

ELASTIC AND HIGHLY ELASTIC RAIL FASTENING System W 30

The climate expert for conventional rail, heavy haul, turnouts and crossings

System W 30 – made for harsh climates



Old designatio System W 30

Rail fastenings for ballasted track with concrete sleepers and for turnouts and crossings with and without inclination.

Old designation	New designation
System W 30	System W 30 – Conventional rail configuration
System W 30 HH	System W 30 – Heavy-haul configuration
System W 30 T	System W 30 – Turnouts and crossings with or without inclination



W 30 – Conventional rail



W 30 - Heavy haul



W 30 - Turnouts and crossings

See the following pages to discover the application and configuration options, as well as interesting details on construction and materials.



High resistance – minimum wear

System W 30 is used mainly with the popular combination of ballasted track and concrete sleepers, for which the sleeper shoulders provide stability for both the track and the fastening system, while the flexible ballast layer evenly transmits the vertical forces generated by the train into the substructure. The stable rail deflection minimises vibration. The components used in the system make it extremely low-maintenance, enabling safe travel thanks to their high toe load, dynamic fatigue strength and high rail creep resistance – even under extreme temperatures or high atmospheric humidity.

Under difficult climate conditions, in particular, it must be ensured that rail systems can be operated reliably and installed and operated cost-efficiently. System W 30 can be flexibly adapted to each application, and its costefficient assembly proves a winner every time: All fastening components can be delivered preassembled directly to the site. All that is left to do on-site is to install and tension the rail, with no need to remove the fastening components from the sleeper during welding, which saves time and costs at the assembly stage. In addition, all components, including the dowels, are easy to replace, which also ensures cost-efficient operation.



Maximum protection and cost-effecient operation – System W 30 is convincing all along the line.

SYSTEM W 30

Rail fastening for concrete sleepers and ballast

Providing maximum protection for the track bed is vital in heavy-haul traffic in particular, which exposes the track system to extremely heavy weights, and also in regular passenger and transportation services. With its high fatigue strength, the Skl 30 tension clamp is able to withstand the dynamic vertical motion generated when trains pass along the rails. Another benefit is the fact that the permanent tension ensures the tension clamp and screw cannot come loose, and are thus maintenance-free. The result, in combination with the proven *cellentic* rail pad, is optimised elasticity, vibrations are cushioned and structure-borne noise is reduced. The material, an EPDM elastomer, offers impressive performance in response to temperature, ageing and weather conditions. That means you can rely on a low-maintenance system in every respect.



The W shape of the Skl 40 is your assurance of safety. Two highly elastic, independently operating spring arms hold the rail firmly in place.



System components and specifications



Tension clamps: Generational change for improved resistance

Climate-friendly passenger transportation, reliable goods transportation, efficient logistics: Rail traffic is becoming increasingly important, and this places new demands on the rail network. The new generation of clamps was specifically developed to respond to the growing burden on rails and fasteners. The new M generation of Vossloh tension clamps is more robust and therefore guarantees safety on the track into the future, regardless of growing demands and higher loads. The tension clamps are manufactured using state-of-the-art processes at the new production facility in Werdohl. That is also where its more compact and lighter design was created, which both reduces logistical costs and saves resources.





Safety and track availability for all generations

The factor linking all tension clamps is their force-deflecting design: On all stretches of track, including on tight curves, the track remains in position while the trains accelerate and brake. The track bed does not move, while noise and vibration are contained. As a result, the tension clamps ensure maximum safety and track availability.

Old generation



Tension clamp Skl 30

- > Fatigue strength 2.2 mm
- > Spring deflection 15.5 mm through two spring arms
- > Toe load 12.5 kN
- > Frequency approx. 530 Hz

New generation



Tension clamp M9

- Fatigue strength up to 3.2 mm
- Spring deflection > 20 mm through two spring arms
- Toe load > 11.5 kN
- > Frequency > 1,000 Hz



Tension clamps M9 can replace the previous generation of tension clamps and are optimised for a number of requirements. The M9 clamp is especially well suited for narrow curve radii, for example.

The new M generation clamps are currently in the development stage. The values shown here are based on laboratory results, and the assessment following the initial operational trials is positive.

