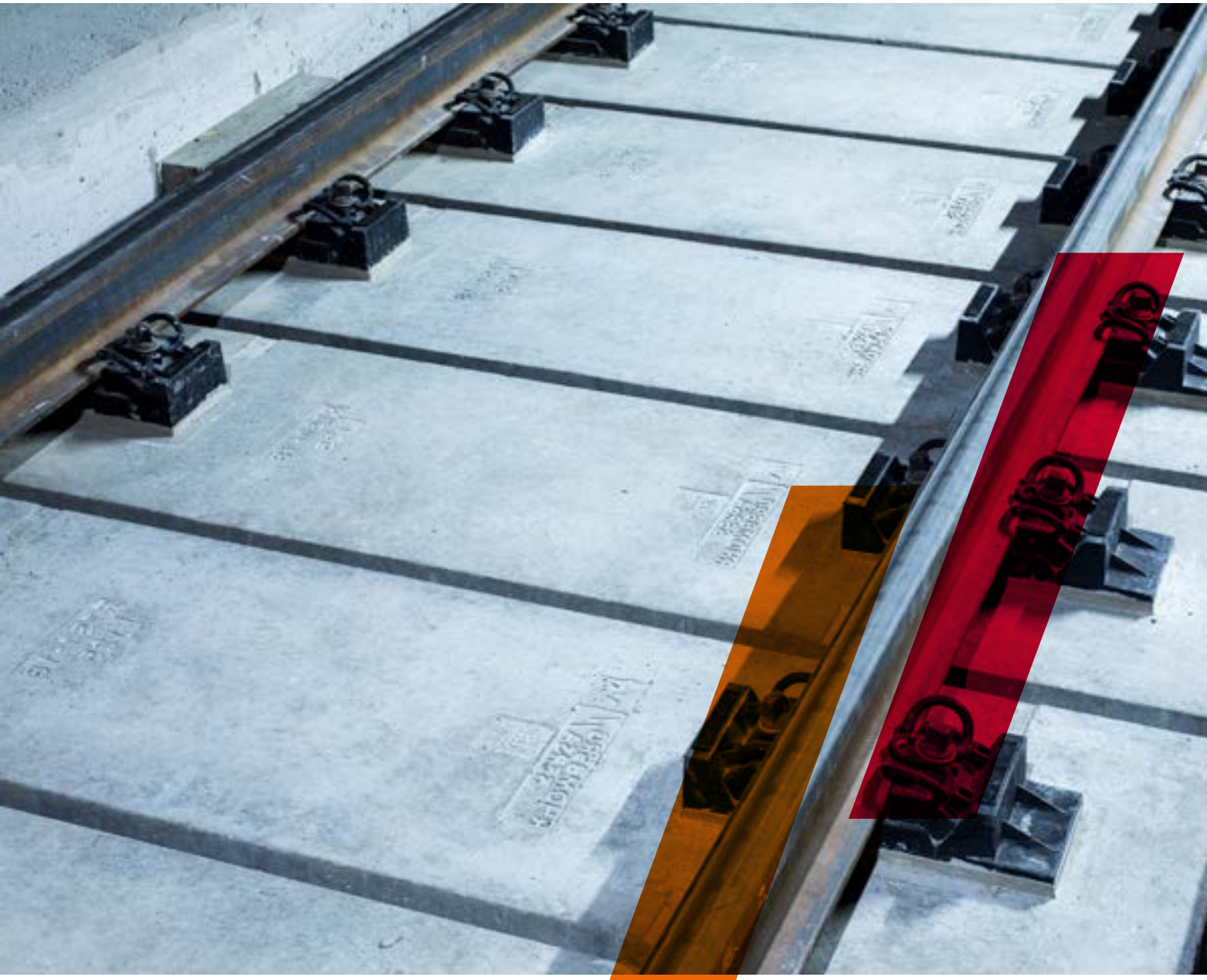
Fine adjustment of the track panel with RSRG RhoFAS track adjustment system
The track panel is brought into its exact position ensuring correct track geometry. Thanks to the top-down principle, inaccuracies from the previous steps can be neutralised at this stage. The fixation system combined with the design of the IVES blocks allows for adjustment in all three dimensions (vertical, horizontal and longitudinal).

Grouting of the rail fastening systems
The free spaces between the rail fastenings and the the gaps between the supporting elements are filled with highstrength mortar. This permanently fixes the exact track geometry.

Asphalt base layer with shear dowels

Installed IVES blocks

IVES blocks with track panel



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