

Doc Ref: TE405-01F02 (rev 3) Comparisons of Acoustic Performance.doc

Date: 3 February 2010

To: Boral Plasterboard

Attn: Mark Debevc Manager – Acoustic Systems

From: Nicholas Tselios

RE: BORAL PARTIWALL VS MASONRY WALL SYSTEMS – COMPARISON OF ACOUSTIC PERFORMANCE

Dear Mark,

I refer to your request to compare the acoustic performance of the Boral PartiWall system compared to alternate masonry wall systems.

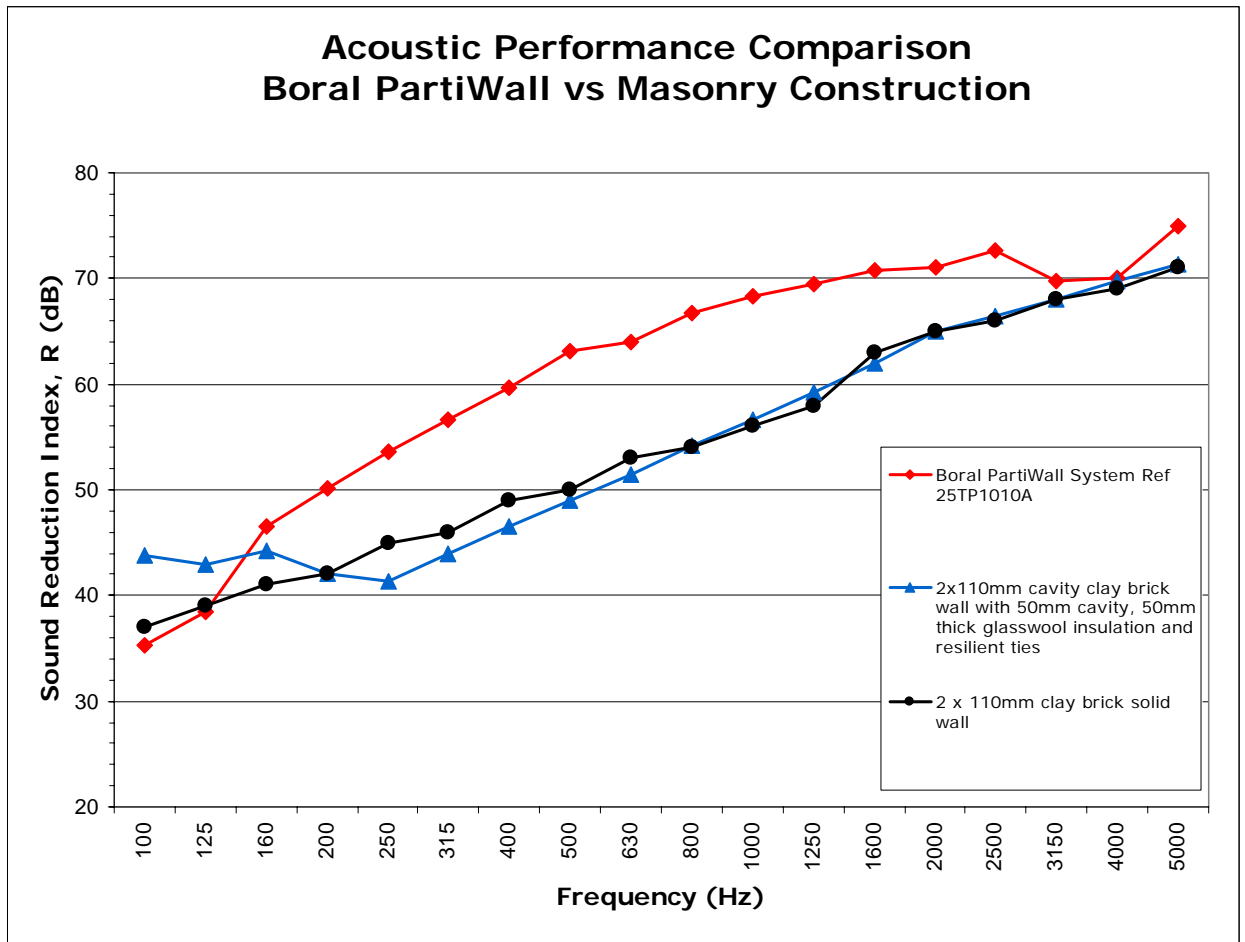
Our approach was to obtain laboratory tested data of the following wall constructions and present the acoustic performance of each wall system:

Wall System	Wall Description	Laboratory Test Report No	Overall Acoustic Performance	
			R _w	R _w + C _{tr}
1	Boral PartiWall (system no 25TP1010A) comprising of 1x25mm Boral ShaftLiner with 1x10mm Boral SoundStop plasterboard fixed to each side of the 90mm timber studwork and R2.5 ceiling batts insulation in both cavities of the wall	CSIRO TL469	63	53
2	2x110mm cavity clay brick wall with 50mm cavity, 50mm thick glasswool insulation and resilient ties	BCA Complying Wall (ref: BCA2009 Vol2, pg431) & NAL ATF1074	54	50
3	2x110mm clay brick solid wall	EBS Technical Study 48	55	50

The laboratory tested results show that the Boral PartiWall construction is 8dB better in acoustic performance when utilising the R_w descriptor and 3dB better in acoustic performance when utilising the R_w + C_{tr} descriptor. This is a significant difference.

As an additional exercise, the transmission loss in each frequency band of each wall configuration was also compared. A summary of the values is outlined in the graph below:





The graph shows the transmission loss in each individual frequency band from 160Hz to 5000Hz for the Boral PartiWall configuration is approximately 12dB better which means the wall has the ability to resist the transmission of sound better than the masonry wall systems. Subjectively, this means that the PartiWall is twice as good at attenuating sound over these frequencies.

In conclusion, by comparing the acoustic ratings and transmission loss of each wall system over the third-octave band frequencies, the Boral PartiWall system is overall a better performing wall at attenuating sounds at the low, mid and high frequencies.

Yours faithfully,

RENZO TONIN & ASSOCIATES (NSW) PTY LTD

Nicholas Tselios

Director

Architectural & Building Acoustics Team