

Boral CinemaZone™ Fact Sheet



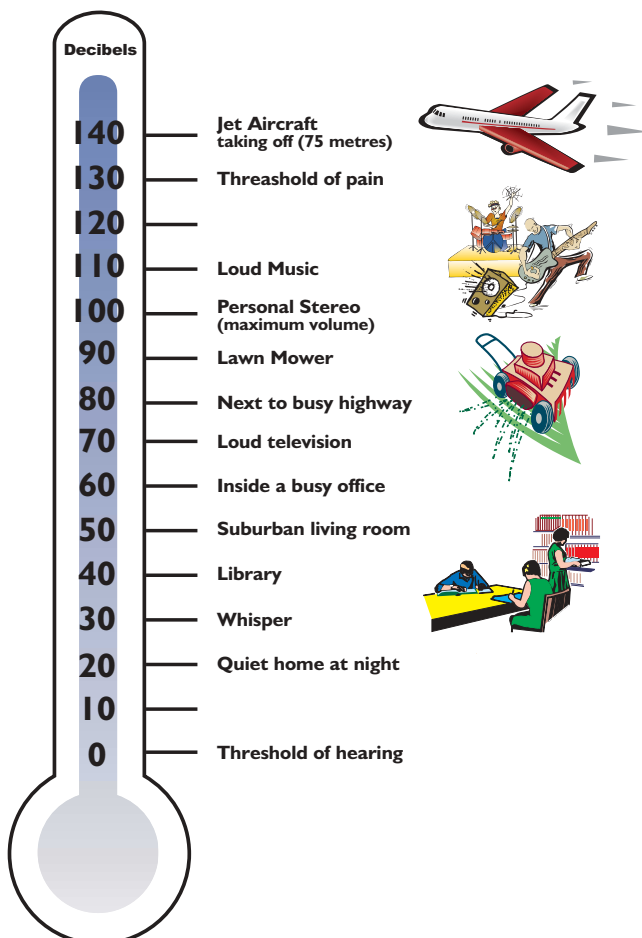
Performance

Home Cinemas

Home cinema systems are designed to bring true cinematic experience and enjoyment to the comfort of your home. One of the biggest advantages home cinema has over television is the sensation of being immersed in sound. Home cinema provides 360° of glorious sound that is so tangible, you feel like you're part of the action rather than just watching from the outside.

The home cinema audio system produces clear, undistorted sound over the whole frequency range available to the human ear. It breathes new life and realism into movies in stark contrast to the common television that has been primarily designed for just reproducing speech.

How noisy is noise?



One of the key elements to a successful home cinema is having a properly set up sound system. This is often comprised of six loud speakers and a sub-woofer for high-impact special effects. With strategically placed speakers, the home audience can enjoy the full dimensional movement of sound around the room, in time and place with the on-screen action.

However, the 'dream' sound system may fall well short of its full potential if it hasn't been installed in the right environment. This is where CinemaZone™ comes into its own.

The CinemaZone™ experience

CinemaZone™ adds a new dimension to home cinema by creating an acoustic environment that helps bring out the best in your sound system.

A real home cinema is more than just setting up audio/visual equipment. It depends upon the acoustic integrity of the room where proportions, noise transmission and sound absorption are key factors to success.

CinemaZone™ is a high quality acoustic plasterboard system that, when coupled with absorption panels, enhances your home cinema sound while minimising noise transmission to and from other rooms. This means you can enjoy the full-blown effects of your latest blockbuster movie without disturbing your family and neighbours - or them disturbing you!



