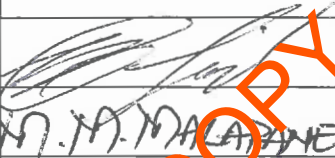
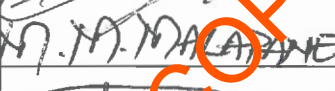


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Title	PURCHASE SPECIFICATION FOR MEDIUM GRADE VERMICULITE AND VERMICULITE CEMENT MIXTURE	

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PURCHASE SPECIFICATION FOR MEDIUM GRADE VERMICULITE AND VERMICULITE CEMENT MIXTURE

REVISIONS

This document has been revised according to the following schedule:

Revision	Date Approved	Nature of Revision	Prepared by
00	2005/01/31	- Supersedes NW-PUR-0005 Rev. 01 due to organisational changes - Revise to include the recommendations made in document NLM-AUD-04/001	RGF Robberts
2.0	2013/07/18	Change document template, Logo and change document Revision number in accordance with Necsa Numbering System. <i> - Revision # according to new numbering system – no 01 or 1.0 applicable.</i>	W Blofield
3.0	2020/03/06	Updated the document in accordance with LEMS QMS. Changed storage time for both Medium Grade Vermiculite and the Cement/Vermiculite Mixture.	W Blofield
4.0	See Title Page	Revise upper limits of the Medium Grade Vermiculite and Vermiculite Cement Mixture density verification acceptance test.	W Blofield

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PURCHASE SPECIFICATION FOR MEDIUM GRADE VERMICULITE AND VERMICULITE CEMENT MIXTURE

1 PURPOSE

This document outlines the specifications to be used for purchasing the medium grade vermiculite and vermiculite cement mixture that will be used in the MA concentrate solidification process at LEMS.

2 SCOPE

This document is applicable to all medium grade vermiculite and vermiculite cement mixtures that will be used in the MA concentrate solidification process at LEMS.

3 REFERENCES

[1] SHEQ-INS-5300: Written Safe Work Procedures, Instructions, Orientation and Task Training

4 ABBREVIATIONS

The abbreviations are used:

DC: Document Custodian
DM: Discipline Manager
LEMS: Liquid Effluent Management Services
MA: Medium Active (Effluent)
QMS: Quality Management System

5 DEFINITIONS

Vermiculite Cement Mixture: Superfine vermiculite and rapid hardening Portland cement mixture in accordance with LEMS specifications

6 RESPONSIBILITIES

- 6.1 It is the responsibility of the LEMS Section Head or his/her delegate to ensure the acceptance tests for the medium grade vermiculite and vermiculite cement mixtures are performed upon delivery to verify that the material conforms to the specification requirements before acceptance thereof.
- 6.2 The LEMS Section Head shall ensure that all relevant LEMS personnel have been trained in this document and authorized in accordance with [1].
- 6.3 It is the responsibility of the LEMS Section Head to maintain this document.
- 6.4 It is the responsibility of the LEMS Section Head to ensure the scale which is in use for the acceptance tests is calibrated in accordance with the LEMS QMS.
- 6.5 The LEMS Section Head shall submit an approved copy of this document to the potential supplier, to ensure conformance to the applicable specifications.
- 6.6 The Chief Operator: Operational Support or as delegated shall ensure that the packaging and storage are done as prescribed in Par. 9.

7 MEDIUM GRADE VERMICULITE

7.1 Purchasing Specifications

- 7.1.1 Loose fill bulk density (particle size approximately 4mm) with a maximum of 95kg/m³ and minimum 85kg/m³ to be used in the medium grade vermiculite.
- 7.1.2 Packaging – 8kg in Laminated woven polypropylene bags (bags must be watertight).
- 7.1.3 The internal density test results for the batches of medium grade vermiculite shall be provided by the supplier.
- 7.1.4 Each bag shall be stamped with the batch number and date when it was manufactured.

