

5311MN MAMMOTH NOVAHUSH ACOUSTIC CEILING TILES

1. GENERAL

If you have pre-customised this work section using the "questions and answers" provided as part of the downloading process, it may be necessary to amend some clauses to suit the final project-specific version.

The section must still be checked and customised to suit the project being specified, by removing any other irrelevant details and adding project-specific details and selections.

This section relates to the supply and installation of **Mammoth™ NOVAhush Acoustic Ceiling Tiles** for a suspended ceiling grid system.

It includes;

- Polyester ceiling tiles
- Polyester acoustic bafflestack

Modify / expand this clause to suit requirements of this specification section.

This section refers to a ceiling comprising of individual tiles supported on a suspended grid system. NOTE: The grid suspension system is manufactured by others and is not supplied by InsulPro.

1.1 RELATED WORK

Refer to 5311 SUSPENDED TILE CEILINGS for suspension system and grid.

Include cross references only to other work sections where they include directly related work.

Amend the suspended ceiling section to suit the suspension system and grid selected.

Refer to 4721N MAMMOTH ACOUSTIC INSULATION for acoustic insulation.

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

NRC	Noise reduction coefficient
CAC	Ceiling attenuation class
AWCINZ	Association of Wall and Ceiling Industries of New Zealand Inc

Documents

1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

[NZBC C/AS1-AS7](#) Protection from Fire

[NZS 1170.5](#) Structural design actions - Earthquake actions - New Zealand

[AS 2946](#) Suspended ceilings, recessed luminaires and air diffusers - Interface requirements for physical compatibility

[ISO 9705](#) Fire Tests: Full scale room test for surface products

Delete from the DOCUMENTS clause any document not cited. List any additional cited documents.

The following are related documents and if referred to in the work section need to be added to the list of DOCUMENTS.

[AS/NZS 1170.1](#) Structural design actions - Permanent, imposed and other actions
[AS 1397](#) Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium

[AS/NZS 2785](#) Suspended ceilings - Design and installation

[NZS 4219](#) Seismic performance of engineering systems in buildings

[ASTM C423](#) Test method for sound absorption and sound absorption coefficients by the reverberation room method

[ASTM C635](#) Standard specification for the manufacture, performance and testing of metal suspension systems for acoustical tile and lay-in panel ceilings

[ASTM C636](#) Standard practice for installation of metal ceiling suspension systems for acoustical tile and lay-in panels

[ASTM E1414](#) Standard test method for airborne sound attenuation between rooms sharing a common ceiling plenum (two room method)

[ASTM E1477](#) Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.

[BRANZ BU 369](#) Fitting tolerances

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

- Mammoth NOVAhush Acoustic Ceiling Tile Data Sheet
- Mammoth NOVAhush Bafflestack Data Sheet
- BRANZ report DC2343-1 'Water Vapor Sorption of Ceiling Tiles Under Controlled Conditions'
- BRANZ report FAR 4048 'Assessment Report on InsulPro Ceiling Tiles'
- BRANZ report FI 5373- TT 'AS ISO 9705 and ISO 9705 Fire Test and NCC Specification C1.10 and NZBC Verification Method C/VM2
- Appendix A Performance of InsulPro NOVAhush Acoustic Ceiling Tile.
- BRANZ report FAR 4147 'Assessment of a List of NOVAhush and Underfloor Blanket Polyester Insulation Product

Marshall Day Acoustics: CAC POLYESTER CEILING TILE - Acoustic Opinion on CAC and Dn,c,w of Ceiling Tiles and Baffles, 27 November 2013 (Refer to Mammoth for this report).

Living Building Challenge: Declare Program - Red List Free Declaration Status for Mammoth NOVAhush insulation.

Manufacturer/supplier contact details

Company: **InsulPro Manufacturing Limited**

Web: www.insulpro.co.nz

Email: info@insulpro.co.nz

Telephone: 0800 100 007

It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation, finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.

Mammoth is manufactured by InsulPro Manufacturing Ltd; a carboNZero certified organisation.

Warranties

1.5 SUPPLY WARRANTY

Provide warranty for:

50 years: For **Mammoth NOVAhush Acoustic Ceiling Tiles**

- Provide the warranty in the standard form in the general section 1237WA WARRANTY AGREEMENT.
- Commence the warranty from the date of practical completion of the contract works.
Modify or expand the clause to suit project requirements, options include:
 - *Change the standard form to be used*
 - *Commence the warranty from the date of completion of this part of the contract work*
 - *Commence the warranty from the date of purchase*

Requirements

1.6 QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified.

This clause includes generic text which should be expanded only if there are specific qualification requirements.

