

SUCCESS STORY

VIBRATION ISOLATION

Apartment houses, Bad Vilbel

PROJECT DATA

Brief description

Elastic decoupling of apartment houses without basement.

Requirement

Elastic mounting of the buildings to protect the residents from immissions from vibrations and secondary airborne noise caused by adjacent rail traffic.

City, year

Munich and neighborhood, 2020

PROJECT DESCRIPTION

In Bad Vilbel, several apartment buildings without basements are planned in the Krebschere development area. These residential buildings are directly adjacent to a railway line. The passing trains carry structure-borne sound waves into the ground and thus into the foundation of the buildings. These are perceived as disturbing by the residents in the form of vibrations and secondary airborne noise. In order to comply with the legal requirements for secondary airborne sound and vibration immissions and to expose the residents to as few immissions as possible, measures to reduce vibrations were necessary. The elastic support was to maintain a tuning frequency of 7.5 Hz.

SOLUTION

Calenberg elastomeric bearing Cibatur® is used as decoupling method. Due to not exactly known static load distribution (load distribution due to soil deformation!), the load-adaptive properties of Cibatur® offered increased safety for compliance with the limit values, especially in these construction projects. The horizontal base bearing under the base slab and the strip foundations was executed with two-layer Cibatur®. The vertical bearing was realised with 40 mm thick Civerso A. Since the buildings do not have a basement, only the strip foundations were vertically clad up to the top edge of the ground.