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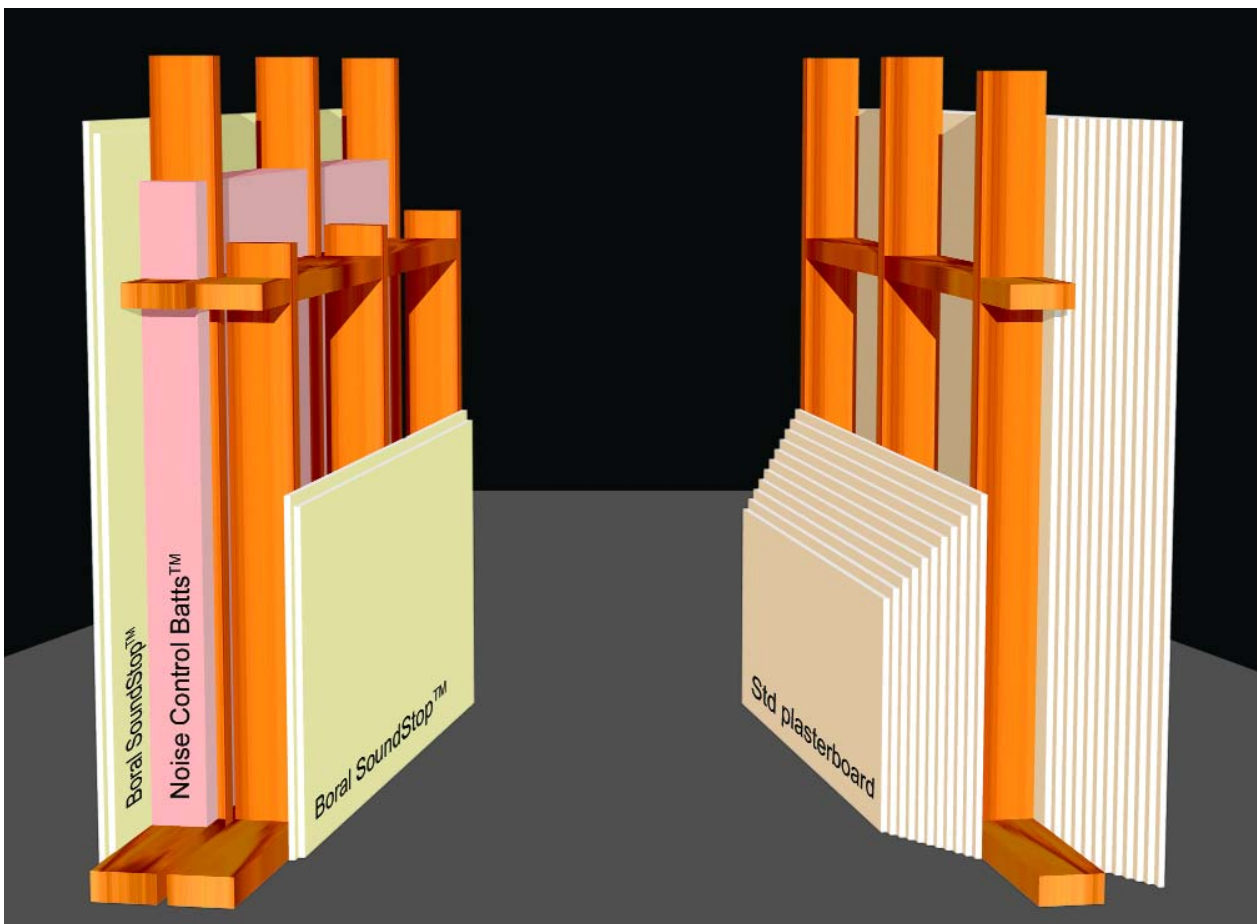
How does CinemaZone™ work?

There are two types of sound that can impact on the success of a home cinema; airborne sound such as speech and audio equipment, and structureborne sound such as vibrations from washing machines and dryers.

CinemaZone™ stops these from being a problem by:

- dramatically reducing the passage of airborne sound with high performance acoustic plasterboard
- physically isolating the cinema from house vibrations with an independent structural shell.

CinemaZone™ stops both unwanted sound entering the cinema and sound escaping to disturb others. The rest of the family can sleep, study and relax while you explore the outer limits of your movies and music.



Boral CinemaZone™ or 24 sheets of standard plasterboard?
Save time, space and money with CinemaZone™.



CinemaZone™

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Unwanted sound

Unwanted sound can be a source of anxiety for family members and neighbours. In extreme situations, unwanted sound can disturb sleep patterns, study/work environments and significantly add to stress. CinemaZone™ provides the ideal solution for those who want to enjoy the full potential of their entertainment systems but also appreciate the needs of others.

Sound Isolation

Most building components isolate sound to some degree - but just how much is guesswork without an accurate form of measurement? The Weighted Sound Reduction Index (R_w) provides a scientific basis for comparing the acoustic properties of building materials. Components with high R_w values have greater sound isolating properties than those with low R_w values.

