

20 January 2014

Nick Lucivero
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Dear Nick

REHAU RAUPIANO in-situ acoustic testing

AECOM were engaged by REHAU to undertake acoustic testing of flow generated noise from waste water within RAUPIANO pipe work. Testing was undertaken in a purpose-built facility at Regency Park TAFE SA, Adelaide, South Australia between 22 October and 5 December 2013.

Testing was undertaken to allow comparison between REHAU RAUPIANO, PVC and HDPE pipe work, with and without Pyrotech 4525C pipework lagging for the following ceiling constructions, with and without R2.0 90 mm thick fibreglass batt ceiling insulation:

- 10 mm and 13 mm thick flushed plasterboard
- 10 mm thick Boral Endura vinyl faced plasterboard ceiling tiles (1200 mm x 600 mm)
- 16 mm thick Armstrong Fine Fissured ceiling tiles (1200 mm x 600 mm)
- 19 mm thick CSR USG Mars ClimaPlus ceiling tiles (1200 mm x 600 mm)

A wall construction of 13mm plasterboard with cavity insulation was also tested.

Three identical pipework layouts were used, each with a flow source of 9 Litres of water gravity fed from a toilet cistern. Spatial averaged measurements were undertaken within the test room, with all measurement data normalised to a test cell absorption area of 10m². An initial test with identical PVC pipe installations showed no significant difference in measured noise levels between the three pipework layouts within the test room.

We have formed the following conclusions based upon the test results:

- REHAU RAUPIANO will generally provide a lower noise level than lagged PVC and HDPE when installed within a ceiling space that has insulation laid above a flushed plasterboard, plasterboard tile, or mineral fibre tile ceiling.
- REHAU RAUPIANO will generally provide a noise level within 3 dB(A) of lagged PVC and HDPE when installed within a ceiling space that does not have insulation laid above a flushed plasterboard, plasterboard tile, or mineral fibre tile ceiling. However, we are of the opinion that this will generally not be noticeable to the human ear.
- REHAU RAUPIANO will provide a lower noise level than lagged PVC when installed within a wall cavity behind 13 mm plasterboard with cavity insulation.

In terms of noise emission we are of the opinion that REHAU RAUPIANO is a suitable alternative to lagged PVC or lagged HDPE when installed in combination with ceiling or wall constructions that are acoustically equivalent to those tested.

Yours faithfully



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