



# SORBERMEL GC TACKLES REVERBERATION IN SPORTS COMPLEX - RUGBY HQ BUILDING SYDNEY

## THE CHALLENGES

The NSW government, Rugby Australia and University of Technology Sydney share the new facilities as a national sport and education hub. The combination of teaching areas, laboratories and training areas for sport and science programs are the latest in cross functional operations. The building opened in 2017 and accommodates courts, sport and exercise training facilities, a new Indigenous Centre of Excellence and multi-purpose training spaces for elite athletes. Students commenced classes in 2018.

To meet the noise criteria standard outlined under AS/NZS 2107:2016, the requirement was to design the sound level range to be less than 50 dBA – as well as ideally reducing the reverberation time to less than 2 seconds.

Typically, games played within indoor areas involve many voices, hard surfaces and amplified impact noise at frequent intervals. The acoustics of the space were critical. With the importance of 'need to hear and be heard' in this facility, if left unaddressed these enclosed spaces and indoor courts would reverberate the sound – meaning the purpose and ease of teaching in the area would be compromised.

In order for the design to effectively address reverberation, a good, low visual impact solution was needed. High performance absorptive acoustic material on the ceiling would reduce reverberation within the large area.

## THE SOLUTION

To reduce reverberation Sorbermel GC was supplied in absorbing panels for install above the indoor multi-purpose sports hall and training area. Sorbermel is a lightweight open-cell foam made from melamine resin. With high flame-retardant properties, Sorbermel has excellent sound absorption with the ability to effectively trap noise energy, preventing it from reflecting as echo.

The GC (glass cloth) facing, while providing thermal and acoustic improvements, was chosen for the contrasting, industrial aesthetic to the space. The facing also prevents dirt ingress and gave some contrast to the ceiling - a variety of colours are available in the GC range.

Working together with AW Edwards and the consultant team, the final design included the installation of the absorbing panels to address reverberation in the space. Additional benefit to this application was as a thermal barrier in underslab insulation - soft, as a thermal insulator to prevent condensation - but fundamentally in this application it worked effectively as an acoustic absorber.



The indoor basketball courts feature black acoustic, absorptive material in the ceiling. Sorbermel GC is Pyrotek's high-tech solution to reverberation.

Sorbermel was selected for its high performance in low frequency noise control. Addressing the acoustics of the high ceiling space meant a considerably more comfortable environment for training and learning. Sorbermel with black GC facing was installed into the architecturally designed roof cavity in panels distributed evenly to optimise acoustic impact.

## RESULTS

By installing Sorbermel GC, the reduced reverberation time in the space met the required 2 seconds. It achieved two effects - increased speech intelligibility (especially over distance, and PA) and reduced overall noise level in the space. With the results well received, Pyrotek were able to ensure a comfortable training facility.

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The large, high ceiling spaces are used for training and teaching, so the acoustics, particularly speech intelligibility were critical.

