

## Imtech Arena, Hamburg, Germany

Anyone who travels to Hamburg by aeroplane or car cannot possibly overlook it. Situated right by the A7 autobahn, the Imtech Arena with its round, 35 m high roof towers over the entire area. It is a genuine architectural work of art whose roofing, consisting of a supporting structure that weighs 460 tonnes, is suspended on steel cables of a total length of approximately 17 kilometres and covered by special membranes on an area of 35,000 m<sup>2</sup>.

The arena, which is the home venue of the Bundesliga football club Hamburger SV and holds 57,000 covered seats, is one of the few stadiums in the world which has received five stars by FIFA.



However, the Imtech Arena is not only a sports venue, it has also been and continues to be a place where many stars such as the Rolling Stones stop on their world tours. Since 1 July 2010 the stadium has been named Imtech Arena. Imtech, a leading service provider in the field of energy and building technology in Germany, and Hamburger SV had taken it upon themselves to make the arena the most energy-efficient stadium in Germany in terms of heating, cooling and electricity.

Specific construction work was necessary for the altogether nine energy efficiency measures, which ranged from floor heating in the box and office areas to heat recovery and through to the flexible and needs-based consumption control (heating, ventilation, cooling and electrical systems). Special requirements regarding the air-borne and structure-borne sound insulation had to be considered in the installation of the ventilation system on the reinforced concrete floors. The reason was that placing the air-conditioning and ventilation units at the intended spots would have resulted in the transfer of structure-borne sound within the building and might have impaired the sound quality of radio and television broadcasts or concerts.



Therefore the structure-borne sound in the reinforced concrete floors which is generated by the operation of the ventilation systems had to be prevented as much as possible by way of elastic decoupling. Together with the expert consultant, BSW developed a solution for the vibration technology which included the use of **Regupol® BA**. Active isolation was performed using insulation mats made of PU-bonded rubber fibre underneath the base of the systems, which reduced the generation of the structure-borne sound in the concrete constructions to a minimum.



**Regupol® BA** was put underneath the units. When installed in three layers, **Regupol® BA** achieves structure-borne sound insulation of 93% and a bearing frequency of 12 Hz. Moreover, **Regupol® BA** can be used for full-surface insulation and point support for traffic loads of up to 5,000 kg/m<sup>2</sup>. Thanks to the resilience of the elastomer mats against moisture and ozone as well as when dealing with temperatures between -20 °C and +80 °C, **Regupol® BA** can also be used outdoors, such as in the Imtech Arena.

Additional references are listed on our website.

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