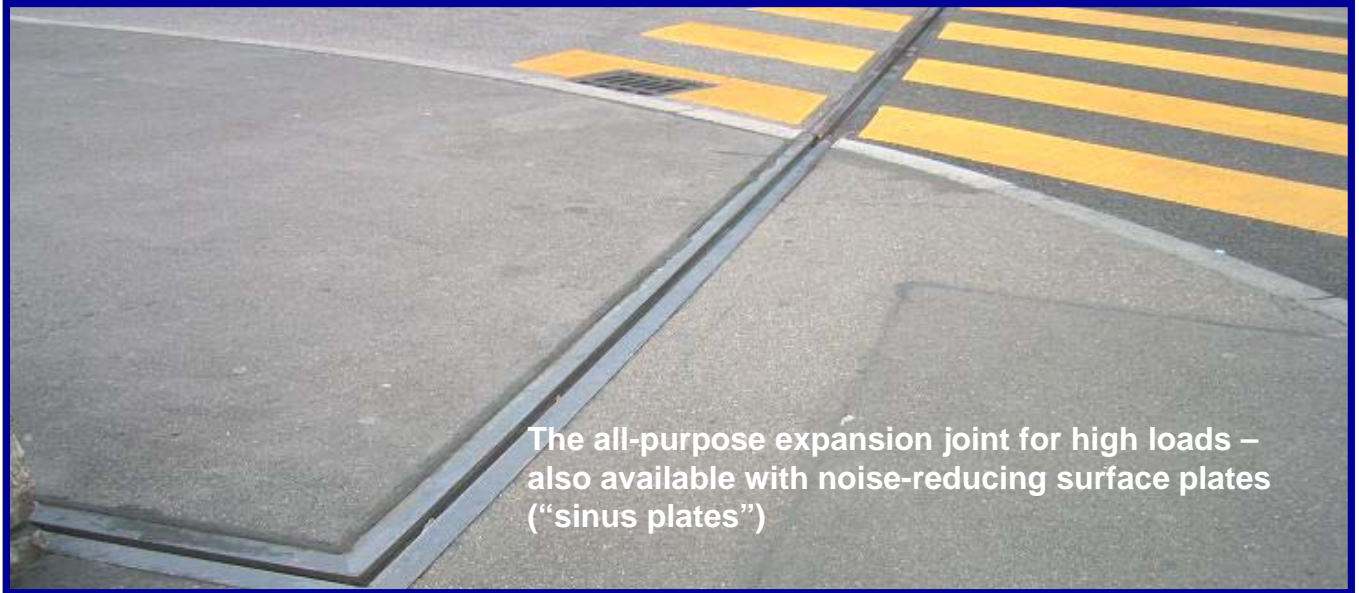




TENSA®GRIP Type RS



The all-purpose expansion joint for high loads – also available with noise-reducing surface plates (“sinus plates”)



TENSA®GRIP Expansion joint

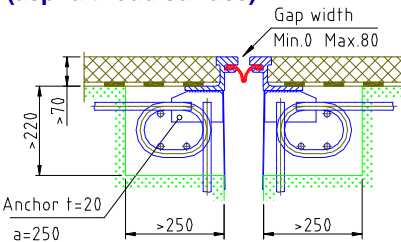
Principle

The mageba single gap expansion joint TENSA®GRIP Type RS consists of two heavy steel profiles (S235-JRG2) with anchor loops and a replaceable 5-point sealing element which ensures 100% water-tightness.

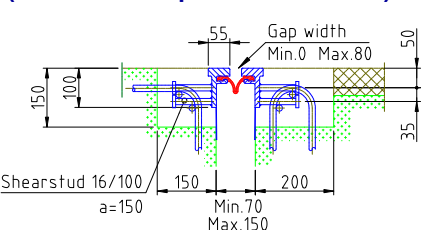
The standard TENSA®GRIP Type RS joint allows for a total movement of up to 80mm. For special structures a movement range of up to 200 mm is possible. This can be achieved using a special sealing profile.

The TENSA®GRIP Type RS joint is designed for bridges with heavy traffic. Therefore, snowploughs or crawlers can travel over the joint without causing any damage.

TENSA®GRIP Type RS-A (asphalt road surface)



TENSA®GRIP Type RS-B (concrete or asphalt connections)



Characteristics

Asphalt carriageway, TENSA®GRIP Type RS-A

- Joint features connections to waterproofing membrane of the bridge and is fixed with anchor loops.
- Suitable for road surface thicknesses of 70mm to 250mm. Weight approx. 70 kg/m.

