

Press Release – January 2005

## Structural Protection Systems at Maurer Söhne Munich

Extension of business scope calls for renaming its business unit

**Munich. Maurer Söhne Munich counts among the world wide leading manufacturers of bridge accessories. Increasing demands from the market of building structures requiring the competence of the manufacturer lead to an extension of the scope of supply, and consequently the business unit “Bridge Accessories” was renamed to “Structural Protection Systems”. This new term shall reflect a common characteristic that all products share, presently comprising the areas expansion joints, structural bearings, seismic protection systems, vibration control systems, and monitoring of structures.**

Since the end of the 1960s, Maurer Söhne has been manufacturing expansion joints made of steel. The world wide break through was reached by means of the introduction of watertight modular expansion joints for road bridges. Shortly thereafter, the production of bridge bearings started. Since then, to be favoured is the spherical bearing because of the absence of restraints, high load capacity, and its long service life. In the past decades, by means of these products Maurer Söhne gained world wide market leadership in the field of bridge accessories. In the light of ever more daring architecture, such products also found their access into the market of building structures.

In parallel, Maurer Söhne developed a variety of vibration dampers that were employed for the damping of slender steel structures which are prone to vibration, and which were manufactured at Maurer Söhne, as there are chimneys and pedestrian bridges. The design followed in particular the principle of friction, respectively hydraulics. Meanwhile, these damping systems are also marketed separately. Also in this field, Maurer Söhne meanwhile gained a leading position. About a decade ago, a totally new challenge turned up in the protection of engineering structures from the impacts of earth quakes by means of isolators, respectively dissipators. Further, in also entering into the manufacturing of elastomeric bearings, a connection between structural bearings and dampers was created.

The business unit’s name „Bridge Accessories“ no longer properly describes the full scope of application of all products. Thus, since the beginning of 2005, Maurer has created its new business unit “Structural Protection Systems”. The old and proven term “Bridge Accessories” remains as its department, next to the newer “Building Accessories”. All products share a common characteristic, which is the protection of structures and its users from external impacts of forces in motion, as we will show below.

**Expansion Joints** are devices that shall by their design accomodate movements of the structure, and thus shall protect the structures from uncontrolled cracks. Maurer Expansion Joints further cater for sufficient safety of traffic for all users, next the protection of the structure from aggressive surface water and the protection of the neighbourhood by means of low noise emitting expansion joints. This all holds for structural displacements that exceed 2,000 mm.

**Structural Bearings** facilitate the transfer of loads as per design, at flexible locations of support. Also in this case the focus is on a damage free accommodation of the movements, in conjunction with a sufficient structural safety. By means of spherical bearings, combined with the special sliding material MSM<sup>®</sup>, Maurer Söhne guarantees minimal resistance to displacement, an unsurpassed service life over a wide temperature range, and this for vertical loads that can well exceed 100,000 kN.

**Seismic Protection Systems** are protection systems for the structure and its user. As isolators, they reduce the energy that is introduced into the structure during a seismic event. The remaining energy will be taken care of by so called dissipators. Maurer Söhne has a wide range of conventional protection systems in their scope of supply. Highlights are especially the hydraulic load limiters and semi active systems. Maurer Swivel Joist Expansion Joints facilitate restraint free movements of the structure into all directions, even at the high displacement velocities that can be expected during a seismic impact. In order to accommodate excessively high displacements caused by earthquake, so called fuse boxes were developed, which are defined areas of structural yield.

**Vibration Control Systems** reduce the Eigen frequencies of structures or parts thereof, in order to protect the structure from damages caused by excess displacements or fatigue, further to ensure that the serviceability for the user is maintained. For slender, respectively for soft structures, Maurer Söhne has developed special damping systems with secondary mass. For stay cables, hydraulic dampers or high damping rubber bearings are the preferred choice.

**Monitoring Systems** cater for the continuous monitoring of the functionality of the structures. Maurer has developed special electronic monitoring systems for the monitoring e.g. of vertical loads, displacements, or tension forces in cables. Taking the measured values as input, Maurer Adaptive Dampers can adapt to fluctuating conditions on site.

