

Insulation Insights

Case Study - Combining Sound and Insulation into a Removable Cover

While the typical request for removable insulation blankets is to deal with heat-related issues, from time to time we also get requests for help on sound attenuation.

Sound attenuation solutions are based on using combinations of materials to absorb sound, to offer barriers to sound, and to close up places where there is sound leakage.

While we do offer a wide range of sound attenuation products ([click here to view our sound attenuation product line](#)), certain applications call for the combination of sound attenuation products within our removable insulation blankets. (For more information on sound attenuation, please see our [Spring 2007 Insulation Insights](#) newsletter).

Firwin Corp was recently commissioned to develop and install such a combination blanket for a large newsprint manufacturer. The company's gas fired power plant consisted of 10 CAT Natural Gas engines. Each engine had its own dedicated after-treatment system, in this case Miratech SCRs (Selective Catalytic Reduction).



Firwin was approached to design and install removable insulation blankets that would act as a combination heat abatement / noise attenuation for these SCRs.

The company had an ambitious noise reduction requirement:

Req'd Noise Control	Octave Band Center Frequency (Hz)								
	31.5	63	125	250	500	1000	2000	4000	8000
Minimum Insertion Loss Req'd, SCR Lagging (dB)	2	6	15	23	23	25	25	25	16

“For that level of noise reduction, we needed to go with 4” thick blankets”, said Jon Miles, Firwin’s Design Manager. “We also decided to incorporate a Noise Block sound barrier into the blanket design, to arrive at the noise control goals over the frequency range that the client specified”, added Jon.

Because of the large size of these SCR’s and the thickness of the insulation blankets, the blankets needed to be designed in a ‘multipart / multilayer’ format, in order to facilitate handling and weight restrictions per piece. Other factors complicating the design were ensuring that access ports to the SCR’s were left open, and staggering the blanket ‘joins / seams’ to ensure a snug fit and optimal noise reduction.

What follows is an illustrated timeline of how the blankets were assembled:

Miratech SCR - PreInsulation





Installation – Inner Layer



Installation – Outer Layer



Complete Insulation and Installed



“This was quite the challenging project”, notes Jon. “But it really showcases Firwin’s strengths as a complete insulation solutions provider – from our ability to work with our clients to understand their needs, select the right materials and design, all the way to ensuring proper installation”.

For more information about this project, or how Firwin can help you with your insulation and sound attenuation needs, please contact the company directly.

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