Concrete carriageway, TENSA®GRIP Type RS-B

- Joint features no connection for waterproofing membrane of the bridge and is anchored by horizontal shear studs. Weight approx. 40 kg/m.

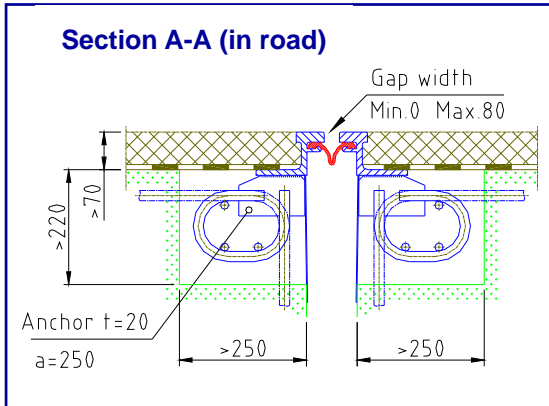
Special equipment TENSA®GRIP Type RS-LS

- Joint with noise-reducing surface for longitudinal movements of up to 100 mm.

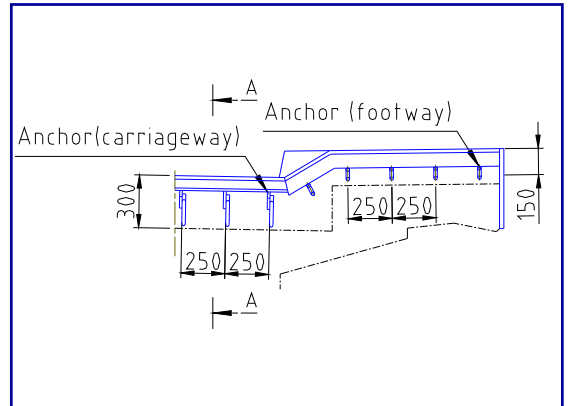
Design options

Standard design

Cross section

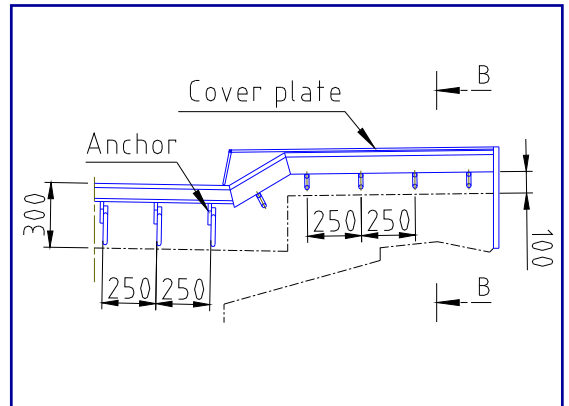
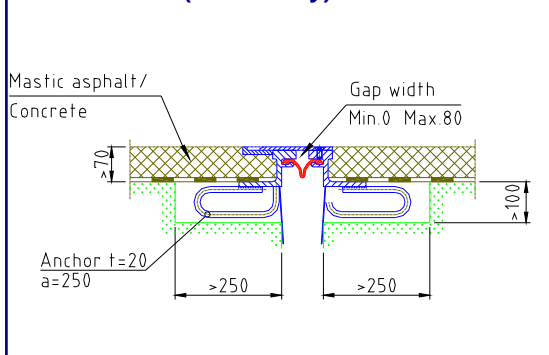


Longitudinal section (showing footway)



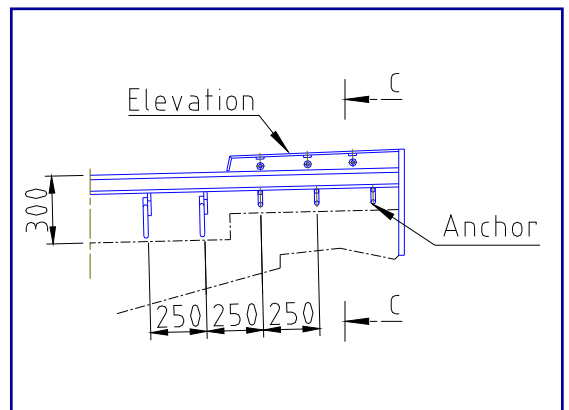
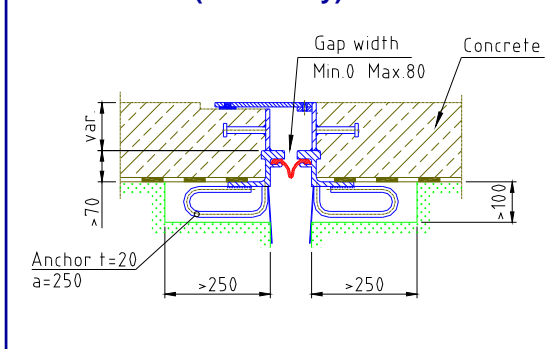
Standard detail at footway (joint rises to suit surface level)