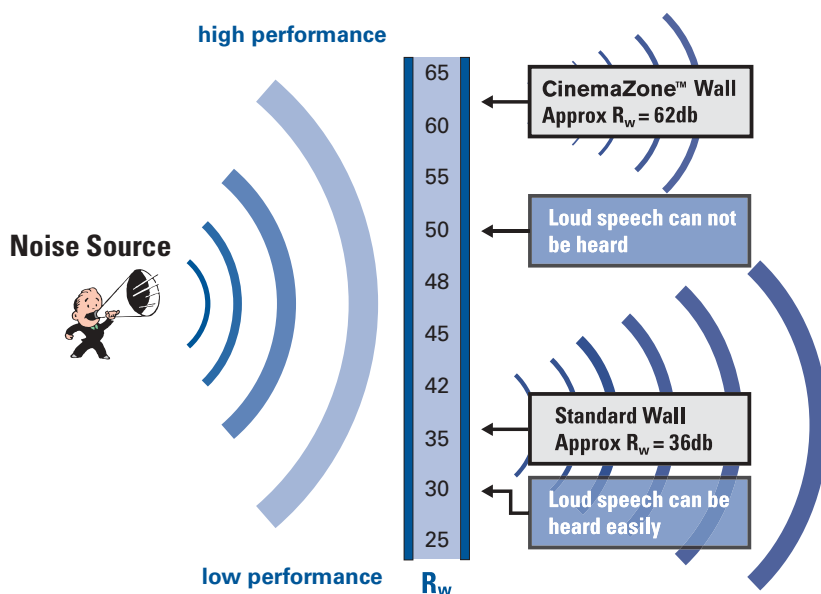
Enthusiasts and designers need to be aware that a 10dB increase in R_w values has the effect of halving the perceived sound. As an example, sound passing through a hollow core door ($R_w = 18\text{dB}$) will appear twice as loud as the same sound passing through a solid core door fitted with seals ($R_w = 30\text{dB}$). Rooms can now be designed to meet a specific level of acoustic performance.

The R_w ratings of some common materials are given as follows:

Description	R_w
Hollow core door	18dB
Solid core door with seals	30dB
Internal plasterboard stud wall	36dB
110mm brick wall	45dB
Boral CinemaZone™ wall system	62dB
Boral CinemaZone™ ceiling system (including roof)	55dB

Please note that the above results were obtained under laboratory conditions and may vary between sites.

Performance against speech



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Keep things in proportion

Like anything worthwhile, successful design doesn't just happen. The researcher L.W. Sempeyer has published the results of his findings for constructing a home cinema environment. For the best results, Boral recommends that your new CinemaZone™ is based on the proportions given in the following schedule.

	Height(m)	Width(m)	Depth(m)
Option 1 ratio	1.00	1.14	1.39
Option 2 ratio	1.00	1.28	1.54
Option 3 ratio	1.00	1.60	2.33

As an example, if your ceiling height is 2.7m, using the 'Option 1' ratio above, the width of the room should be 3.1m (1.14 x 2.7m) and the depth should be 3.8m (1.39 x 2.7m).

From Sempeyer L.W. Computed frequency and angular distribution of the normal modes of vibration in rectangular room, Journal of the Acoustic Society of America, Volume 37, Number 3 (March 1965) Pages 413-423 and extracted from Widescreen Review June/July 1994 pg 65.

Once your new CinemaZone™ cinema has been installed, there is one more thing to consider — the 'sweet spot'. This is the position that gives the highest sense of listening pleasure. There are no rules here. It relies totally on your personal preferences for screen, speaker and seating placement. Experimenting with different positions is all part of the fun for the true enthusiast. In fact, the CinemaZone™ experience may match commercial theatres because of the level of acoustic tuning available. For those who don't have time to experiment, acoustic consultants can assist with fine-tuning your CinemaZone™.

The 'sweet spot'

For more information on CinemaZone™ or to request the other free fact sheets in this series, call Boral Plasterboard TecASSIST on 1800 811 222 for a fax or email copy or visit the website: www.plasterboard.boral.com.au.

Design



Details to consider

- Sound coming in
- Sound going out
- Room dimensions
- Lighting
- Ventilation

Construct



New, extension or conversion

- how to build a Boral CinemaZone™ System

- Walls
- Floors
- Windows
- Ventilation
- Ceiling
- Doors
- Lighting