Comprehensive protection with **Vossloh** *protect*

High humidity levels and high salt content in the ambient air are just two examples of environmental impacts that will attack some components in rail fastening systems. That is why all tension clamps and sleeper screws and T-head bolts can be coated with Vossloh *protect* for optimal protection. This innovative coating provides traditional barrier and cathodic corrosion protection that prevents damage from loose ballast, among other things. This is an important factor when it comes to reducing lifecycle costs. The coated components are also protected from aggressive industrial climates like acid rain, major temperature fluctuations, and other extreme conditions.





Extraordinary elasticity provided by *cellentic* intermediate plates

In these systems, *cellentic* intermediate plates help protect the tracks so they will require less frequent maintenance. The EPDM elastomer developed by Vossloh can provide optimal elasticity and rigidity in every application to ensure that loads are ideally distributed and vibration cushioned. It remains resistant to chemical substances, temperature fluctuations, and weathering even under challenging environmental conditions.

9 System components and specifications

System W 30

Designed for your application





Conventional rail (ballasted track with concrete sleeper)



Heavy haul (ballasted track with concrete sleeper)



Turnouts and crossings with and without inclination (ballasted track with concrete sleeper)

Click on the illustration to go directly to the system.



SYSTEM W 30 Full elasticity for conventional rail



Back to System W 30 overview



SYSTEM W 30

Less wear for a longer service life – Heavy haul







SYSTEM W 30

Efficient in turnout sleepers – Conventional rail and heavy haul







System W 30 – **Specifications** at a glance



	Ballasted tra	System W 30 ack with concrete sleeper	System W 30 Turnouts and crossings with or without inclination	
	· 興		· 興	
Field of application	Conventional rail	Heavy haul	Conventional rail	Heavy haul
Axle load	≤ 26 t	≤ 35 t	≤ 26 t	≤ 35 t
Speed	≤ 350 km/h	≤ 160 km/h	≤ 350 km/h	≤ 160 km/h
Curve radius	≥ 400 m	≥ 400 m	≥ 400 m	≥ 400 m
Height adjustment	optional	optional	optional	optional
Gauge adjustment	± 10 mm	± 10 mm	± 10 mm	± 10 mm

Note: Content, figures and specifications in this brochure reflect the performance of the fastening system under ideal conditions, but this will always depend on external factors and influences. Contact us so we can work with you to develop a solution tailored to your project and your requirements. The information in this document represents the state of technical development at the time of publishing; the product may have been subsequently updated as a result of ongoing research and development work at Vossloh.



Ice-cold professionals

Whether in deserts or in steppe landscapes – in regions with high or frosty temperatures, the climate-resistant System W 30 is in its element. A total of about 700 km of heavy-haul tracks have been installed in desert regions in the US and in the United Arab Emirates. In mixed traffic, goods trains with axle loads of up to 32.5 tonnes reach speeds of 120 km/h, while passenger trains travel as fast as 200 km/h. In the inhospitable regions of Mongolia or Russia, too, System W 30 is there to ensure reliable conventional rail and heavy-haul transportation.

Want to know more about our references? Drop us a line:





Mongolia

Heavy-haul lines from Tavantolgoi to Gashuunsukhait in the Gobi Desert About 600,000 sleeper sets delivered and

installed since March 2020

Further track section fitted with 40,000 sleeper sets

30 million tonnes of goods transported daily

Mainly raw materials for steel production



Russia

More than 1,000 km of track in total In use in the heavy-haul sector since late 2014 Designed for a 1,520 mm gauge Axle load: 27 tonnes

Total track loading: 70 megatonnes



Interested in more products in the Vossloh portfolio for your rail infrastructure?

Take a look at our Product Finder, where you'll quickly find the solution that's right for you!



Vossloh Fastening Systems GmbH

Vosslohstraße 4 D-58791 Werdohl Phone +49 (0) 23 92 / 52-0 Fax +49 (0) 23 92 / 52-448

info.corecomponents@vossloh.com vossloh.com

> The trademarks used, Vossloh, Vossloh, O, *cellentic* and *amalentic*, are registered trademarks that are internationally protected in many countries. These trademarks may be used only with the prior consent of Vossloh AG. This publication may also contain third-party trademarks. The use of these trademarks is subject to the terms of use of the respective owners.