



# Palabora Mining Company Limited

Registered in the Republic of South Africa No 1986/002134/06

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 Phalaborwa 1380  
 Republic of South Africa

Our Ref:

Your Ref:

## MINERAL FIBRE TESTING CERTIFICATE

Palabora order number	V5A 007/4
AMVERCO order number	PAL 013/05
Vessel	MV ATLANTIC PROJECT
Sailing date	10/5/2005

Palabora Mining Company maintains a strict sampling and analysis system through which all products dispatched by Palabora Mining Company are tested and certified free of asbestos before it is released into the customer supply chain.

The above shipment has been sampled and analysed according to Palabora Mining Company's audited and accredited ISO9002 quality assurance procedures and found to contain no amphibole or chrysotile asbestos fibres. The detection limit of the tests performed is 1ppm by mass (as per MDHS77, 1994).

Therefore, all of the vermiculite materials tested comply with the proposed 0.1% European packaging and labeling of carcinogen requirements (HSE, 1994b) and the 0.1% trigger value required for labeling of hazardous materials in the US.

The levels are also lower than the 0.001% for asbestos in loose aggregates proposed by Addison et al (1988) based on work at the IOM using asbestos and soil mixtures. Therefore, it is concluded that these materials or products containing them should not present a significant asbestos-related health hazard when used in controlled occupational environment.

  
**B.R. SCHAFFLER**  
 VERMICULITE BUSINESS MANAGER



Directors:

MR Manuma (Chairman), J H K Sachikonye<sup>1</sup> (Deputy Chairman), K Marshall<sup>1</sup> (Managing Director), T Albanese<sup>4</sup>,  
 S M Din<sup>1</sup>, D A Farnaby, G M Negota, J C Posthumus (Alt: P A Henry), W R J Ranson<sup>1</sup>, J E Rickus<sup>1</sup>,  
 R M Whyte<sup>1</sup> (Alt: F B Weldon), C N Zanga



Company Secretary: K N Mathole

<sup>1</sup>British <sup>2</sup>Australian <sup>3</sup>Zimbabwean <sup>4</sup>American

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# VERMICULITE BUSINESS

## LARGE

### CRUDE VERMICULITE QUALITY ASSURANCE SHEET

<b>Sample Origin:</b>	RICHARDS BAY			
<b>Ship's Name</b>	MV ATLANTIC PROJECT			
<b>Ref Number</b>	V5A 007/4			
<b>Tonnage</b>	1998			
<b>Sampling Date</b>	10/5/2005			
<b>Date Analysed</b>	25/5/2005			
<b>Sieve Size</b>	<b>Wt. Retained</b>	<b>% Retained</b>		<b>% Passing</b>
8.00 mm	5.0	9.6		90.4
6.70 mm	8.6	16.3		74.1
5.60 mm	11.0	21.1		53.0
4.00 mm	12.4	23.6		29.4
3.35 mm	7.9	15.1		14.3
2.80 mm	4.9	9.4		4.9
355 um	2.2	4.2		0.7
-355 um	0.4	0.7		0.0
<b>TOTAL</b>	<b>52.3</b>	<b>100.0</b>		
<b>Sinks</b>	<b>3.7</b>			
<b>Volume</b>	<b>720</b>			
			<b>Sample</b>	<b>Quality Assured</b>
<b>% by Weight retained in range - 8 mm + 2.8 mm</b>			<b>85.5</b>	<b>Minimum 80</b>
<b>% by Weight passing 355 um</b>			<b>0.7</b>	<b>Maximum 2</b>
<b>Non - exfoliating content</b>			<b>7.0</b>	<b>Maximum 10</b>
<b>Yield ( Cub.m/ton)</b>			<b>13.8</b>	<b>Minimum 12</b>

CHECKED BY : P Malatji



**Palabora America Ltd**  
A MEMBER OF THE RIO TINTO GROUP

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USA

**SODIUM CERTIFICATE**

Customer	Normiska USA
Customer PO#	
Vessel	MV Atlantic Project
Sailing Date	May 10, 2005

This certificate states that the sodium content in Palabora Mining Company PP&V vermiculite is between 0.03% and 0.09%.

Francie Wyatt  
Sales/Logistics