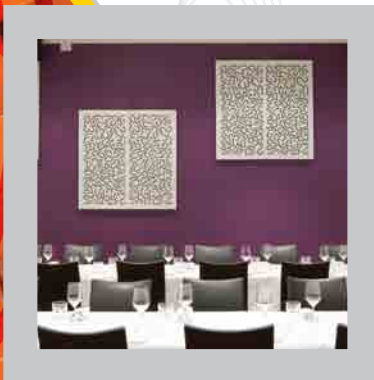
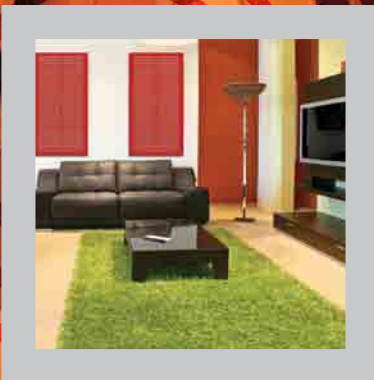




ECHOSHUSH®

)))))
cosmo

room acoustic panels



solutions
for better
living

Pyrotek
noise control



solutions for better living

This brochure covers the principles, design considerations and installation methods for controlling reverberation noise within buildings using Echohush Cosmo.

Cosmo panels combine acoustics and aesthetics, maximising noise energy absorption, improving acoustics in rooms and enclosed spaces while providing strong visual qualities to suit any decor. Echohush products improve audio and voice clarity in highly reflective areas.

noise problem defined

Reverberation (echo) occurs when reflected noise energy is not controlled. It takes place in areas where there are multiple non-absorbent hard surfaces, e.g., concrete slabs, plasterboard walls and ceilings, tiled floors etc. Highly reverberant rooms are at risk from what is known as the 'cafe effect'. As noise levels within a room rise, people speak louder to make themselves heard - a process that continually escalates the noise to an intolerable level.

To control reverberation noise or 'echo' within a room, the internal walls must be lined with an absorbent material to absorb the energy and therefore reduce the overall noise level.

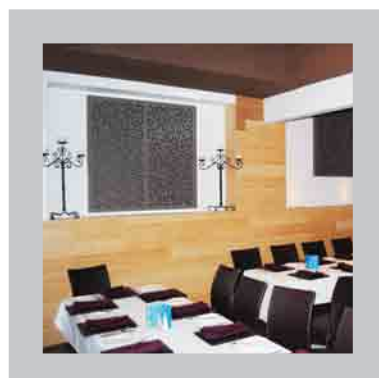
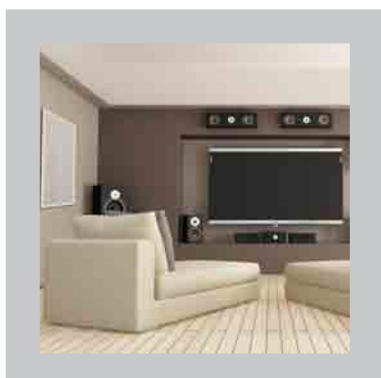
solution/application

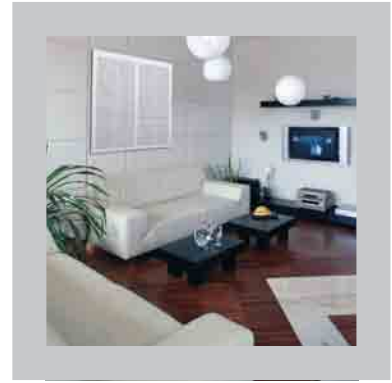
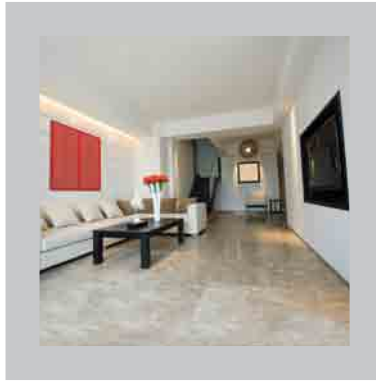
The decorative Cosmo panels are beneficial in many situations, including schools, bars, restaurants and call centres, to studios, showrooms and (home and commercial) theatres - anywhere you need greater privacy, improved acoustics or enhanced speech intelligibility. Echohush Cosmo enhances the quality of home entertainment and surround sound systems, by reducing conflicting echoes to create a neutral environment for clear audio reproduction.

