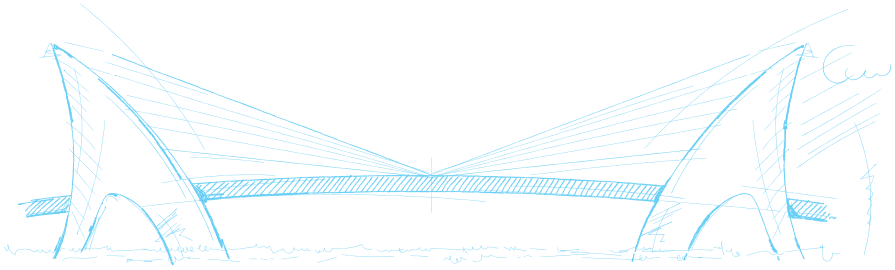
SCHREIBER

- 50 km slide path
- Low friction
- Long service life

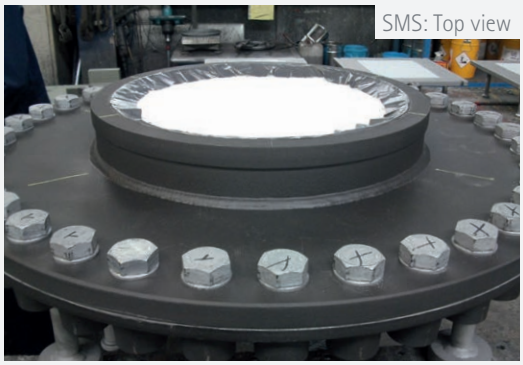


Aim

SMS® is a special sliding material for sliding bearings in a very wide range of applications, and in particular for spherical and pot bearings.

Description

SMS® is a modified polytetrafluorethylene (PTFE). Like PTFE, SMS® not only has remarkable sliding properties due to its very low coefficient of friction. SMS® also has markedly superior loading capacities. All of this reduces the running costs of bearings, and in particular of spherical and pot bearings.
SMS® continues to demonstrate these exceptional material properties even at extremely high or low temperatures.



SMS: Top view

With these properties, bearings with SMS® can have a much more compact design.

Performance

1. Extended service life:

SMS® has five times the long-term wear resistance of PTFE, resulting in a much longer service life.

2. Reduced friction:

At moderate temperatures, SMS® has a lower coefficient of friction than PTFE and UHMWPE.

3. Wide range of temperatures:

SMS can be used at temperatures between -50°C and +90°C. The strength of PTFE diminishes at 48°C and that of UHMWPE at 70°C.

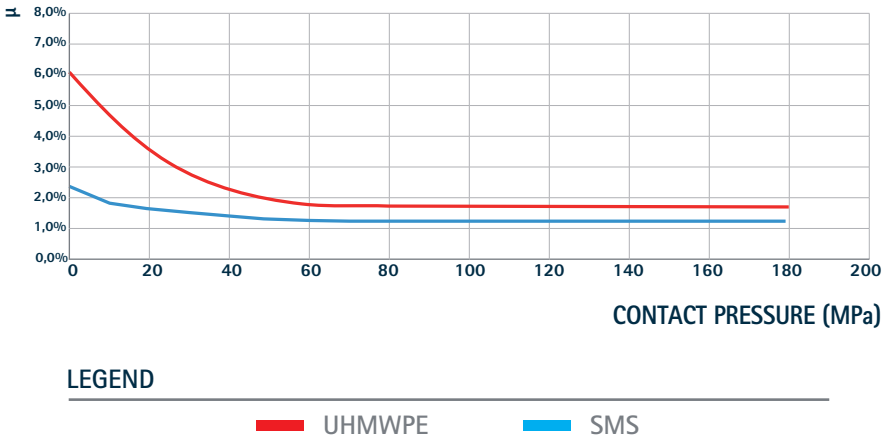
4. High compressive strength:

SMS® permits a contact pressure that is double that of PTFE.

