

# Case Study - Regupol RAV300 Foundation isolation



## McGarrell Reilly Homes

<b>Client</b>	McGarrell Reilly Homes
<b>Contractors</b>	Durman Stearn
<b>Foundation Isolation Area</b>	185m <sup>2</sup> base 560m <sup>2</sup> sides

### In brief

CMS Vibration Solutions recommended a combination of Regupol RAV300 and CMS ISOSheet to isolate the foundations of two apartment blocks developed by McGarrell Reilly Homes, preventing the transmission of vibrations from nearby railway lines into the building structure.

### Project scope

The first phase of the McGarrell Reilly Homes development in Cambridge comprised two apartment blocks, set over three storeys. As the apartments are located next to a railway boundary, vibration control treatments had to be planned into the building design, to prevent ground-borne vibrations generated by the trains operating nearby from entering the building structure.

Working with the structural engineers for the project, Durman Stearn, CMS Vibration Solutions recommended a combination of Regupol RAV300 and CMS ISOSheet materials to isolate the concrete foundations.

During the excavation of the foundation pits, Durman Stearn identified that the ground was composed of sand and gravel rather than clay, resulting in a rough surface on the sides of the foundation. CMS Vibrations advised that permanent formwork was required so that Regupol RAV300 and CMS ISOSheet could still be used to isolate the foundation pit.

Available exclusively in the UK through CMS Vibrations, Regupol RAV300 is a high performance polyurethane bound rubber granulate material. In total, 185m<sup>2</sup> of 50mm thick Regupol RAV300 was installed under the foundations to eliminate the potential of structural borne noise and damage that could be caused by the train vibrations.

To achieve complete isolation, 560m<sup>2</sup> of CMS ISOSheet, a medium density closed cell structure foam, was specified for the sides of the foundations.

Once the anti-vibration materials had been installed, a damp proof membrane was applied and the concrete footing cast as normal.



**A combination of Regupol RAV300 and CMS ISOSheet was used to isolate the foundations of two apartment blocks by McGarrell Reilly Homes**



## Results

Garry Ford, company buyer, Durman Stearn, comments: "The flexibility of Regupol RAV300 and CMS ISOSheet meant we could easily overcome the unexpected complications of the ground composition. Once the sides of the foundation pit had been prepared with formwork, the installation of the anti-vibration treatments was really straightforward."

Regupol RAV300 and CMS ISOSheet provided natural frequencies in the range of 8-12Hz. The proven performance levels and adaptability of Regupol RAV300 and CMS ISOSheet led to the specification of the materials for the second phase of the development.

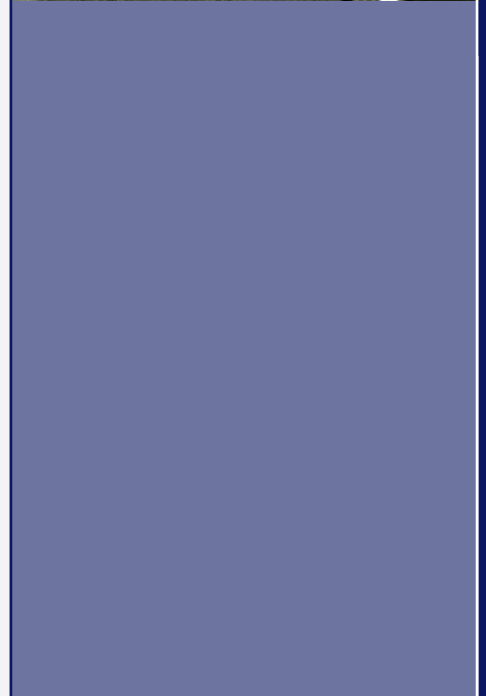
## Benefits

### Regupol RAV300

- Excellent damping and isolation characteristics
- Medium load bearing capacity
- Low natural frequency in the range of 8-12Hz
- Supplied in easy to lay sheets
- Completely recycled and sustainable

### CMS ISOSheet

- High load bearing capabilities
- Low natural frequency in the range of 10-12Hz
- Environmentally friendly and sustainable
- Quick and easy to install
- Cost effective



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