

# VERMITEX "7" FS

## SPECIFICATION

### VERMICULITE CONCRETE FOR INTERNAL AND EXTERNAL ELEMENTS OF CONSTRUCTION

## 1.0 **GENERAL**

### 1.1 **SCOPE**

This specification consists of all labour, materials, equipment and services necessary to complete the supply and installation of all required Vermiculite Concrete as shown in the drawings and specified hereinafter, including but not limited to the following:

- (i) Vermiculite Concrete over substrates
- (ii) Waterproof protective coating over Concrete Slab in specific areas
- (iii) Preparation of surfaces
- (iv) Waterproof protective coating over Vermiculite Concrete in specific areas

This specification is to be read in conjunction with drawings and documents referenced in the tender package.

### 1.2 **STANDARDS**

The following Australian and International Standards are referenced in this specification:

AS2592: Gypsum plaster for building purposes

AS1315: Portland cement

AS/NZS ISO 9002: Quality systems. Model for quality assurance in production, installation and servicing

All material and installation process shall comply with the applicable provision of the above listed standards.

### 1.3 **AUTHORITIES AND LEGISLATION**

All materials and workmanship shall comply in all respects with the provisions and the requirements set out within the relevant Building Codes and Industry 'best practice'.

The contractor shall have responsibility to perform all the required preliminary tests and make all the required submissions in order to obtain the necessary approvals.

### 1.4 **SUBMISSIONS**

The following submissions are required:

- (i) Name of Material Manufacturer including description of the proposed Lightweight Concrete material.
- (ii) Manufacturer's Product Information
- (iii) Proposed material thickness for application.
- (iv) The following test results for all test procedures shall be submitted before completion:
  - (a) AS1530 Part 3 or equivalent:
    - Ignitability Index
    - Spread of Flame Index
    - Heat evolved Index
    - Smoke Developed Index
- v) A current Certificate of Registration from a JAS-ANZ approved third party accrediting body certifying

## 1.5 WARRANTIES

The Contractor shall undertake and assume total responsibility for the Vermiculite Concrete application to the substrates.

The Contractor shall repair or replace all materials which have excessively cracked or dusted, flaked, peeled away from the substrate, or has otherwise failed to fulfil the performance criteria, due to defective materials and/or workmanship.

## 2.0 MATERIALS

### 2.1 DESCRIPTION

The Vermiculite Concrete shall be a mechanically applied material, to be proposed by the system manufacturer and equal in all respects to VERMITEX '7' FS as manufactured by L & A Fazzini Manufacturing Pty Ltd.

Where applicable, a waterproofing coat may be applied over the VERMITEX '7' FS in accordance with the waterproofing manufacturer's specification and recommendation, to achieve a total cover to areas as specified.

**All materials contain no asbestos, fibrous or toxic substances.**

### 2.2 PERFORMANCE CRITERIA

The Vermiculite Concrete shall comply with the following requirements and be manufactured by a Company which has a current Quality Management System in place in accordance with AS/NZS ISO 9002.

▪ EARLY FIRE HAZARD PROPERTIES (AS1530, Part 3):

- |                           |           |
|---------------------------|-----------|
| a) Ignitability Index:    | 0         |
| b) Spread of Flame Index: | 0         |
| c) Heat Developed Index:  | 0         |
| d) Smoke Developed Index: | 1 or less |

▪ DENSITY (AS3784):

The Vermiculite Concrete material shall not, exceed a dry in-place density of 600 kg/m<sup>3</sup>.

▪ MATERIAL THICKNESS:

The thickness of the Lightweight Concrete material to be applied shall be determined by the Consultant to provide the necessary degree of Insulation. Schedules for the various thickness shall be confirmed prior to work commencing on site and shall be strictly adhered to.

**No other form of documentary evidence will be accepted as proof of conformance.**

▪ **REINFORCEMENT:**

Where shown in the drawings and as outlined in other parts of the relevant specifications the Lightweight Concrete Screed may be mechanically reinforced with suitable galvanised mesh with apertures not less than 25 x 25 mm and 1 mm wire gauge.

▪ **CORROSION:**

The Vermiculite Concrete shall have a non corrosive effect on steel.

### 2.3 DESIGN CRITERIA

Vermiculite Concrete shall be applied to meet the requirements of the relevant Building Codes and in accordance with Industry 'best practice', on all exposed surfaces to provide the required Insulation level as set out below.

PROJECT: THE GRAND HOTEL			
Area	Element	Thickness (mm)	Protection Required
Ground Floor	Roof Slab	75	Waterproof Protective Overcoat
Level 2	Mezzanine & Balcony	100	Nil

### 2.4 HANDLING, STORAGE AND PROTECTION

All Vermiculite Concrete shall be delivered in original unopened packages bearing the name of the manufacturer, the brand together with proper approvals and instructions for its use on site.

The material shall be kept dry until ready for use. The material shall be kept off the ground under cover and away from sweating walls and other damp surfaces. All bags that have been exposed to water before use shall be discarded. Stock of material is to be rotated and used prior to its expiration date.

### 3.0 INSTALLATION OF VERMICULITE CONCRETE MATERIAL

#### 3.1 INSPECTION

Prior to the application of the Vermiculite Concrete material, an inspection shall be carried out to ensure that all surfaces and the work environment are acceptable for work to commence.

