Firwin Corp., 1685 Flint Road, North York, ON M3J 2W8 Canada
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Firwin MineWrap™

OVERVIEW

Over the last several years, Firwin Corp., manufacturer of removable/reusable insulation blankets, has been developing a special line of insulation products aimed at meeting the stringent safety requirements for underground mining. Our continuing R & D together with improved material technology and manufacturing techniques have allowed us to refine our mining insulation blanket design to be even more effective and more economical.

With standard insulation blankets there is a possibility that oils and hydraulic fluids can seep into the underside of the blanket through the mesh inner-liner and lodge in the insulation matt. A build up of oil in the insulation poses a significant danger of spontaneous combustion. A novel solution to this problem had to be found to meet the high safety standards maintained in mines.

Progressive insulation blanket R & D at Firwin Corp. has led to the development of a number of successful solutions for mining applications. Earlier designs have been improved leading to MineWrap™ Mark II and MineWrap™ Mark III.

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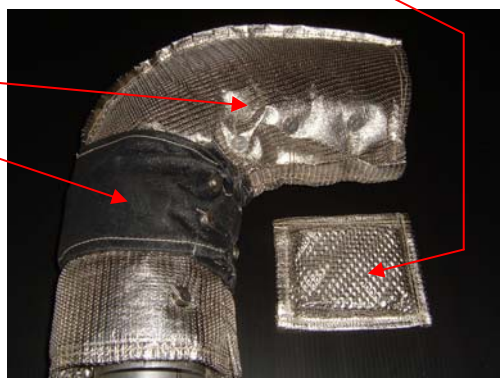
Both MineWrap™ Mark II and III feature a *stainless steel interior liner* designed to prevent oil from seeping into the insulation matt.

Mark III goes a step further by reinforcing the outer blanket layer with a *stainless steel outer liner covered by a stainless steel mesh*, for extra rigidity; and *safety seals* between blanket sections to prevent oil from reaching the exhaust, for an even higher measure of safety.



Below is a table that compares important properties of our standard blanket designs with MineWrap™ Mark II and III.

MINEWRAP™ TECHNICAL DATA AND DESIGN COMPARISONS

	STANDARD	MINEWRAP™ MARK II	MINEWRAP™ MARK III
Inner Layer (Hot)	S.S. Mesh	S.S. Mesh	S.S. Mesh
Fluid Barrier	None	S.S. Foil FTFoil	S.S. Foil FTFoil
Insulation[1]	Fiberglass	Superwool	Superwool
Heat Limit - Continuous (°F)	1100	1800	1800
Heat Limit - Intermittent (°F)	1200	1900	1900
Outer Layer (Cold)	Grey Silicone FCS1236	Red Silicone FCR1237	S.S. Laminated AHQ9215
Outer Layer heat limit – Intermittent (°F)	500	600	1100
Puncture & Tear Resistance – Inner Layer	N/A	Good	Good
Puncture Resistance – Outer Layer	Good	Good	Excellent
Cold Surface Touch Temperature (°F)**[2]	199	199	199
Extra Cost Relative to Standard Blanket[3]	-	1.6 X	3.1 X

MINEWRAP™ MARK II & III OUTER FABRIC COMPARISON

	SILICONE IMPREGNATED FIBERGLASS FCR1237	STAINLESS STEEL LAMINATED FIBERGLASS AHQ9215
Continuous Heat Limit	500°F / 260°C	900°F / 480°C
Tensile Strength (lbs./inch)	150-200	280
Color	Red-Brown	Metallic

[1] Insulation type can vary. Superwool is recommended for most high temperature applications.
[2] Based on 800°F hot surface, 80°F ambient, no air flow
[3] Each case will vary. These figures are for approximate comparisons only