Echohush Cosmo panels can be incorporated during the design process or retrofitted once construction is complete, as they provide an excellent option to resolve reverberation problems at any stage of a building fit-out.

Echohush Cosmo:

- Improves acoustics in enclosed spaces by absorbing noise energy, creating an improved environment for communication, while providing strong aesthetic possibility
- Efficiently absorbs reflected noise energy
- Resistant to intentional damage
- Cost effective and efficient
- Easy to install - no specialist tools required
- Available in six designs to suit individual applications
- DIY revolution - our unique picture frame design with installation incorporated, is as simple to install as hanging a picture (see install page 5)





Echohush Cosmo for home entertainment

What makes your home entertainment room a complete experience?

Is it the visual display? An expensive sound system? Luxurious seating? Mood lighting?

Ask most people and they'll mention these elements, but what about the room and its acoustics? The best equipment in the world will not provide the best outcome unless the room's acoustics support your listening experience.

Regrettably, where sound quality is concerned, the acoustics of the listening room are seldom taken into account. In reality, most people choose expensive, top of the range audio systems in an attempt to achieve the best-possible sound. However they often overlook one fundamental element, which is the acoustics of the listening room itself. The acoustical conditions of that room will inevitably take control over the sound quality.

Acoustical improvement is one of the most efficient and economical ways to increase the performance of a sound system, as all the various listening parameters can be improved in a considerable way. For DIY, it's possible to treat a room with affordable Echohush Cosmo panels whose acoustic properties will improve audio quality, reduce reverberated sound, assist in controlling background reflections and improve speech intelligibility.

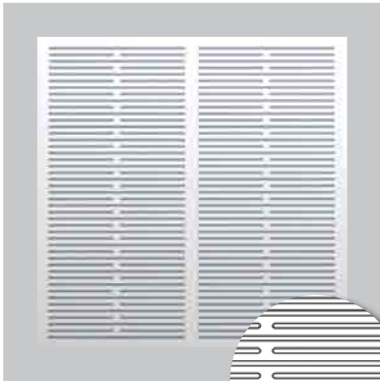
To establish the requirements for your room, consider the wall surfaces to which you can fix panels. The basic minimum treatment should be to the wall behind the listener or facing the speakers. Side walls can also be treated to reduce side reflections.

how many panels do I need?

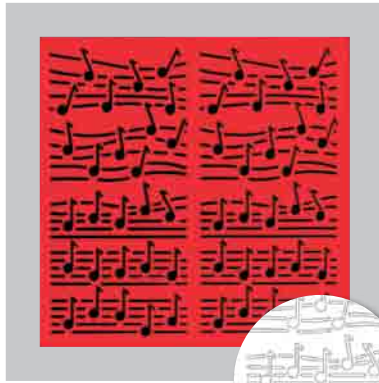
By utilising Echohush Cosmo on hard surfaces the problem of conflicting reflections can be easily controlled as demonstrated in our example room below, where as few as three panels have resolved the problem.

Our Room Calculator found on the website www.pyroteknc.com/echohush-cosmo will assist you in making a determination. For a quick guide: a typical home theatre may require as few as 3 - 4 panels.

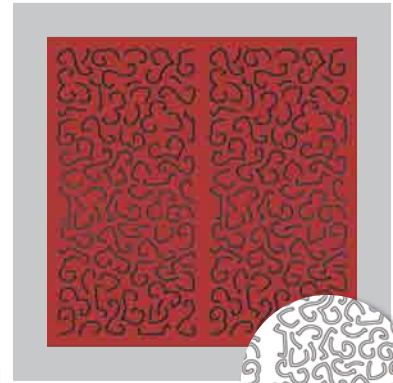




Classic



Jazz



Picasso



product construction

Available in six standard designs and nine stock colours, or depending on project size, to designer's choice. Echoshush Cosmo panels are manufactured from sheet metal and unlike timber or fabric panels, they contain no chemicals that may out-gas, and are not affected by moisture.