The sum of all these competencies described above turns Maurer Söhne into the specialist for structural protection systems, in conjunction with competent service in technics, contracting, and consulting.

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Harilaos-Trikoupis-Brücke (Rion - Antirion): Bei diesem technisch wie ästhetisch anspruchsvollen Brückenschlag zeichnet Maurer Söhne für die Dehnfugen verantwortlich. Diese sind Dank eigens entwickelter Fuse Boxes für Erdbebenbewegungen von  $\pm 2600$  mm in Querrichtung und 5010 mm in Längsrichtung geeignet und auch nach schweren Beben weiterhin befahrbar.

Foto: Panagiotis Tsousis

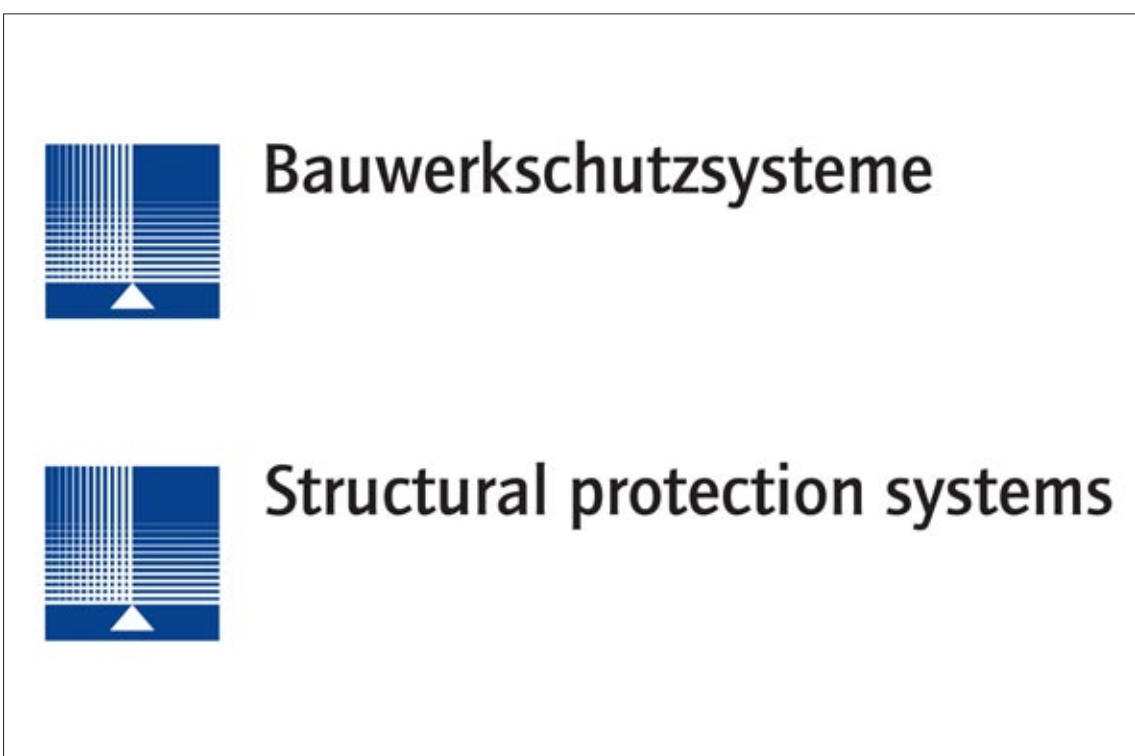
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Einer der Gründe für Maurer Söhne, sich vom alten Namen „Brückenausrüstung“ zu verabschieden: Für die Münchner Allianz-Arena lieferte das Unternehmen fast 100 Hochbaulager.

Foto: Allianz Arena / B. Ducke

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Das Logo für den jetzt umbenannten Unternehmensbereich „Bauwerkschutzsysteme“ bei Maurer Söhne. Es steht für die Unterbereiche Dehnfugen, Lager, Erdbebenvorrichtungen, Schwingungsdämpfer und Bauwerksmonitoring.

Logo: Maurer Söhne