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7.2 Acceptance test (Density verification)

- 7.2.1 On arrival at Necsa, the Chief Operator: Operational Support or his/her delegate take 2 bags randomly out of the consignment of the medium grade vermiculite.
- 7.2.2 He/she opens the bags and takes a 2ℓ sample out of each bag. Each sample is then weighed in the 2ℓ container (Determine the weight of container first and subtract it from the total weight measured to obtain the net mass of the sample).
- 7.2.3 The samples shall be weighed on the scale inside Room 5 at P-2400. The scale shall not be removed from its position on the table inside Room 5. The scale is calibrated inside Room 5 on the table and if the scale is removed the calibration certificate is invalid.
- 7.2.4 The LEMS operator records the results on LE-FRM-0163: Verification of Medium Grade Vermiculite Particle Size (Exhibit 2).
- 7.2.5 If the weight for each 2ℓ sample is between 170 grams and 220 grams, the batch is acceptable.
- 7.2.6 The operator sends the completed LE-FRM-0163 form to the LEMS Section Head. The LEMS Section Head verifies the completeness of the form; checks if the consignment of medium grade vermiculite complies in accordance with the purchasing specifications in this document and signs the form.
- 7.2.7 If the weight for a 2ℓ sample falls outside the 170 grams and 220 grams criteria, the Chief Operator or his/her delegate must register a non-conformance in accordance with the LEMS QMS and inform the LEMS Section Head for further investigation and corrective action.
- 7.2.8 If the batch is acceptable, the operator completes and signs LE-FRM-0162: Identification of Medium Grade Vermiculite and Vermiculite Cement Mixture (Exhibit 1).
- 7.2.9 The accepted medium grade vermiculite shall be placed inside the store for unprocessed materials at the Drum Preparation area or another suitable, identified area.

8 VERMICULITE CEMENT MIXTURE

8.1 Purchasing Specification

- 8.1.1 Loose fill bulk density of superfine vermiculite to be used in the mixture (particle size approximately 1mm) maximum 122 kg/m³ and with a minimum of 118 kg/m³.
- 8.1.2 Cement specification: Rapid hardening Portland cement.
- 8.1.3 Vermiculite cement mixture: 10 parts of Portland cement to 1 part of superfine vermiculite by weight.
- 8.1.4 Packaging: 25kg to 25,2kg in woven polypropylene bags with plastic liner (bags to be watertight).
- 8.1.5 The following documentation will be supplied by the supplier for each consignment of vermiculite cement mixture:
 - Bulk density loose;
 - Test results for plaster setting time (when requested by LEMS);
 - Process control records (e.g. Mixers production records) if requested by LEMS.
- 8.1.6 Each bag shall be tagged with the date and batch number when it was manufactured (in black). The back side of the tag shall indicate the expiring date (in red) of the cement which was used to manufacture the batch of vermiculite cement mixture.

8.2 Acceptance Test

- 8.2.1 On arrival at Necsa, the Chief Operator or his/her delegate shall ensure the Certificate of Analysis of the Bulk Density Loose was submitted by the supplier.
- 8.2.2 On arrival at Necsa, the Chief Operator or his/her delegate take 2 bags randomly out of the consignment of the vermiculite cement mixture.
- 8.2.3 He/she opens the bags and takes a 1ℓ sample out of each bag. Each sample is then weighed in the 1ℓ container (Determine the weight of the container first and subtract it from the total weight measured to obtain the net mass of the sample).
- 8.2.4 The samples shall be weighted on the scale inside Room 5 at P-2400. The scale shall not be

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PURCHASE SPECIFICATION FOR MEDIUM GRADE VERMICULITE AND VERMICULITE CEMENT MIXTURE

removed from its position on the table inside Room 5. The scale is calibrated inside Room 5 on the table and if the scale is removed the calibration certificate is invalid.

- 8.2.5 The LEMS operator records the results on LE-FRM-0164: Verification of Medium Grade Vermiculite Particle Size (Exhibit 3).
- 8.2.6 If the weight for each 1ℓ sample is between 660 grams and 860 grams, the batch is acceptable.
- 8.2.7 The operator sends the completed LE-FRM-0164 form to the LEMS Section Head. The LEMS Section Head verifies the completeness of the form; checks if the consignment of vermiculite cement mixture complies in accordance with the purchasing specifications in this document and signs the form.
- 8.2.8 If the weight for a 1ℓ, falls outside the 660 grams and 860 grams criteria, the Chief Operator or his/her delegate must register a non-conformance in accordance with the LEMS QMS and inform the LEMS Section Head for further investigation and corrective action.
- 8.2.9 If the batch is acceptable, the operator completes and signs LE-FRM-0162: Identification of Medium Grade Vermiculite and Vermiculite Cement Mixture (Exhibit 1).
- 8.2.10 The accepted vermiculite cement mixture shall be placed inside the store for unprocessed materials at the Drum Preparation area or another suitable, identified area.