Section B-B (in footway)



Alternative detail at footway (section added to make up difference in level)

Section C-C (in footway)

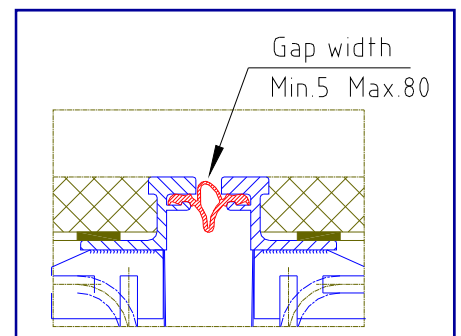


Rubber hump seal: optional and optimal

mageba developed and patented the so-called hump seal. It consists of an elastomeric sealing element with an asymmetric hump on the top. Due to this special shape, the hump maintains its height as the joint opens and closes.

The hump profile keeps the joint gap free of dirt, especially of stones or other larger objects.

At the same time, the profile acts as a double-sealing band that keeps the joint watertight. In addition, it protects pedestrians with high heels from being caught in the joint gap.



Noise-reducing surface

Particularly in urban areas, expansion joints should not generate noise if this can be avoided. Therefore, mageba has developed its expansion joints to feature an optional noise-reducing surface.

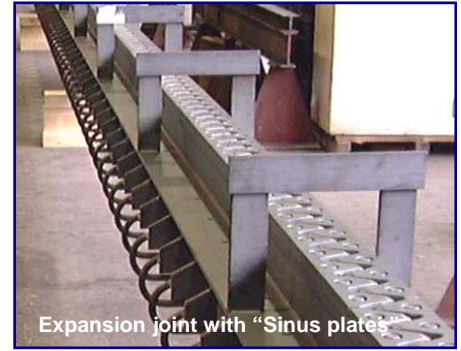
The unique patented "sinus plates" with their "teeth" design eliminate straight edges perpendicular to the direction of travel and ensure that vehicles travelling over the joint continuously grip the surface. In this way, noise generated by vehicles travelling over the joint is demonstrably reduced.

In contrast to finger joints, there is no restriction on the type of traffic passing over expansion joints with sinus plates. The special design of these sinus plates also permits cyclists to pass over the joint safely.

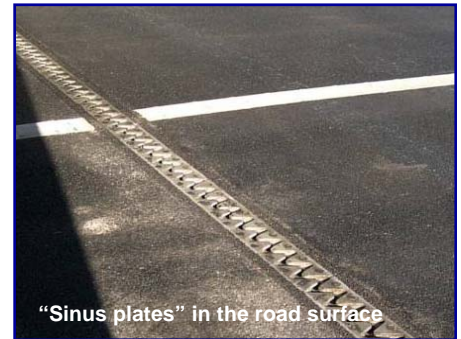
Expansion joints with sinus plates, called TENSA®GRIP SILENT, are very suitable for use on bridge structures in residential areas and in other areas that are sensitive to noise.

Noise measurements performed on different structures by an independent institute have shown that expansion joints with sinus plates are significantly less noisy (up to 70% less noise generated) than other types of expansion joint.

