

European Approval for the shining slider MSA®

New ETA-06/0131 extends the MSM®-applications in the ranges of corrosion resistance, size/loads, high temperatures, and cylindrical bearings

Munich. 5 years ago, MSM® – the revolutionary Maurer Sliding Material – attained the European Technical Approval ETA-06/0131. Now this ETA was considerably enhanced.

- Approval of MSA® – MAURER Sliding Alloy – for enhanced environmental resistance, life time, and economics
- Approval of greater diameters and thus over 50,000 tons of vertical load for MSM® Spherical Bearings
- Approval for temperatures in bearings of up to 70° C
- Enhancement of MSM® for use in cylindrical bearings

MSA®: Material plus Surface

MSA® – MAURER Sliding Alloy – is a metal alloy with a special surface treatment. The highly shining MSA®-Calottes display a much higher resistance against corrosion as compared to chromatised steel calottes. A further advantage compared to chromatised surfaces is the fact that the sliding alloy is resistant against fluor ions and chloride ions in acid solutions, as they occur in some industrial environments. In addition, the production of the MSA®-Calottes is more economic and faster, because the chromatisation process has no longer to be externally subcontracted and the total production of the calotte inclusive of surface treatment is being taken care for in the premises of Maurer Söhne.

MSA® was especially developed for calottes in bearings for bridges and building structures. In the beginning of 2010, the German Institute of Civil Engineering awarded the National General Approval (AbZ Z-16.4-436). Now the European Technical Approval ETA-06/0131 is also awarded.

Together with the sliding material MSM® a lifetime of at least 50 years can be guaranteed. This means that also under difficult environmental conditions (moisture, floods, industrial air) no premature and cost intensive replacement of the shining calotte will be required.

Heavy Load Bearings with MSM® for 50,000 t

As a first time, the ETA extends the permissible diameter of the sliding material to 2.5 m. Until recently, 1.5 m was the limit, and greater diameters, which had to be employed a number of times in the past by Maurer Söhne, always required a special approval in each individual case.

In retroview, until the introduction of MSM® in 2003, PTFE-bearings according to EN 1337-7 were limited to vertical loads of ca. 100 MN. In comparison to PTFE, MSM® accommodate a double contact pressure and thus extended the scope of usage to ca. 200 MN. Caused by production constraints, PTFE-sliding paltes are limited to 1.1 m, which in the past required special designs with separated sliding elements when surpassing this limit. MSM® can be produced in much larger size. With the new approval, MSM® Spherical Bearings of up to 500 MN are possible.

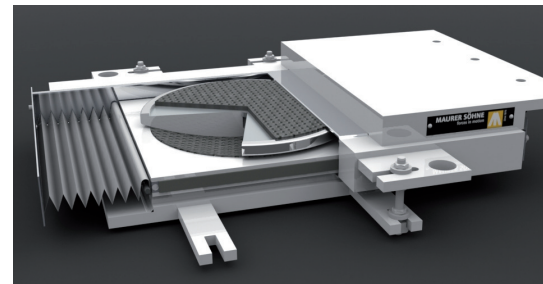
Contact for the press

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Chrome shining? – as if! Calottes made of sliding alloy MSA® derive their shine from a special surface treatment. MSA® Calottes do not only display a higher corrosion resistance as chromatised surfaces, but are also resistant against an aggressive industrial environment. MSA® enjoys the European Approval ETA-06/0131.

Photo: Maurer Söhne



Section through a spherical bearing with the special sliding material MSM® (black). With the new ETA-06/0131, MSM®-Spherical Bearings enhance their scope of application to temperatures of up to 70° C and vertical loads of up to 50,000 t.

Photo: Maurer Söhne



Components of a double cylindrical bearing
Graphics: Maurer Söhne

These are 50,000 tons and thus more than all gold reserves in the world combined, which would rest on just 1 MAURER Bridge Bearing. A truly high value heavy load bearing.

European Approval with World Wide Impact

The approval is of international importance. It is a base for the biggest European spherical bearings to be employed in the new cable stayed bridge over Waal River near Ewijk in the Netherlands, where a CE mark was required. Next to this order, Maurer Söhne was awarded the contract for the supply of the bridge bearings for the prestigious Signature Bridge in Delhi. "For the Indian Contractors, the European Approval was a confirming proof of quality for awarding the world's biggest bridge bearings of their kind", reports Dr. Christian Braun, Managing Director of the Structural Protection Systems Division at Maurer Söhne, Munich.

In the course of the enhancement of ETA-06/0131 two further ranges of the National General Approval AbZ Z-16.4-436 were implemented on European level:

- Augmentation of the upper temperature limit for MSM® from 48° to 70° C
- Introduction of Cylindrical Bearings

MSM® also at High Temperatures

The usage of MSM® was so far restricted for temperatures from -50 to +48° C. The ETA-06/0131 augmented the upper limit to +70° C. For international markets there cannot be imagined any remaining restriction for the usage of MSM® Spherical Bearings any more.

Furthermore, the approval indirectly also legitimizes the usage in earth quake sliding bearings, because, caused by energy dissipation, short term high temperatures can occur.

MSM® Cylindrical Bearings

Newly adopted in ETA-06/0131 were cylindrical bearings. If a cylinder is adopted instead a calotte, only rotations around the cylindrical axis are permitted. Provided that the dimensions of the structure permit this constraint or even require it, geometrical advantages can be taken in when roller bearings have to be replaced, because the cylindrical bearings are rectangular in ground view and the side dimensions can almost arbitrarily be selected.

Of particular advantage ist the usage of cylindrical bearings as sliding pendulum bearings for earth quake protection, or for an "elastic" support, when pendulum movements shall go only in one direction, or, if two pendulum bearings cross each other, when their movement into the two directions shall be unequal.

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