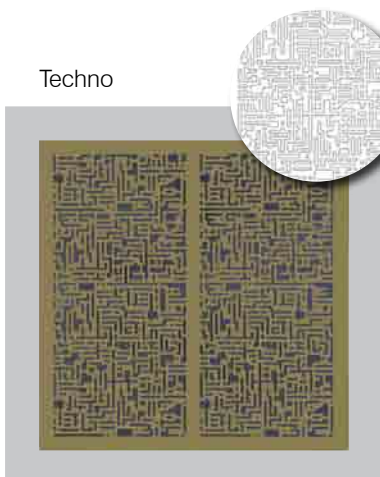
The sheet is made acoustically transparent by decorative cut-outs and is then formed into a three-dimensional panel, and powder coated to your colour choice. The three-dimensional shape creates a cavity that is filled with an acoustic medium giving the panels outstanding acoustic performance.

properties

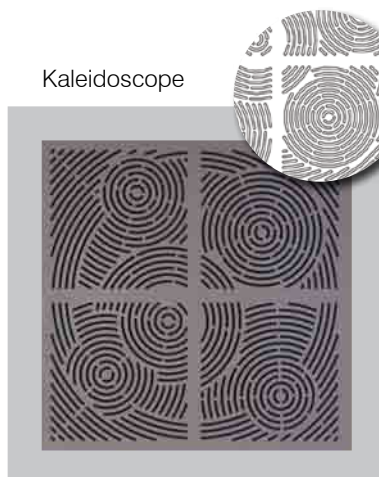
Product details	Zincaneal metal, powder coated finish
Standard panel size (stocked)	1000mm x 1000mm
Other panel sizes (MOQ may apply)	625mm x 1200mm
	1200mm x 1200mm
	Custom sizes for special projects
Total thickness	50mm
Product weight	8 - 9kg/m ²

designs available

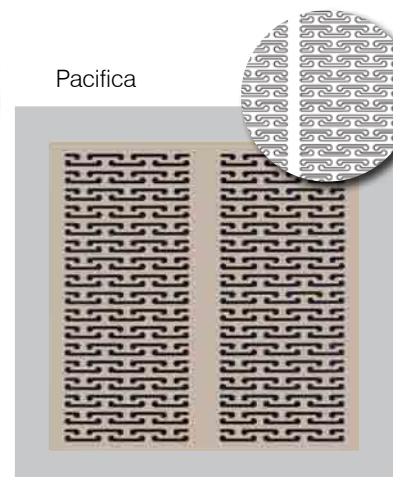
Classic, Jazz, Kaleidoscope, Pacifica, Picasso, Techno and custom designs for special projects.



