Insulation Insights
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Firwin FAQ – Can your insulation blankets be used for outdoor applications?

There are 2 possible problematic areas when considering using removable insulation blankets for outdoor applications:

- Potential of water getting underneath the blanket and not evaporating, which could in turn lead to pipe corrosion under certain conditions.
- The ability of the insulation material itself to perform properly when exposed to outdoor elements (i.e. cold, heat, reduction of insulation value when wet, etc.).

"Removable insulation blankets, by their nature, are not permanently sealed, and therefore they are not impervious to water", said Brett Herman, Firwin's V.P. of Sales & Customer Service. "So, the first question you should ask yourself when considering removable insulation blankets for an outdoor application is - 'Can I afford any water at all to get in under the blanket ?', said Brett. "If the answer is an absolute no, then we would not suggest removable insulation blankets, as it is quite likely that some water will get in at some time or another."
"But if the problem is not the occasional water getting under the blankets, but rather the fear that if the water remains, it may cause pipe corrosion, then depending on the application, removable insulation blankets are a definite option", notes Brett.

High temperatures from typical engine exhaust applications, provided they are non-cyclical, will burn off any excess water that may get under an insulation blanket, thus eliminating the risk of corrosion due to water.

Regarding the ability of the insulation materials themselves to withstand outdoor conditions, the standard outer layer used in removable insulation blankets, silicone impregnated fiberglass, can withstand temperatures as low as -67°F before cracking, and have a UV resistant coating. As for the effect of water on the insulation material, some materials are more resistant to wetting than others. Both ceramic fibre and rockwool insulation, and to a lesser extent fiberglass, regain their insulation values once the water evaporates.

Firwin will also incorporate design modifications into blankets that are to be used for outdoor applications, such as extra flaps to reduce the amount of water that may get in underneath a blanket. Should the application be such where corrosion is known to be a potential issue, the company may recommend consulting with an outside corrosion engineer.

"Again, if a customer needs a 100% waterproof system, then removable insulation blankets are not the solution", said Brett. "But this is usually not the case for hot exhaust piping."

"The overall answer is 'yes', our blankets are suitable for outdoor applications, and indeed we have a number of customers who use them just for that", adds Brett. "The important thing is that we are notified so that we can ensure proper materials and design, and bring in any additional expertise if necessary ", notes Brett

The following links may be helpful for those seeking more information on the issues involved with outdoor insulation and corrosion in particular:

- *National Insulation Association :* Toolbox for Prevention of Corrosion Under Insulation
- *National Insulation Organization:* Is There a Cure for Corrosion Under Insulation?
- National Association of Corrosion Engineers.