Ensure that all other attachments, such as clips, sleeves, angles etc. have been installed by others as required prior to the application of the Vermiculite Concrete.

Ducts, pipes, conduits or other services and equipment that interfere with the uniform application of the fireproofing material shall be positioned after the application of the sprayed fireproofing.

### 3.2 PREPARATION

#### ▪ GENERAL:

All surfaces to receive Vermitex '7' FS Vermiculite Concrete shall be free of oil, grease, paints and primers, loose scale, dirt and other foreign substances, which may impair proper adhesion of the Vermiculite Concrete to the substrate. Where necessary, the cleaning of surfaces shall be the responsibility of the General Contractor, as outlined in other parts of the relevant specifications.

#### ▪ DASH/BOND COAT:

When substrate is excessively smooth or superior bond adhesion is required, PVA may be added in the mixing water of the Vermitex '7' FS and the resulting mortar should be applied as a Dash/Bond coat over the required area. Dash/Bond coat should only cover approximately 75% of the surface area. Please refer to L & A Fazzini Manufacturing Pty Ltd for further information.

#### ▪ MECHANICAL REINFORCEMENT:

Where required mechanical retention in the form of hot dip galvanised wire netting (25mm x 25mm x 1 mm) or low density galvanised expanded metal lath (1.84kg/m<sup>2</sup>) shall be used. Self-adhesive, glued or plastic pins to locate reinforcement may be used.

#### ▪ WORK SEQUENCE:

Where the Vermiculite Concrete material will be subject to heavy traffic or consequential damage by other trades; the Vermiculite Concrete shall be scheduled at the final phase of the construction program. Where this is inappropriate, measures shall be taken to minimise damage by physically protecting the Vermiculite Concrete during the course of construction.

### 3.3 APPLICATION

The Vermiculite Concrete material, protective overcoat and Dash/Bond coat are to be mixed and applied in accordance with the manufacturer's written instructions. (refer to L & A Fazzini Manufacturing Pty Ltd for further information).

Installation shall only be carried out by an approved applicator with experience in the laying of Vermiculite Concrete materials.

Comply with manufacturer's instructions for the particular conditions of installation in each case. If printed instructions are not available, or do not apply to the project conditions, consult the manufacturer's technical representative for specific recommendations before proceeding with the work.

Exercise care to instate material completely into inverted corners, and to build up work to full thickness at projecting corners. Cover substrate in a monolithic blanket of uniform density and appearance.

Protective coatings shall be applied over Vermiculite Concrete strictly in accordance with the protective coating manufacturer's recommendations and instructions.

Provide plastic protection to immediate areas to limit over spray. Remove excess and spillage promptly.

Patching and repair of Vermiculite Concrete damaged by other trades shall be performed under this section, and paid for by the trade(s) causing the damage.

### 3.4 PRECAUTIONS

No Vermiculite Concrete shall be applied prior to the completion of all Concrete cutting/coring as well as demolition work or other activity which may cause excessive slab deflections and/or vibrations.

Temperature and enclosure conditions shall be as required by the Vermiculite Concrete manufacturer.

Provisions shall be made for ventilation to properly dry the Vermiculite Concrete before covering. In enclosed areas lacking natural ventilation, air circulation and ventilation shall be provided by the Main Contractor.

Plaster and Portland cement based materials are alkaline and may have a corrosive effect on aluminium and aluminium based coated materials. Where VERMITEX '7' FS is to be applied in close proximity of these materials, please refer to L & A Fazzini Manufacturing Pty Ltd prior to commencement of works.

### 3.5 CLEANUP

Upon completion of the works, remove from site all equipment and legally dispose off all unused packaging, materials, containers, equipment and the like. Remove all excess material and over spray from walls and other adjacent surfaces that may have been splashed with Vermiculite Concrete.

All exposed wall and floor areas shall be left in a broom-clean condition.

### 4.0 QUALITY ASSURANCE

Before commencement of any work the Architect shall be presented with a copy of the current Certificate of Registration from a JAS-ANZ approved third party accrediting body certifying that the material manufacturer has a Quality Management System in place which complies with AS/NZS ISO 9002.

The architect may designate a qualified Project Quality Inspector who shall have the duties listed below and adhering to the guidelines set out in "Inspection Procedure for Field Applied Sprayed Fire Protection Materials":

- Check all conditions of application and approve same prior to commencing application of any area.
- Resolve, with the Main Contractor, any difficult application conditions (obstructed areas).
- Monitor the application of the Vermiculite Concrete to ensure compliance with all requirements and Works Method Statement.
- Check all Vermiculite Concrete progressively for compliance with thickness requirements.
- Maintain a daily log of all quality assurance inspections, noting any defects and corrective work.
- Submit a quality assurance inspection report at the completion of works, or section as required, attaching copies of the daily log.

### REJECTIONS:

Defective material or workmanship shall be rejected. All rejected work or materials shall be repaired or replaced by the Contractor at their own expense and to the satisfaction of the Main Contractor.

All reports shall be inspected by an authorised person prior to a formal rejection letter being issued.