9 PACKAGING AND STORAGE AT LEMS

- 9.1 The maximum level that the bags can be stacked on top of each other is determined by the supplier. On receipt of the bags at LEMS, count the quantity of bags stacked on top of each other. When the bags are offloaded at the storage area at LEMS, this quantity must not be exceeded.
- 9.2 The maximum storage time for each batch of medium grade vermiculite is six months from the date of manufacturing (see 7.1.4).
- 9.3 The maximum storage time for each batch of vermiculite cement mixture is the expiring date of the cement which was used to manufacture the batch of vermiculite cement mixture (see 8.1.6).
- 9.4 Material shall be used in accordance with the expiring date for the medium grade vermiculite and the vermiculite cement mixture respectively.
- 9.5 Order frequency and size must be based on usage and storage capacity.
- 9.6 Material first acquired must be used first (first in – first out).

10 QUALITY RECORDS

The following are designated quality records:

DESCRIPTION	RETENTION PERIOD	BY WHOM
Completed LE-FRM-0162	30 Years	LEMS: DC
Completed LE-FRM-0163	30 Years	LEMS: DC
Completed LE-FRM-0164	30 Years	LEMS: DC
Purchase Documentation	30 Years	LEMS: DC
Supplier supplied documentation	30 Years	LEMS: DC

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**PURCHASE SPECIFICATION FOR MEDIUM GRADE VERMICULITE AND
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11 LIST OF FORMS

FORM NUMBER	TITLE	EXHIBIT NUMBER	EXHIBIT NUMBER
LE-FRM-0162	Identification of Medium Grade Vermiculite and Vermiculite Cement Mixture		1
LE-FRM-0163	Verification of Medium Grade Vermiculite Particle Size		2
LE-FRM-0164	Verification of Vermiculite Cement Mixture Particle Size		3

UNCONTROLLED COPY

LIQUID EFFLUENT MANAGEMENT SERVICES					 We're in your world		
VERIFICATION OF MEDIUM GRADE VERMICULITE PARTICLE SIZE							
Medium Grade Vermiculite order number:							
SAMPLE 1							
Sampling		Weight of 2 litre sample (grams)	Weight Criteria	Acceptable (tick)			
Date	Time			YES	NO*		
			>170 GRAMS	YES		NO*	
			< 220 GRAMS	YES		NO*	
SAMPLE 2							
Sampling		Weight of 2 litre sample (grams)	Weight Criteria	Acceptable (tick)			
Date	Time			YES	NO*		
			>170 GRAMS	YES		NO*	
			< 220 GRAMS	YES		NO*	
* Register a Non-Conformance Report in accordance with LEMS Quality Management System NCR Number:							
COMMENTS:							
RECEIVED BY:							
Date:		Name:		Signature:			
LEMS SECTION HEAD:							
Date:		Name:		Signature:			

LIQUID EFFLUENT MANAGEMENT SERVICES				 We're in your world	
VERIFICATION OF VERMICULITE CEMENT MIXTURE PARTICLE SIZE					
Vermiculite Cement Mixture order number:					
SAMPLE 1					
Sampling		Weight of 1 litre sample (grams)	Weight Criteria	Acceptable (tick)	
Date	Time			YES	NO*
			> 660 GRAMS	YES	NO*
			< 660 GRAMS	YES	NO*
SAMPLE 2					
Sampling		Weight of 1 litre sample (grams)	Weight Criteria	Acceptable (tick)	
Date	Time			YES	NO*
			> 660 GRAMS	YES	NO*
			< 660 GRAMS	YES	NO*
* Register a Non-Conformance Report in accordance with LEMS Quality Management System. NCR Number:					
COMMENTS:					
RECEIVED BY:					
Date:		Name:		Signature:	
LEMS SECTION HEAD:					
Date:		Name:		Signature:	