

## Brunnenstraße, Berlin, Germany

### Regupol® vibration used in the renovation of a commercial and residential building

Living and working in the centre of Berlin means living in one of the city's most vibrant districts. Close to 333,000 residents live right in the heart of the capital, just a few steps away from Berlin's most well-known landmarks such as the Reichstag, TV tower or Berlin Wall Memorial. This multi-faceted cultural district offers great connections to every other part of Berlin thanks to the city's extensive public transport system, and is therefore in high demand from residents, as well as commercial businesses and service providers. As the most expensive district in Berlin, rent is extremely high and can reach €13/m<sup>2</sup>. Due to traffic density and surrounding infrastructures, a number of specific physical conditions must be considered during planning and building phases, especially within the field of prime real estate.

The Bernauer Straße / Brunnenstraße sector is currently hosting the construction of an exquisite new commercial and residential building. Amongst other things, the noise pollution caused by motor vehicles in the sector was one of the main considerations during the design planning process. A special feature of the building's location is that it lies along the Bernauer Straße tram line and the Brunnenstraße train line, which are only a short distance away from the property. As a result of active rail traffic, disturbing vibrations and airborne sounds were to be expected, and so appropriate measures would need to be taken. A follow-up vibration report confirmed this assumption.

Based on the expert report established by Müller-BBM GmbH, as well as on a pressure plan drawn up by the Pfeiffer Architekten architectural office, BSW developed a set of measures for the horizontal and vertical decoupling of the building's foundations. Due to applied pressure ranging between 50 kN/m<sup>2</sup> and 300 kN/m<sup>2</sup>, two different materials were used in the foundation installation plans within the 600 m<sup>2</sup> building. By installing **Regupol® vibration 480** in a 3-layer design (3 x 20 mm), pressures ranging from 50 kN/m<sup>2</sup> to 150 kN/m<sup>2</sup> were covered. **Regupol® vibration 550** was also applied in a 3-layer design (3 x 20 mm) to deal with pressures ranging from 150 kN/m<sup>2</sup> to 300 kN/m<sup>2</sup>. The standard product, delivered in rolls, is made up of highly resilient polyurethane and rubber bound rubber fibres, and was delivered in tailor-made rolls measuring 2,000 x 1,250 x 20 mm, specially designed for this construction project. This made it possible not only to reduce, or rather lighten expenses, but the compliance of the grid plan with required dimensions proved to be a huge advantage for contractors. To prevent the layers from impacting one another, the middle layer was offset from the others. Also, to avoid absorbing the concrete slurry when laying down the



foundation plates, the insulation boards were covered with a standard 2 mm-thick PE film after being installed.

**Regupol® vibration 450** was recommended for the vertical decoupling of the building. The fitting of the 50 or 25 mm-thick standard panels (1,000 x 500 mm) to the side and basement walls was completed after affixing a suitable PU contact adhesive. Once again, prior to backfilling, the panels were protected using a PE film.

#### Information at a glance

Property: New commercial and residential building, Berlin city centre

Developer: Brunnen 49 GmbH, Berlin

Architects: Pfeiffer Architekten, Berlin

Construction company: HDAG Projekt GmbH, Berlin

#### BSW Products

**Regupol® vibration 450, 480, 550**

