

Audi Plant, Győr, Hungary

In May 2012, the topping-out ceremony for the new factory halls of Audi Hungaria Motor Kft. was held in Győr, Hungary. The location was previously used to produce engines. Audi will use the new halls to install a complete process chain, including an energy centre, painting hall, pressing plant, installation hall and body construction hall. The body construction hall has a total surface area of 117 000 m² and a building size of 320 x 250 m. Audi has invested more than 900 million euros in the new plant. The first pre-series vehicles are already scheduled for this year and serial production is expected to start in May 2013. A total of 125 000 Audi A3 and Audi TT car types will be produced in Győr every year.

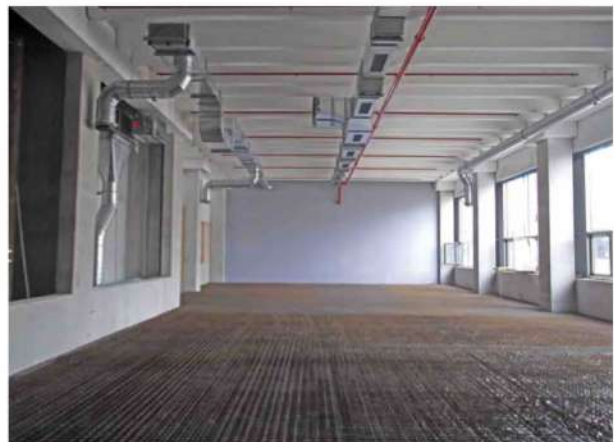
In two areas, the screed in the body construction hall had to be covered with high-load sound insulation to protect the staff members in the neighbouring offices against noise exposure. Planning of screed insulation measures is based on three variables:

1. The sound protection required
2. The impact noise protection required
3. The static and dynamic loads to be absorbed by the floor construction

It was Point 3 in particular that posed complicated problems for the specialised planners of this project. The first of these two areas is to be used by heavy-load fork lifts with an expected total axle load of more than 100 kN. The dynamic load surcharge factor could be ignored in the calculations for the dimensioning of the screed and impact insulation, as heavy-load fork lifts can be expected to drive slowly. The structural planners decided on a 110 mm cement screed which was installed as a floating floor on a 17-mm-thick **Regupol® BA** screed insulation layer. This was intended to prevent impact noise transmission to the neighbouring offices.

Regupol® BA was selected because of the high weight exposure of the area to be insulated. The advantage of **Regupol®** over many other impact noise insulation materials used below screeds is its high load resistance in combination with good impact noise absorption - two product characteristics that often exclude each other. **Regupol® BA** withstands a permanent static load of 50 kN/m² and provides a maximum impact noise improvement of 26 dB.

The second area to be insulated provided an even bigger challenge. The support pillars for the heavy-load shelves to be installed there were expected to generate pressures of more than 0.5 N/mm². In this case, **Regupol® XHT** was selected for impact noise insulation. BSW has developed **Regupol® XHT** for permanent static loads of up to 0.8 N/mm², in contrast



with **Regupol® BA**, which was designed for areas with a permanent static load of 0.05 N/mm^2 . This **Regupol®** version was initially developed by BSW for vibration insulation of building foundations. The material was installed in two layers with a total thickness of 20 mm to achieve sufficient impact noise reduction. Full-area impact noise reduction was chosen for the relevant area, instead of the common, point-type elastic decoupling of the shelf feet, to allow for later relocation of the shelves.

A total of more than $3,000 \text{ m}^2$ **Regupol® BA** and **XHT** were installed for this project. The impact noise insulation used is unconventional, as the floor areas are exposed to extreme loads and other impact noise insulations are not likely to provide the stability required. The screed in the area of the fork lift track and the heavy-load shelves therefore required additional, extra-strong fortification.



More references can be found
on our website.

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