Techno



Kaleidoscope

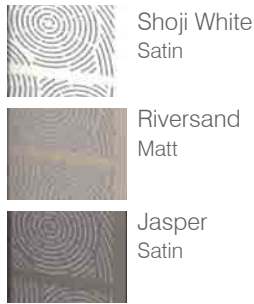


Pacifica





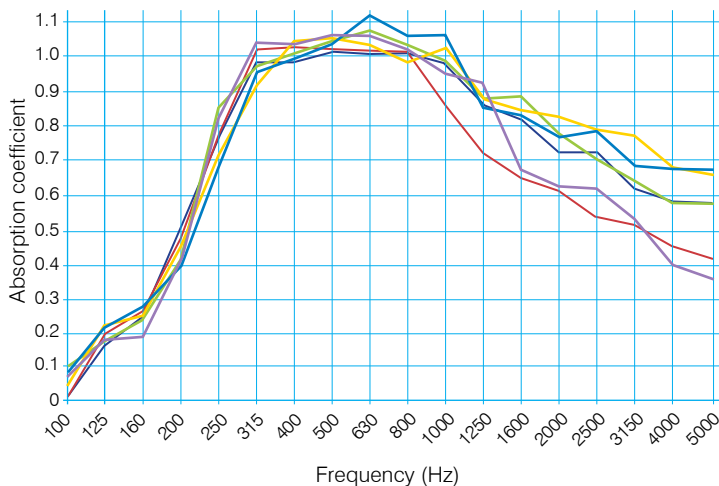
standard colours



acoustic performance

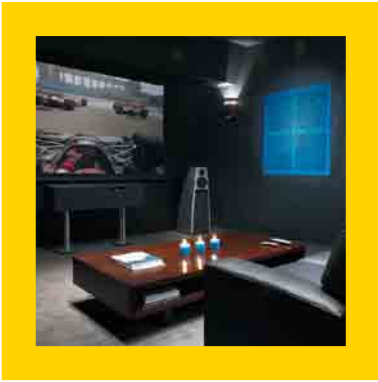
The data represented shows the performance of a 48kg/m³ fibreglass infill and panel facing, which are designed to minimise the effect of surface reflections. This is achieved by ensuring the total surface openings remain above a minimum percentage of the whole panel.

Product name	NRC
Classic	50mm 0.90
Jazz	50mm 0.85
Kaleidoscope	50mm 0.90
Pacifica	50mm 0.90
Picasso	50mm 0.85
Techno	50mm 0.90



Hz	Absorption coefficient					
	Jazz	Kaleidoscope	Pacifica	Techno	Classic	Picasso
100	0.06	0.06	0.10	0.03	0.08	0.07
125	0.20	0.18	0.18	0.22	0.21	0.17
160	0.25	0.26	0.24	0.25	0.27	0.19
200	0.48	0.52	0.41	0.45	0.40	0.43
250	0.78	0.79	0.85	0.71	0.68	0.82
315	1.05	0.98	0.98	0.92	0.96	1.04
400	1.08	0.97	1.04	1.03	0.99	1.03
500	1.06	1.02	1.06	1.03	1.04	1.05
630	1.06	1.10	1.08	1.11	1.13	1.06
800	1.04	1.03	1.03	0.98	1.05	0.91
1000	0.85	0.97	0.97	1.03	1.05	0.86
1250	0.73	0.86	0.88	0.89	0.86	0.84
1600	0.67	0.83	0.89	0.84	0.84	0.67
2000	0.62	0.73	0.77	0.83	0.77	0.64
2500	0.55	0.73	0.70	0.79	0.79	0.64
3150	0.52	0.61	0.65	0.77	0.67	0.53
4000	0.47	0.59	0.58	0.68	0.66	0.40
5000	0.43	0.58	0.58	0.65	0.66	0.36

Test data is for Cosmo standard designs in MDF finish.



durability

Echohush Cosmo has excellent durability and should last the life of the building or application, provided the material is used for its designed purpose, and installed and maintained according to the specification provided by the manufacturer.

specification guide

The noise insulation provided shall be "Echohush Cosmo Panels" made from powder coated laser cut metal. The cavity infill shall be Sorberpoly 2D black, Sorberfoam 50mm PU black facing or Sorberglass black facing (for improved fire ratings).

installation

Echohush Cosmo is simple and easy to install, hung like a picture on the wall. The recommended number of wall fittings need to be installed to manufacturer's specifications and each must be capable of supporting 5kg or greater.

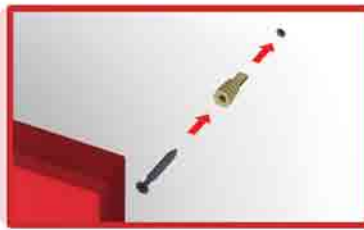
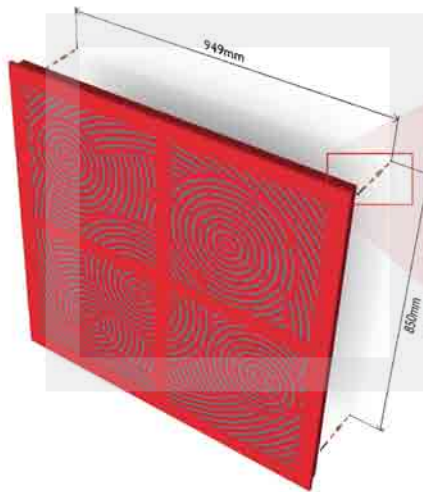


The panel has its own pre-folded boxed frame with fixing positions pre-cut into the frame making installation simple and easy.

