

Regupol® sound 12 for Impact Sound Insulation

Stuttgart is not only the capital of Baden-Wuerttemberg. With more than 610,000 inhabitants, it's also the largest city in south-west Germany and one of the densely populated with almost 3,000 inhabitants per square kilometre. It is not just the varied and exciting architecture from several centuries that presents architects and builders of new buildings in the city with major challenges, but planners also find the city's topography taxing, due to the differences in altitude along the inclined terrain of the city. In addition, densely populated urban areas, especially with up-scale real estate, requires compliance with structural building regulations.

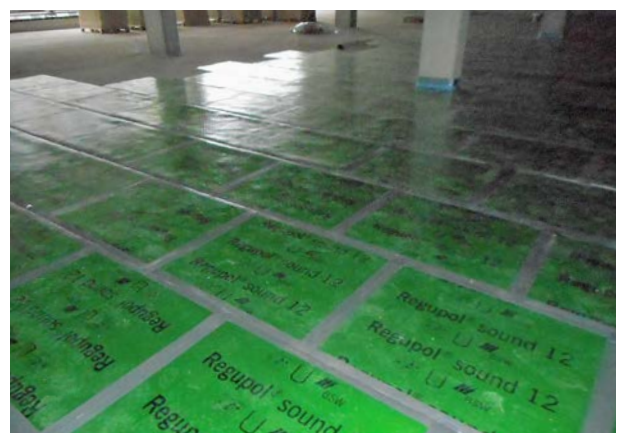
This was the case, for example, with the new construction and renovation of a former office building on the busy Hauptstätter Strasse at the southern edge of the city centre. Stuttgart-based Schwarz Architekten were commissioned with the design of the building complex. The new usage concept provides for the construction of 47 comfortable, town house-like, owner-occupied apartments on the upper floors, a retail store on the ground floor, and just under 200 parking bays in the underground garage

The use of the approximately 1,000 m² area of the ground floor by the food discounter made certain measures necessary in view of the corresponding requirements of German standard DIN 4109:1989-11 "sound insulation in buildings". The architects selected a floor structure using **Regupol® sound 12** impact sound insulation, produced by Berleburger Schaumstoffwerk GmbH (BSW), to guarantee good impact and structure-borne sound protection from the floor of the sales area to the apartments above.

An impact sound inspection and assessment by Kurz und Fischer GmbH, engineering consultants, showed that the impact sound insulation measured of the tested floor of the storage area (returnables handling room) on the ground floor to the apartment above meets the building law requirements for retail stores.

The measured and evaluated standard impact sound level $L'_{n,w} \leq 22$ dB is very good and even considerably better than the required value req. $L'_{n,w} \leq 43$ dB according to DIN 4109. The level is also well below the intended better impact sound protection with possible early deliveries or filling shelves with goods outside opening hours etc. of $L'_{n,w} \leq 33$ dB.

The use of **Regupol® sound 12** impact sound insulation made achieving these very good values possible. The 17 mm-thick PUR elastomer composite insulating plate with laminated foil on one side was laid on the reinforced concrete ceiling and then a reinforced concrete plate with concrete core activation and ceramic vibration coating was installed.



The largely ageing-resistant and permanently elastic **Regupol® sound 12** is classified as Fire protection class E (B2) according to DIN EN 13501-1 (DIN 4102) and a maximum constant load of up to 3,000 kg/m² can be applied. Like all BSW products, **Regupol® sound 12** has a national technical approval.

Information about the project at a glance:

Object: New construction of a residential property,
Stuttgart
Client: Bietigheimer Wohnbau GmbH, Bietigheim-
Bissingen
Construction company: Baresel GmbH, Leinfelden-Echterdingen
Architects: Schwarz Architekten, Schwarz Planungsge-
sellschaft mbH & Co. KG, Stuttgart
Building Physicist: Kurz & Fischer GmbH, Office Winnenden,
Mr. Schneiderhan

BSW products

Regupol® sound 12