Properties of SMS® bearings

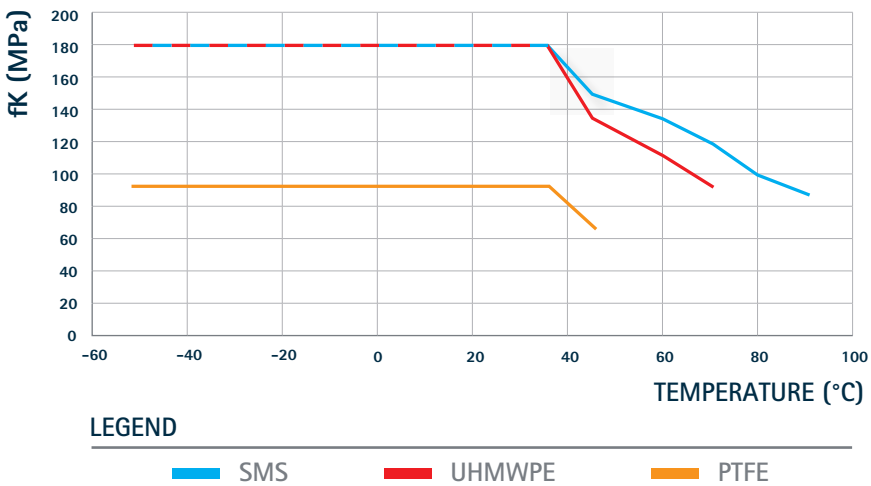
The contact pressure and temperature are decisive factors for the coefficient of friction of sliding bearings. This coefficient is a key consideration when sizing the bearings and the forces that are to be transmitted. The lower the coefficient, the more compact the bearing is.

Friction μ at moderate temperature -5°< T

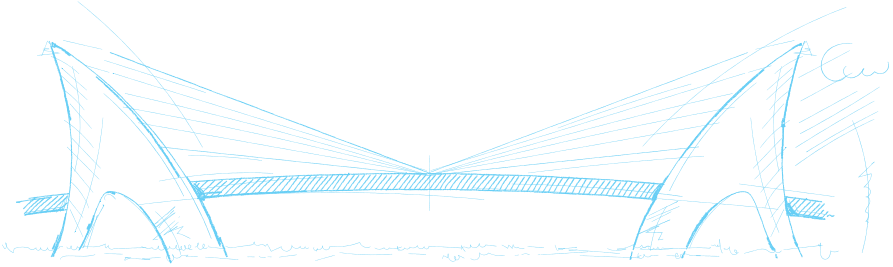


The bearing capacity of sliding bearings depends on their characteristic stress level. Here, SMS® outperforms PTFE by approximately 100%. Even at high temperatures, the stress level is greater than in other products. As a result, bearings that use SMS® are suitable for regions with extreme demands.

Characteristic compressive stress

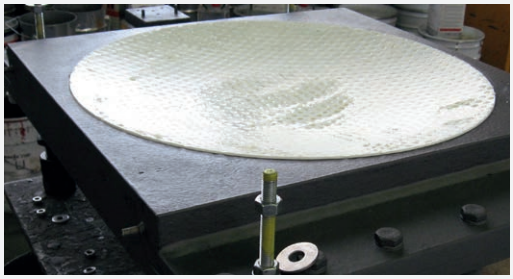


SMS = Schreiber Magic Slide



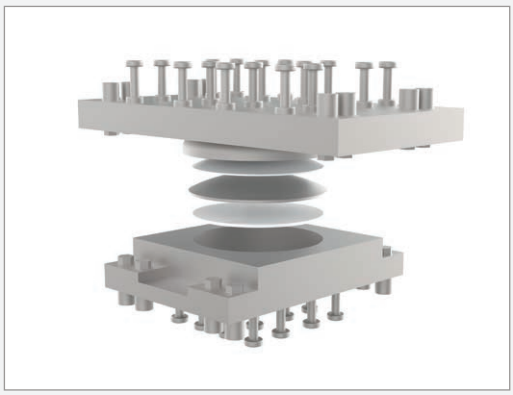
Benefits

- Extended service life
- Economical spherical bearings
- Optimised installation for spherical bearings



Schreiber SMS® guided spherical bearing

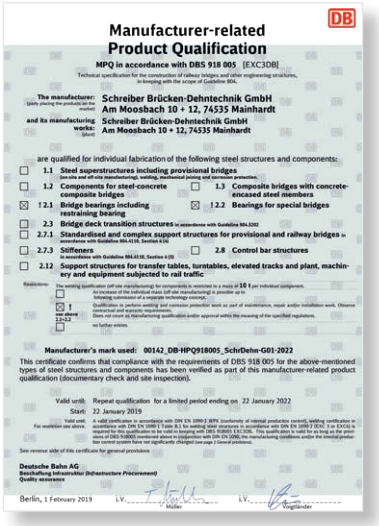
Schreiber SMS® sliding material



Schreiber SMS® spherical bearing with multiaxial displacement

SMS® and certifications

Bearings using SMS® have been the subject of a European Technical Assessment (ETA) under reference no. ETA-20/0320, on the basis of a European Assessment Document (EAD) with reference no. EAD 050009-00-0301.
The corresponding articulated bearings benefit from a CE marking based on the spherical bearing.
This certification was awarded after the conduct of final tests in accordance with EN1337. In a long-term durability test, the material was tested over a total displacement of 50,000 metres.



