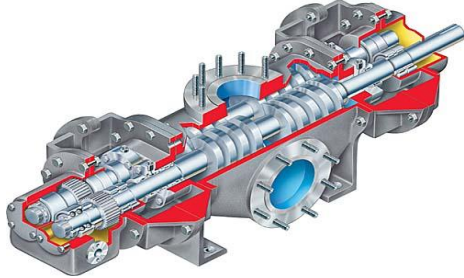


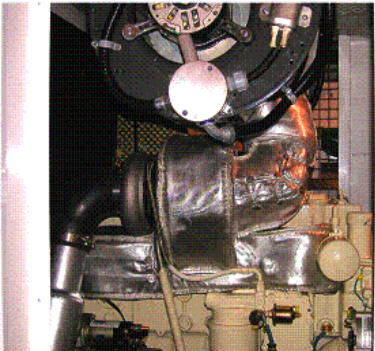
Sound Attenuation – Case Studies

Firwin Case Study #1

Large Hydro Corporation	
Problem:	High-pitched Sound of 110 dB on Screw pump used for pumping Glycol Coolant in Large Diesel Power Plant.
	
Objective:	Sound level had to be reduced to 85dB level to meet National Standard for Industrial plants. Easily removable blankets required for regular maintenance and inspection.
Solution:	Velcro fastening removable sound blankets. Special attention to all pipe openings using tie-downs onto adjacent permanent insulation to ensure no sound leaks. A muffler shroud was fitted on the end of the electric drive motor.
Result:	Using a full Octave band Sound analysis, the customer confirmed that sound levels had been reduced to an average of 85dB at 3 meters. Customer was satisfied with the result meeting the Industrial Standard.

Firwin Case Study#2

Quiet Diesel Generator Set Builder for Movie Industry

Problem:	Although the Container enclosing the generator-set had been lined with mineral wool boards the customer was not satisfied with the sound level outside the enclosure.
	

Objective:	Due to the size constraints required for the container size an innovative solution had to be found to attenuate the sound from the engine exhaust parts to between 65 dB to 75 dB. Any cover on the Engine had to be able to be removed for maintenance and inspection.
Solution:	Removable Sound blankets using a composite of 12 lb/ft ³ fiberglass and high temperature heavy density membrane. SS Capstan rivets and SS lacing wire and drawstrings were used to tie down onto adjacent piping [see photo].
Result:	End Customer was satisfied with the results - this was a very demanding customer.

Firwin Case Study #3

Large Underground Mining Corporation

Problem:	High-powered underground vacuum unit mounted on a truck. The sound level in the driver's cab was 95 dB and outside the cab 120dB. There were major complaints from both the drivers and the Mine Health and Safety Committee. Due to the constraints of narrow and limited height of mining tunnels/hauls regular enclosures were not feasible.
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Solution:	A combination of sound curtains, and removable sound insulation blankets [on the power pack, muffler, compressor and pipes].
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Result:	Sound levels in the cabin were reduced to 75 dB, outside the cabin to 105 dB on one side and 110 dB on the other. Although not entirely happy everyone agreed that within the restrictions of the situation there had been a marked workable improvement.
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FIRWIN FAQ

Fire Safety and Insulation Blankets - What are the Risks?

As a manufacturer of removable insulation blankets for high temperature applications, Firwin's blankets are designed to withstand extremely high temperatures. All the components that go into our blankets, be it the insulation fiber matt or the outer blanket cover, are rated as non-combustible and conform to various fire standards (MIL and UL).

The risk: Engine oil or hydraulic fluid lodging in the insulation matt.

In most cases, Firwin's Removable Insulation Blankets actually increase fire safety. By containing the extreme heat generated by diesel engines and their exhaust systems, engine rooms are safeguarded from overheating, and heat sensitive components are protected.

Our insulation solutions are often found on diesel powered equipment, and one of the most used applications is underground mining. Given its rugged environment, underground mining equipment has been known to spring an engine oil leak or hydraulic hose burst. If this fluid seeps underneath the insulation blanket and lodges into the mat, there is the possibility of spontaneous combustion.

The solution: [Firwin MineWrap™ Mark II and Mark III insulation blankets](#).

Firwin produces insulation blankets designed specifically to meet the stringent safety requirements of the underground mining community. Our MineWrap™ Mark II and Mark III insulation blankets are lined with a stainless steel foil inner liner, which effectively seals off any leaked oil or hydraulic fluid from coming into contact with the insulation mat material.