



Elbphilharmonie

Hamburg

Germany

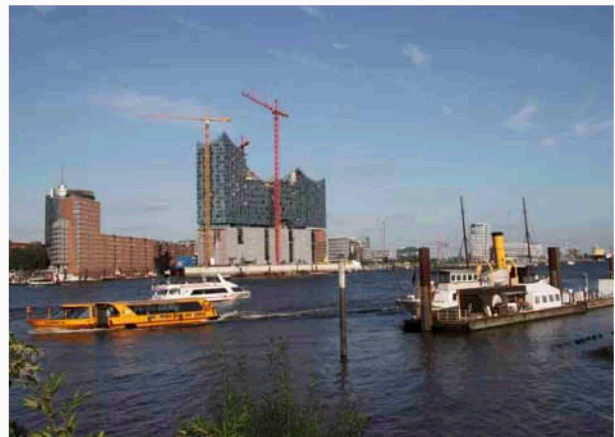
 **REGUPOL**

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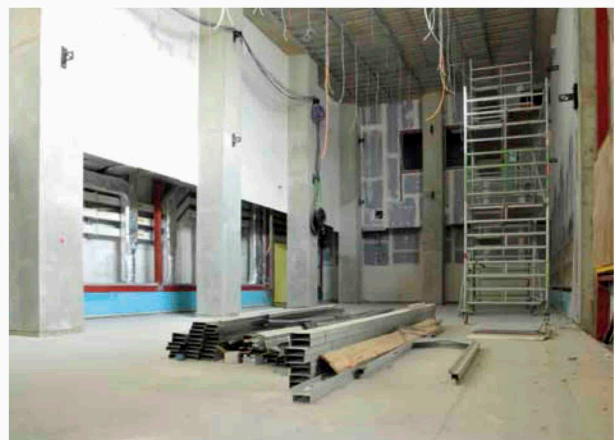
If St. Michael's Main Church (commonly called Hamburger Michel) and the Köhlbrand Bridge are architectural landmarks of Hamburg, the Elbphilharmonie, the structure of the century, is going to be Hamburg's cultural landmark. In the middle of the Elbe River, at the centre of the Hafencity district, one of the world's best concert halls is being built on Quayside Warehouse A (Kaispeicher A) after plans by the Swiss architectural firm Herzog & de Meuron. Three concert halls, one hotel with 250 rooms, 45 flats, restaurants, bars and a car park will be housed in the future building complex that is going to put its mark on the city.



If the brick façade of the old warehouse, which was built between 1963 and 1966 after a design by Werner Kallmorgen, has an almost stoic appearance, the glass façade of the new structure on top looks lively and audacious. Separator and at the same time joint between old and new is the approx. 4,000 m² plaza at an elevation of 37 metres. From here Hamburg residents, tourists, concertgoers and hotel guests can enjoy a unique 360° panorama of the Hanseatic city. The undulating silhouette of the roof emulates the constant movement of the Elbe River. In wide inverted arcs it rises up 30 m from the eastern façade to reach an elevation of 110 m, the highest point of the Elbphilharmonie, at the tip of the quay.



The large concert hall with its approx. 2,150 seats is at an elevation of 50 metres inside the building. It constitutes an architectural feat. For reasons of sound protection, the 12,500-tonne hall rests on spring packages. Its walls are decoupled from all other parts of the building. To make sure that the acoustics will be perfect throughout the concert hall, one of the world's best acousticians, Yasuhisa Toyota, has developed a concept whose measurements were checked using a model of the concert hall which was built true to detail at a scale of 1:10. Thanks to 10,000 individually treated wall and ceiling panels with a surface that is unique in the world and a sound reflector suspended in the centre of the tent-shaped ceiling vault, the sound of the orchestra is distributed evenly throughout the hall.



However, the planners have made sure that the acoustics will not only be perfect in the Large Hall. In the Little Hall and the Quay Studio – music rooms which are intended for chamber music, contemporary and experimental music, children's concerts and choir rehearsals – all sound technological requirements of concert halls were met as well. Thus the use of impact sound insulation mats in the construction of the floor slabs from the manufacturer BSW ensure that there will be minimum sound transfer. In the Quay Studio, two layers of **Regupol® BA** and one layer of **Regupol® E48** were put on top of one another to adjust to the required construction height.



Regupol® E48

Since the Quay Studio is directly above the car park, an approx. 100 mm thick screed slab was installed to reduce the air-borne sound on the **Regupol®** screed insulation mats. The insulation mats made of PU-bonded rubber fibre with national technical approval stand out for their high load-bearing capacity, their minimum compressibility and a high resilience level. Prior to the installation of the screed insulation mats in the Quay Studio of the Elbphilharmonie, the walls and columns were covered with **Regupol®** perimeter insulation strips. After they were installed butt to butt, they were connected with adhesive tape and finally covered with a 0.2 mm thick PE foil. The PE foil prevents the screed from penetrating the porous structure of the **Regupol®** and thus the formation of acoustic bridges and the resulting transfer of structure-borne sound.



Regupol® BA

Additional references are listed on our website.

www.bsw-vibration-technology.com

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