DB

Manufacturer-related Product Qualification

MPQ in accordance with DBS 918 005 [EXC3DB]

Technical specification for the construction of railway bridges and other engineering structures, in keeping with the scope of Guideline 804.

The manufacturer: (plus placing the products on the market) **Schreiber Brücken-Dehntechnik GmbH Am Moosbach 10 + 12, 74535 Mainhardt**

and its manufacturing works: (plant) **Schreiber Brücken-Dehntechnik GmbH Am Moosbach 10 + 12, 74535 Mainhardt**

are qualified for individual fabrication of the following steel structures and components:

- ☐ 1.1 **Steel superstructures including provisional bridges** (workshop and off-site manufacturing), welding, mechanical joining and corrosion protection.
- ☐ 1.2 **Components for steel-concrete composite bridges**
- ☐ 1.3 **Composite bridges with concrete-encased steel members**
- ☒ ! 2.1 **Bridge bearings including restraining bearing**
- ☒ ! 2.2 **Bearings for special bridges**
- ☐ 2.3 **Bridge deck transition structures** in accordance with Guideline 804.3202
- ☐ 2.7.1 **Standardised and complex support structures for provisional and railway bridges** in accordance with Guideline 804.4110, Section 4.1.6
- ☐ 2.7.3 **Stiffeners** in accordance with Guideline 804.4110, Section 4.1.8
- ☐ 2.8 **Control bar structures**
- ☐ 2.12 **Support structures for transfer tables, turntables, elevated tracks and plant, machinery and equipment subjected to rail traffic**

Requirements: The welding qualification (off-site manufacturing) for compatibility is restricted to a mass of **10 t** per individual component.

☐ An increase of the individual mass (off-site manufacturing) is possible up to following submission of a separate technology concept.

☒ ! see above 1+2+3 Qualification to perform welding and corrosion protection work as part of maintenance, repair and/or installation work. Observe Deutsche Bahn AG supplier requirements.

☐ Only for work in manufacturing qualification and/or approval work in the meaning of the specified regulations.

☐ no further entries

Manufacturer's mark used: 00142_DB-HPQ918005_SchrDehn-G01-2022

This certificate confirms that compliance with the requirements of DBS 918 005 for the above-mentioned types of steel structures and components has been verified as part of this manufacturer-related product qualification (documentary check and site inspection).

Valid until: Repeat qualification for a limited period ending on 22 January 2022

Start: 22 January 2019

Valid until: For restriction see above. A valid certification in accordance with DIN EN 1090-2: 8PK (conformity of internal production control), welding certification in accordance with DIN EN 1090-3 Table B.1 for welding steel structures in accordance with DIN EN 1090-2 (EXC 3) or EXC4 is required for this qualification to be valid in keeping with DBS 918001 EXC3DB. This qualification is valid for as long as the provisions of DBS 918001 mentioned above in conjunction with DIN EN 1090, the manufacturing conditions and/or the material properties of the construction have not significantly changed (see page 1 General provisions).

See reverse side of this certificate for general provisions.

Deutsche Bahn AG
Beschaffung Infrastruktur (Infrastructure Procurement)
Quality assurance

Berlin, 1 February 2019 LV. Müller LV. Vogländer

OiB

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Designated according to Article 29 of Regulation (EU) No 305/2011

Member of EOTA
www.eota.eu

European Technical Assessment **ETA-20/0320** of 02.03.2020

General part

Technical Assessment Body issuing the European Technical Assessment	Österreichisches Institut für Bautechnik (OIB) Austrian Institute of Construction Engineering
Trade name of the construction product	Schreiber SMS® Spherical Bearing
Product family to which the construction product belongs	Spherical and cylindrical bearing with special sliding material made of fluoropolymer
Manufacturer	Schreiber Brücken Dehntechnik GmbH Am Moosbach 10+12 74535 Mainhardt Germany
Manufacturing plants	Factory 01, Factory 02
This European Technical Assessment contains	19 pages including 3 Annexes which form an integral part of this assessment.
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	European Assessment Document (EAD) EAD 050009-00-0301 "Spherical and cylindrical bearing with special sliding material made of fluoropolymer"

In addition to these certifications, Schreiber Brücken-Dehntechnik has been authorised to supply SMS® bearings to Deutsche Bahn (the German national railway company).

Contact