

SUCCESS STORY

VIBRATION ISOLATION

Holthusen near Schwerin

PROJECT DATA

Brief description

A residential area is being built close to an ICE railway line. Due to the railway traffic, especially due to night-time freight train traffic, significant secondary airborne noise in the buildings is to be expected in addition to vibrations in and around the buildings.

Requirement

The available building dynamics report shows that the inputs from vibrations and secondary airborne noise are clearly too high without protective measures. Therefore, elastic building supports with tuning frequencies below 10 Hz are recommended.

City, year

Holthusen near Schwerin, 2022

PROJECT DESCRIPTION

Building sites are increasingly being allocated close to railway lines due to a shortage of building space. However, railway traffic causes vibrations and secondary airborne noise, which have a negative impact on the buildings and their residents. To ensure immission protection and to meet the expert's specifications, elastic support under the floor slab was necessary in this building project to achieve the recommended tuning frequency.

SOLUTION

The structure of the Calenberg protective measure:

- Produce earth foundations/blinding layers of concrete as a firm bearing base for the elastic elements.
- Produce elastic bearing joint, for this purpose install double-layered Cibatur®, arranged in the areas of the building load transfer and the later pi-slab joints.
- Covering of the entire bearing joint with pi plates to prevent concrete penetration/concrete slurry when concreting the floor slab.
- Concreting the floor slab, ensuring that sound bridges to the floor slab or the building are prevented (e.g. by insulating supply pipes/lines).



With double-layer Cibatur® a tuning frequency of approx. 7 Hz was achieved. The construction work was carried out professionally by the building company PRIMA HAUS, Schwerin.