

4721M MAMMOTH ACOUSTIC INSULATION

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 InsulPro **Mammoth™ NOVAhush** acoustic insulation installed, laid, hung or fitted as acoustic insulation.

- **Mammoth™ NOVAhush** Acoustic Insulation
- **Mammoth™ NOVAhush** Baffle Stack
- **Mammoth™ NOVAhush** Panel Absorber
- **Mammoth™ NOVAhush** Duct Liner

Modify or extend the above description to suit the project being specified.

1.1 RELATED WORK

Refer to 4711M MAMMOTH THERMAL INSULATION for thermal insulation.

Refer to 4161 UNDERLAYS, FOIL AND DPC for wall underlay, roofing underlays, foils and films.

Refer to 5311N MAMMOTH NOVAHUSH ACOUSTIC CEILING TILES for acoustic ceiling tiles in a suspended ceiling system.

Include cross references to other sections where these contain related work.

Refer to roofing sections for roofing underlays.

Include related sound reduction systems that insulation forms part of.

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:

STC	sound transmission class rating
IIC	impact insulation class
Rw	Weighted Sound Reduction Index is sometimes used, the Rw numbers will be very similar to the equivalent STC numbers.

NRC measures absorption of sound for a material or surface, range between 0 and 1.0, 1.0 being the theoretical most absorbent, useful for reverberation control.

STC is the amount of airborne sound transmission loss through a complete construction like a wall or floor, measured in decibels (dB)

IIC is the amount of impact sound transmission loss through a complete construction like a floor, measured in decibels (dB)

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

[NZBC G6/VM1](#) Airborne and impact sound

[AS/NZS 3000](#) Electrical installations

[AS/NZS 60598.2.2](#) Luminaires- Particular Requirements - Recessed luminaires

[AS/NZS 60695.11.5](#) Fire hazard testing - Test flames - Needle-flame test method - Apparatus, conformity test arrangement and guidance

ISO 140 Acoustics - Measurement of sound insulation in buildings and of building elements - Part 4: Field measurements of airborne sound insulation between room

ISO 9705 Fire Test – Full scale room tests 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.

[NZBC H1/AS1](#) Energy efficiency

[NZS 3604](#) Timber-framed buildings

[NZS 4246](#) Energy efficiency - Installing insulation in residential buildings

BRANZ BU 426 *Achieving acoustic separation*
BRANZ BU 519 *Fasteners selection*
BRANZ BU 461 *Practical sound control*
BRANZ BU 539 *Recessed downlights*

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

Mammoth Brochure: Mammoth™ feel the warmth
 Mammoth™ Airlay Systems performance
Mammoth Product Data Sheet: Mammoth™ NOVAhush Acoustic Insulation
 Mammoth™ NOVAhush Bafflestack
 Mammoth™ NOVAhush Panel Absorber
 Mammoth™ NOVAhush Duct Liner

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

Manufacturer/supplier contact details

Company: **InsulPro Manufacturing Limited**
Web: www.mammoth.co.nz
Email: info@mammoth.co.nz
Telephone: 0800 MAMMOTH (0800 626 668)
Facsimile: 09 273 2309

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 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:
50 years: For materials

- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Modify or expand the clause to suit project or manufacturer/supplier requirements, options include:
- Change the standard form to be used (check with the manufacturer/supplier, use the general section 1237WA WARRANTY AGREEMENT if required)
- Commence the warranty from the date of purchase (check with the manufacturer/supplier)

1.6 WARRANTY - APPROVED INSTALLER/APPLICATOR

Provide an approved installer/applicator warranty
5 years: For execution

- Provide this warranty on the approved installer/applicator standard form
- Commence the warranty from the date of practical completion of the contract works

Refer to the general section 1237 WARRANTIES for additional requirements.

Modify or expand the clause to suit project or installer/applicator requirements, options include:
- Change the standard form to be used (check with the installer/applicator, use the general section 1237WA WARRANTY AGREEMENT if required)
- Commence the warranty from the date of installation (check with the installer/applicator)