1.7 NO SUBSTITUTIONS

This specification forms an integral part of the acoustic design. Substitutions are not permitted to any of the specified system associated components and /or products.

1.8 CLEANING INSTRUCTIONS

Supply information on the materials and method of cleaning the ceiling tile over its expected life.

- 1.9 SPARE TILES
Provide spare matching ceiling elements in the quantities specified below. Deliver into a dry store at the site or elsewhere as directed and at agreed times. Refer to SELECTIONS for quantity.
Ask for packs of tiles. 595mm x 1195mm tiles come in packs of 10 tiles.

Performance

*Use these clauses if specifying by performance.
NOTE: Even when specifying by brand it may still be necessary to include some reference to performance.*

- 1.10 ACOUSTIC REQUIREMENTS
Refer to SELECTIONS for acoustic performance requirements.

- 1.11 FIRE GROUP NUMBERS
The Group Number Classification to NZBC C/AS1-AS6, Table 4.1, has been determined in accordance with NZBC C/VM2 Appendix A, following testing ISO 9705 (test report referenced Manufacturer's documents).

Product:	Group number:
Mammoth™ NOVAhush Acoustic Ceiling Tiles	1S
Mammoth™ NOVAhush Bafflestack	1S

- 1.12 ENVIRONMENTAL REQUIREMENTS
Design the ceiling system for use over its expected life without deterioration in the specified temperature and humidity range. Refer to SELECTIONS.
If this clause is not used and the SITE CONDITIONS clause cannot be complied with, then allowance needs to be made for a tile that will not sag over the construction period.

InsulPro recommend that where there is a risk of condensation a suitable watertight breathable membrane should be fitted on top of ceiling tiles to reduce the risk of water staining. Refer to InsulPro for details.

- 1.13 REFLECTANCE
Refer to SELECTIONS for reflectance and colour.

2. PRODUCTS

Materials

- 2.1 CEILING TILES
Mammoth NOVAhush Acoustic Ceiling Tiles, high density 100% polyester. Finished white polyester with a grey speckled or other surface print. Refer to SELECTIONS.
Supplied by InsulPro.
- 2.2 POLYESTER ACOUSTIC CEILING BAFFLESTACK
Mammoth NOVAhush Bafflestack made from 100% polyester fibres thermally bonded to form a flexible blanket/roll for controlling ceiling path sound transmission. Refer to SELECTIONS for options.
- 2.3 GRID SUSPENSION SYSTEM
Refer to 5311 SUSPENDED TILE CEILINGS for suspension system and grid.
Amend the suspended ceiling section to suit the suspension system and grid selected.

3. EXECUTION

Conditions

- 3.1 CO-ORDINATE SERVICES
Co-ordinate and co-operate with electrical and mechanical work to avoid conflict with installation of tiles and the unnecessary removal of tiles.

3.2 SITE CONDITIONS
Do not begin installation until the building is closed in, fully glazed, the roof watertight, the atmospheric conditions within the manufacturer's guidelines, and mechanical and electrical duct work above the ceiling completed.
If fast track construction is used, this may not be possible and tiles must be selected accordingly.

3.3 RESPONSIBILITY
Ensure that conditions are suitable for the ceiling installation. Arrange for the programming of the work to suit required practice.

3.4 RECESSED LIGHT FITTINGS - CLEARANCE
Non-residential applications;
The clearance between insulation and recessed downlights
- 100mm gap to [AS/NZS 3000](#), figure 4.9.
- Provide larger clearance where required by the light manufacturer.

Residential applications;
- Ensure new recessed downlights are one of the new classes classified in [AS/NZS 60598.2.2](#); CA 80, CA 135, IC and IC - F
- Classification type CA 80, CA 135, to [AS/NZS 60598.2.2](#); insulation can abut the sides
- Classification type IC and IC - F, to [AS/NZS 60598.2.2](#); insulation can abut and cover over the top of the downlight
- Classification type NON IC to [AS/NZS 60598.2.2](#); insulation cannot abut or cover the downlight. This class of downlights is banned from residential applications.
- Provide larger clearances where required by the light manufacturer.
- In a retrofit situation where recessed downlights are unclassified or unknown, ensure 100mm clearance from the downlight to insulation to [AS/NZS 3000](#), figure 4.9.
Insulation abutting or covering recessed luminaires (downlights) must pass the needle flame test to AS/NZS 60695.11.5.
NZBC C/AS3 - C/AS7 dictate that non-residential installations must have 100mm clearance.