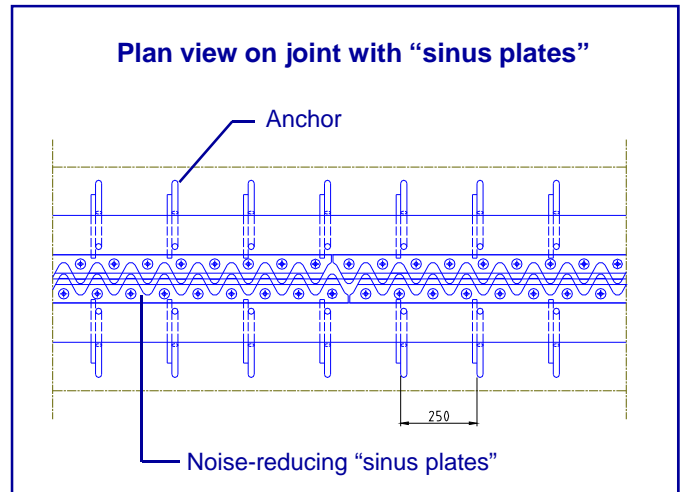
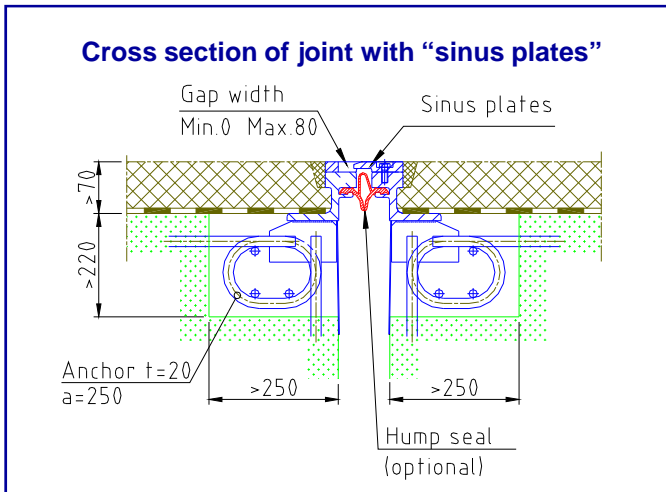
Detailed documentation on noise measurements is available upon request.



Expansion joint with "Sinus plates"



"Sinus plates" in the road surface



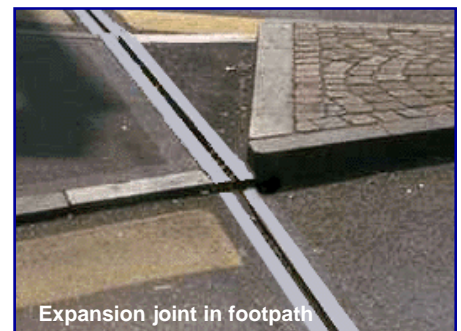
At footpaths: well adapted, well anchored

In footpath areas, the TENSA®GRIP Type RS joint adapts without any problems to the bridge geometry. It is connected with an anchor loop or, where there is a lack of space, by shear studs.

Watertight and easily-replaced rubber seal

The TENSA®GRIP Type RS Joint is 100% watertight and its rubber seal can be easily replaced:

- Sealing profile deliverable in EPDM or CR material
- A 5-point sealing system in the clamp area ensures 100% watertightness
- Screwless connection for easy and quick replacement – even after many years of operation



Expansion joint in footpath



Road before the installation of the joint



Expansion joint before installation



Welding of the expansion joint

Assembly

The joints are assembled in the factory and delivered in a fixed condition according to the specified pre-setting value.

On site, experienced technicians position the joints precisely and connect the anchoring to the bridge's reinforcement. Then the joint's temporary fixings are removed to allow the joint to open and close with the bridge movements, and the recesses are filled with concrete.

TENSA®GRIP joints can also be installed in stages as necessary. In this case the joints are delivered in sections which then are connected together.

Corrosion protection

The following standard corrosion protection is normally provided:

- Sandblasting SA 3
- Zinc metal spray galvanizing, 50µm
- Two 40µm layers of top coat

Upon request alternative corrosion protection can be provided.

Quality for good reasons

Many thousands of TENSA®GRIP Type RS joints, used under heavy traffic conditions for over 40 years worldwide, give proof of quality and durability.

This is due to:

- Qualified staff with many years of experience
- High-quality materials
- Modern Quality Assurance System (ISO 9001:2000 and EN 729-2)
- Professional installation of joints on the bridge

Text for an invitation to tender

As text for an invitation to tender for TENSA®GRIP joints we suggest:

- Installation of watertight steel expansion joints according to drawings and satisfying static and construction requirements.
- Connection materials for any sheet metal covers required to be of stainless steel 1.4571 in accordance with DIN 17440.
- Treatment in the factory of corrosion-endangered steel surfaces at the steel/concrete interface, standard grade of cleanliness Sa 2.5.

mageba product range



Bridge Bearings

- Pot Bearings
- Elastomeric Bearings
- Earthquake Bearings
- Spherical Bearings
- Incremental Launch Bearings
- Special Bearings
- Rocker Bearings



Expansion Joints

- Single Gap Joints
- Modular Expansion Joints
- Sliding Finger Joints
- Cantilever Finger Joints
- Matt Joints
- Railway Joints
- Architectural Joints



Shock Absorbers

- Hydraulic Shock Absorbers
- Spring Dampers



Services

- Inspections
- Testing
- Installations
- Refurbishments
- Cleaning
- Remote monitoring

More information on mageba and its products can be found on www.mageba.ch.

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