Requirements

- 1.7 **QUALIFICATIONS**
Work to be carried out by tradesmen experienced, competent and familiar with the Mammoth™ insulation materials and techniques specified.
- 1.8 **NO SUBSTITUTIONS**
Substitutions are not permitted to any specified Mammoth™ insulation, associated products, components or accessories.
- Performance**
Use site performance testing only where this is specifically required.
- 1.9 **SOUND RATING REQUIREMENTS**
Provide sound rated wall, floor and ceiling systems as detailed in SELECTIONS.
- 1.10 **SOUND CONTROL SITE TEST**
Site test each sound rated element in accordance with [NZBC G6/VM1](#) to ensure that the specified sound transmission loss has been achieved using a nominated acoustic consultant. Carry out sound tests wall by wall to ISO 140, part 4 to certify compliance. Rectify any element that does not meet the specified STC/IIC figure.
Use this clause where as built certification is required for a system that has not been tested elsewhere.
- 1.11 **SURFACE FIRE PROPERTIES**
NOVAhush Panel Absorber, NOVAhush Acoustic Blanket and NOVAhush Bafflestack, tested or assessed to ISO 9705 and have a Group Number 1S to [NZBC C/AS2 - AS7 Table 4.1](#). Refer to Mammoth™ Data Sheets for fire performance results.
*A Group Number of 1S is suitable for use, in air plenums or as HVAC duct insulation, to NZBC C/AS2-AS7, Table 4.1.
Consult with the project Fire Consultant and/or the Services Engineer if necessary.*
- 2. PRODUCTS**
- Materials**
- 2.1 **MAMMOTH NOVAHUSH ACOUSTIC BLANKET**
Mammoth™ NOVAhush Acoustic Blanket, 100% white non woven lofted polyester fibres thermally bonded to produce acoustic blankets. Refer to SELECTIONS for STC and Rw.
Note: When insulation abutting or covering recessed luminaries intended to be in contact with IC, CA, 80, CA 135 luminaries the insulation must withstand a 30s Needle Flame Test to [AS/NZS 60695.11.5](#). Mammoth™ NOVAhush Acoustic blanket meets this requirement.
Mammoth™ NOVAhush Acoustic Blanket used in a wide range of acoustic applications in housing and commercial buildings.
- 2.2 **MAMMOTH NOVAHUSH ACOUSTIC SECTIONS**
Mammoth™ NOVAhush Acoustic Section, 100% woven, thermally bonded polyester fibre material. Supplied as sections. Refer to SELECTIONS for STC and Rw.
Note: When insulation abutting or covering recessed luminaries intended to be in contact with IC, CA, 80, CA 135 luminaries the insulation must withstand a 30s Needle Flame Test to [AS/NZS 60695.11.5](#). Mammoth™ NOVAhush Acoustic sections meet this requirement.
Mammoth™ NOVAhush Acoustic sections used in a wide range of acoustic applications in housing and commercial buildings.
- 2.3 **MAMMOTH NOVAHUSH BAFFLE STACK**
Mammoth™NOVAhush Baffle Stack, 100% white lofted thermally bonded polyester fibre material, supplied as a roll. Refer to SELECTIONS for type and systems STC.
Mammoth NOVAhush Baffle Stack is normally used in ceiling cavities over partition walls to reduce noise transmission over the wall via the ceiling cavity.

- 2.4 **MAMMOTH NOVAHUSH PANEL ABSORBER**
Mammoth™ NOVAhush Panel Absorber, 100% white/black/grey (or white with black face) lofted thermally bonded polyester fibre material, supplied as a sheet. Refer to SELECTIONS for type and NRC.
Mammoth™ Novahush Panel Absorber is a semi rigid panel in black, grey or white polyester available as a plain product or faced with a thermally bonded dense polyester black or white facing for the reduction of reverberated sound within interior spaces. Generally used as surface mounted treatment on walls and ceilings due to excellent absorption properties.
Mammoth™ NOVAhush Panel Absorber is designed for acoustic application and not recommended for visual applications as the surface may show creases, wrinkles or slight colour variations due to the manufacturing process.

Components

- 2.5 **FASTENERS**
Insulation anchors complete with retained washer. 25mm general purpose polyester webbing, 1500kg breaking strain.
- 2.6 **TAPES**
Proprietary plastic tape, stapled across framing to retain insulation in unlined wall and ceiling locations.
- 2.7 **ADHESIVES**
Solvent based glue.
- 2.8 **ADHESIVE TAPE**
Pressure sensitive adhesive tape.
Note: Ensure concrete is dust free before applying tape.

3. EXECUTION

Conditions

- 3.1 **DELIVERY AND STORAGE**
Keep Mammoth™ polyester Insulation dry in transit. Accept materials undamaged and dry and store in a location that protects them from the weather and damage. Reject all damaged materials. Avoid distortion, stretching, puncturing and damage to edges of sheet materials. Do not use damaged or wet insulation material.
- 3.2 **HANDLING**
Wear protective clothing as necessary and when handling, avoid delamination or distortion of the rectangular form. Maintain full thickness unless compression is an installation system requirement.
- 3.3 **INSPECTION**
Before starting installation of acoustic segments, check that the location and framing are free from moisture, that the cavities are not interconnected and that any required mesh, films or papers are in place.

Application

AS/NZS 60695.2.2, NZ only - Amendment A, introduces new classification of recessed luminaires (downlights). The new classification determines what types of recessed luminaires can be used in residential installations and whether they require a clearance to insulation. The luminaires must have their respective class permanently marked on the fitting. Mammoth™ polyester insulation meets the performance standards for insulation, including the needle flame test AS/NZS 60695.11.5.

- 3.4 **CHECK FOILS**
Ensure foils are dry, clean, undamaged and free of debris before being covered.
- 3.5 **CHECK UNDERLAYS**
Ensure these are dry, clean, undamaged and free of debris before being covered.

