VIBRATION CONTROL FOR HAINWERK AND FRIEDRICH (DE)

CASE STUDY
Sustainable side-wall decoupling with Relomer®



EFFECTIVE PROTECTION AGAINST VIBRATIONS CAUSED BY TRAM LINES



getzner

EFFECTIVE VIBRATION CONTROL WITH SUSTAINABLE SIDE-WALL DECOUPLING

THE PROJECT

The complex, comprising an office block and two residential buildings in Berlin-Friedrichshain, has a gross floor area of around 29,000 square metres. Of this, approximately 65 per cent is office space, 20 per cent is residential space and 15 per cent is retail space. Completion of the buildings is scheduled for 2027.

Setting new standards in sustainability

The buildings, which feature extensive green spaces, are climate-neutral in operation and comply with German Efficiency Building Level 40. This means the complex consumes 60 per cent less energy than required by the Building Energy Act. The office building is being implemented using a low-carbon timber-hybrid construction method, incorporating recycling materials. It has been pre-certified to DGNB Platinum, the highest German standard for sustainable buildings. Platinum certification under the international LEED standard is also being sought. Heating and cooling for the site is provided by 140 geothermal probes in combination with air-source heat pumps, which are powered by a roof-mounted photovoltaic system.

Disruption caused by tram traffic

The close connection to local public transport helps to reduce private car use: the tracks of the M10 and M13 tram lines operated by Berliner Verkehrsbetriebe (BVG) run immediately to the south and east of the site. Due to the curved course of the track and the turnouts in this area, the ground-borne vibrations are intensified, transmitted into the building as structure-borne noise and converted there into disruptive secondary airborne noise.

On the basis of on-site vibration measurements and structural-dynamic finite-element models, the expected structure-borne and secondary airborne noise levels from tram traffic were therefore predicted. To ensure the desired quality of living and working environment by preventing ground-borne vibrations from entering the building structure, the expert report recommended base isolation beneath the building's foundation slab and side-wall isolation between the external basement walls and the surrounding soil.

> ***"Getzner provided us with Relomer®, a decoupling solution offering the same high standard of quality as Sylomer® and Sylodyn®. Thanks to the mats' low weight, they are easy to handle and install – whilst delivering at least the same performance as comparable, heavier solutions."***

Dr Silke Appel, Eng.
Chief Executive Officer, GuD Consult GmbH



Effortless installation: Thanks to their low weight, the compact Relomer® mats are easy to handle and quick to install.



Relomer® – brightly coloured and brand new: the 100% recycled, specially developed material made from pure polyurethane ensures long-term vibration isolation performance for decades.

THE GETZNER-SOLUTION

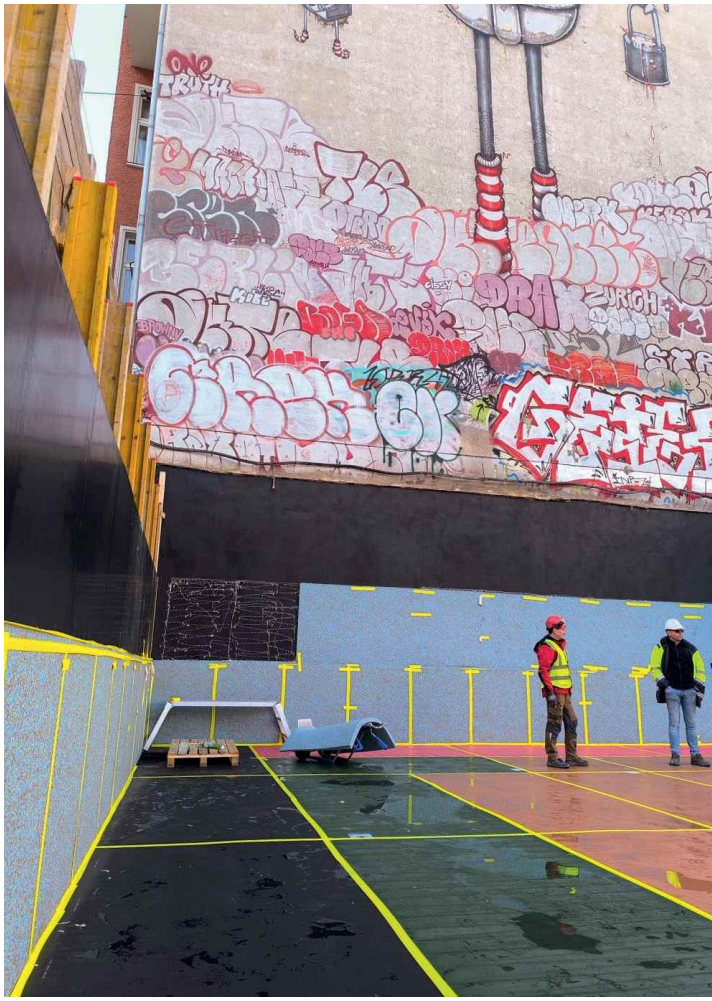
Sustainable buildings – recycled-PU side-wall decoupling

With the newly launched Relomer® side mats, Getzner has been able to provide a decoupling solution that perfectly supports the sustainability focus of the building complex: the mats are made from a specially developed material produced from 100 per cent recycled polyurethane (PU), which is manufactured by granulating and compressing production offcuts and installation offcuts returned for recycling. In this way, the high-quality PU materials are consistently returned to the material cycle, thereby reducing the consumption of raw materials.

The mats combine excellent spring and damping characteristics and demonstrate outstanding durability. The available product variants ensure best performance for different static and dynamic loads at various installation depths.

Complete isolation system

In addition to decoupling using the 50 mm and 37,5 mm thick Relomer® mats, the building is elastically isolated beneath the foundation slab using high-quality Sylomer® mats. Covering a horizontal isolation area of 455 m^2 and a side-wall isolation area of 346 m^2, the mats elastically isolate approximately 7,500 tonnes of building mass from ground-borne vibrations. Thanks to the tailored design of the combined Getzner solution, the resonance frequency of 9 Hz specified in the expert report is efficiently achieved.



Fully wrapped: The building complex comes with elastic isolation across a lateral surface of 346 m^2 and a base surface of 455 m^2 using Relomer® and Sylomer® from Getzner.

BENEFITS FOR THE CLIENT

- Long-term vibration protection for a comfortable living and working environment
- Easy handling and efficient installation thanks to the mats' low weight and compact dimensions
- Reduced environmental impact through the use of recycled materials with a lower CO_2 footprint

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A COMPREHENSIVE SOLUTION

Two tram tracks on Berlin's tram network run directly alongside the HAINWERK and FRIEDRICH building complex. The predicted secondary airborne noise levels would have meant that the desired comfort level could not have been achieved.

A perfect opportunity for Getzner to showcase its strengths in materials and applications:

- Effective reduction of vibrations and noise through side wall decoupling and elastic support of buildings
- Long-term protection against vibration and noise
- A sustainable contribution to a future worth living

Project	HAINWERK and FRIEDRICH building complex
Location	Crossing of Warschauerstraße and Revaler Straße, Berlin
Client	Schrobsdorff
Partner	SB-Bautechnik
Project Developer	HAMBURG TEAM
Builder	Henderson Park
Architectural practice	Code of Practice (residential building) & Grüntuch Ernst (office building)
Solution	Relomer® side mats and Sylomer® floor mats in various implementations
Implementation	2024

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