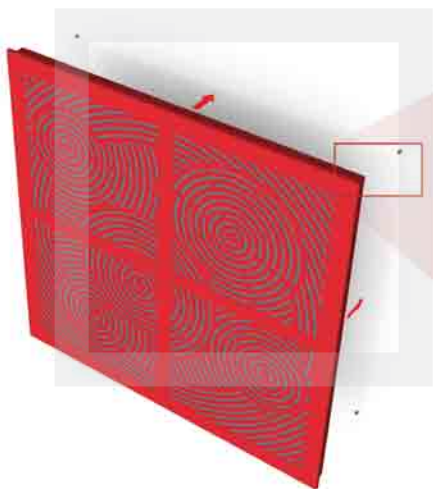


Echohush Cosmo panels are installed using a keyhole lock system cut into the frame of the panel. A level should be used to establish fixing position with measurement for wall mounts as shown on the diagram. The fixing positions are located as shown. The panel can be turned 90°, and the same measurements will apply.

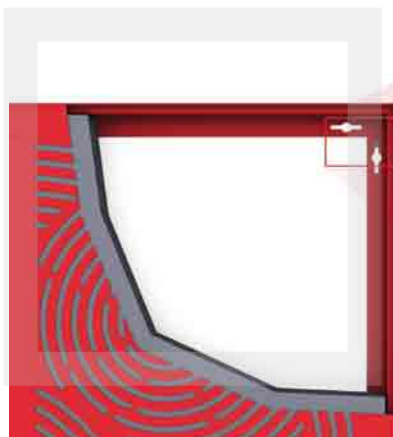




Echohush Cosmo panels can be fitted to plasterboard or masonry surfaces. When fixing to plasterboard, use a wall mount as shown, rated to >5kg. If fixing to concrete, use a >5kg masonry anchor. Four fixing points are recommended.



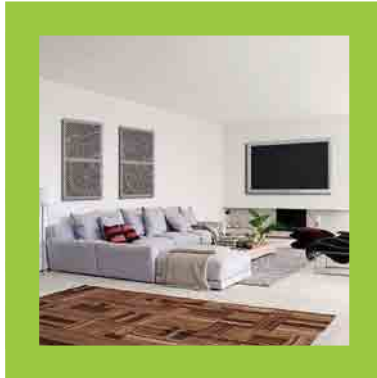
With the correct locations measured and wall mount fixed, leave the screw head 5mm out from the wall as shown.



Position the panel on to the screws in the centre of the keyhole and move the panels so that the screws sit in the narrow part of the keyhole as shown.



Finished fitting is hidden, safe and secure.



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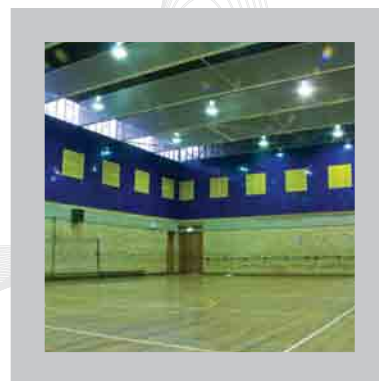
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noise control



NOTES: Specifications are subject to change without notice. The data listed in this document is typical or average values based on tests conducted by independent laboratories or by the manufacturer. They are indicative only of the results obtained in such tests and should not be considered as guaranteed maximums or minimums. Materials must be tested under actual service to determine their suitability for a particular purpose. The conclusions drawn from acoustic test results are as interpreted in writing by qualified independent testing authorities or suitably qualified engineers where possible. Even so, always seek the opinion of your own engineer as to the meaning of any data presented by the manufacturer as it is applied to any given project or use. **DISCLAIMER:** This document is covered by Pyrotek standard Disclaimer, Warranty and © Copyright clauses. See www.pyroteknc.com/disclaimer