Installation

3.5 SUSPENSION SYSTEM AND GRID
Refer to 5311 SUSPENDED TILE CEILINGS for suspension system and grid.
Delete this clause if the grid exists and this is a retrofit situation.
Amend the suspended ceiling section to suit the suspension system and grid selected.

3.6 INSTALL TILES
Install Mammoth NOVAhush Acoustic Ceiling Tiles in suspended ceiling system to Mammoth™ installation instructions using clips to hold tiles in place if necessary.

3.7 INSTALL CEILING ACOUSTIC BAFFLESTACK
Install Mammoth NOVAhush Acoustic Bafflestack with enough compression to ensure stability between slab, roof, or floor above and to meet the required CAC rating. Refer to SELECTIONS.

Note: Consult with the air conditioning installer to ensure no loss of effective air movement to the active return air system.

3.8 ACCESSIBILITY
Provide access to the ceiling system and the in-ceiling and above-ceiling services so that maintenance and removal of any part can be carried out without damage to the ceiling system or panels.
As full access in all areas is clearly impractical, any special requirements for clear access will need to be defined; either by description here, or on the drawings.

3.9 PENETRATIONS
Accommodate recessed light fittings, air conditioning outlets and other electrical and/or mechanical services that are fixed to or pass through the ceiling tiles. Ensure independent support is provided for these as necessary. Such fittings are not to be supported by the acoustical ceiling panels.

3.10 RETURN AIR PLENUM
Tiles to prevent release of fibres into the ceiling space, air conditioning or ventilation system. Clip tile down to the grid to stop lifting if required.
While this clause is written specifically for projects where the ceiling space is being used as a plenum, it may also be modified to suit particular projects which require some degree of assurance against the release of fibres, and/or the use of panel clips.

3.11 PROTECT EXISTING WORK
Protect adjacent existing work from damage during the installation.

Completion

3.12 REPLACE
Replace damaged tile or elements. Replace any tiles that have been marked and which are no able to be cleaned off.

3.13 CLEAN DOWN
Clean down completed surfaces to remove dirt and marks including any hand marks, to leave completely smooth and clean.

3.14 REMOVE
Remove debris, unused materials and elements from the site.

3.15 LEAVE
Leave work to the standard required by following procedures.

4. **SELECTIONS**
For further details on selections go to www.mammoth.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

Requirements

4.1 SAMPLE SECTION
Location: ~

Performance

4.2 ACOUSTIC REQUIREMENTS
NRC: 0.8
CAC: 18 dB - no Bafflestack
26 dB with 300mm wide Bafflestack
32 dB with 600mm wide Bafflestack

4.3 ENVIRONMENTAL REQUIREMENTS
Range: 0 - 40°C
Relative humidity: 95 % maximum
If this clause is not used and the SITE CONDITIONS clause cannot be complied with, then allowance needs to be made for a tile that will not sag over the construction period.

4.4 REFLECTANCE
Reflectance: 85 %
For (colour): White

Materials

4.5 CEILING TILES
Brand: **Mammoth NOVAhush Acoustic Ceiling Tiles**
Dimensions: 1195 mm x 595mm
Thickness: 18 mm
Edge profile: Square edged
Acoustical rating: NRC 0.8
Group Number: 1S

- 4.6 ACOUSTIC CEILING BAFFLESTACK
Location: Ceiling
Brand/product: **Mammoth NOVAhush Baffle Stack**
Thickness: 100mm per layer
Compression: 30%
Acoustical rating: STC~
Group number: 1S
*Mammoth NOVAhush Baffle Stack: 600mm wide blankets, 11.1m long.
Standard compression rate 30%. Please contact Mammoth for STC ratings.*

- 4.7 GRID SUSPENSION SYSTEM AND PERIMETER TRIM
Refer to 5311 SUSPENDED TILE CEILINGS for suspension system and grid.
Amend the suspended ceiling section to suit the suspension system and grid selected. Not supplied by InsulPro.

Spares

- 4.8 SPARES
Panels: ~
Ask for packs of tiles for routine minor repairs.