- 3.6 CHECK VAPOUR BARRIERS
Ensure these form one homogeneous sheet vapour barrier and remain as such throughout the ensuing construction process.
- 3.7 INSTALLATION GENERAL
Lay, install, fit and fix to manufacturer's requirements. Do not cover vents. Allow a clearance around metal flues as recommended by the fireplace manufacturer. Lift up electrical wires, lighting transformers/controllers and lay the insulation underneath.
Flue clearances to manufacturers requirements or NZS 4246, state if known.
CAUTION: Electrical cables and equipment partially or completely surrounded with bulk insulation may overheat and fail. This applies to wiring installed prior to 1989.
- 3.8 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 clearances where required by the light manufacturer/supplier.

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 clearances where required by the light manufacturer.
- In a retrofit situation where recessed downlights are unclassified or unknown, ensure 100mm clearance from the insulation as per [AS/NZS 3000](#), figure 4.9.
Insulation abutting or covering recessed downlights must pass the needle flame test to AS/NZS 60695.11.5.
NZBC C/AS3 - C/AS7 dictates that non-residential installations must have 100mm clearance.
- 3.9 FIT MAMMOTH NOVAHUSH ACOUSTIC BLANKET - WALL CAVITY
After the wall lining is fixed to one side of the wall/partition, staple **Mammoth™ NOVAhush Acoustic Blanket** to the underside of the top plate, dwang (nog) and friction fit the insulation between studs to completely the whole of the cavities. Leave no gaps. Slightly oversize to retain friction fit. Ensure insulation is fitted at its nominal thickness. Do not fold or tuck the insulation. Keep clean and undamaged until closed in. Close in as soon as possible after fixing.
Use Mammoth™ NOVAhush Acoustic Blanket in walls to create 'quiet zones' particularly in areas adjoining bathrooms, kids bedrooms, kitchens and family rooms.
- 3.10 FIT MAMMOTH NOVAHUSH ACOUSTIC SECTIONS - WALL CAVITY
After the wall lining is fixed to one side of the partition, friction fit **Mammoth™ NOVAhush Acoustic Sections** in the wall cavity to completely fill the wall. Slightly oversize to retain friction fit. Ensure insulation is fitted at its nominal thickness. Do not fold or tuck the insulation. Keep clean and undamaged until closed in.
- 3.11 FIT MAMMOTH NOVAHUSH ACOUSTIC BLANKET - MIDFLOORS
Friction fit **Mammoth™ NOVAhush Acoustic Blanket** between the joists to completely fill the space between each. Leave no gaps. Slightly oversize to retain friction fit to each other, to the framing, smaller spaces and around services. Maintain full thickness over the whole of the installation and fix with plastic tape as necessary.
Modify to suit the project.
- 3.12 FIT MAMMOTH NOVAHUSH ACOUSTIC BLANKET - CEILING OVERLAY
Lay **Mammoth™ NOVAhush Acoustic Blanket** over ceiling grid firmly butting edges and joins to ensure no gaps. Slightly oversize to retain friction fit to each other, to the framing, smaller spaces and around services and maintain full thickness of acoustic insulation over whole installation.
Modify to suit the project ceiling construction.

- 3.13 **INSTALL MAMMOTH NOVAHUSH BAFFLE STACK**
Install **Mammoth™ NOVAhush Baffle Stack** with required compression. Refer to SELECTIONS for STC rating. Adequate ventilation is required around electrical fittings due to heat given off.
- 3.14 **FIT MAMMOTH NOVAHUSH PANEL ABSORBER**
Attach **Mammoth™ NOVAhush Panel Absorber** panels to substrate using mechanical fixings or adhesives. Butt edges firmly to the adjoining panel.
Mechanical fixings include insulation anchors. Adhesives are available for some applications and are to be used in accordance with the manufacturer's instructions.

Completion

- 3.15 **CLEAN UP**
Clean up as the work proceeds. Ensure no spare off cuts or any other materials remain behind claddings or linings.
- 3.16 **LEAVE**
Leave work to the standard required by following procedures.
- 3.17 **REMOVE**
Remove debris, unused materials and elements from the site.

4. SELECTIONS

For further details on selections go to www.mammoth.co.nz
Substitutions are not permitted to the following, unless stated otherwise.
If substitutions are permitted modify the statement above, ensure the NO SUBSTITUTIONS clause from GENERAL is treated the same.
Select the options to suit the project and delete options not specified.

Materials

4.1 MAMMOTH NOVAHUSH ACOUSTIC BLANKET

Location: ~
Brand: **Mammoth™ NOVAhush Acoustic Blanket**
Product: **Mammoth™ ~**
Thickness: ~mm
STC: ~

Options:

Product	Thickness (nominal)	Dimensions:
NOVAhush Acoustic Blanket 580	60mm	600mm x 25000mm
NOVAhush Acoustic Blanket 750	60mm	600mm x 11110mm
NOVAhush Acoustic Blanket 900	90mm	600mm x 11110mm
NOVAhush Acoustic Blanket 1000	90mm	600mm x 11110mm

Select accordingly to suit performance requirement.

Typically used for steel framing/ceiling overlay to reduce sound transference.

Product	Stud size	Linings both sides	STC (Rw)
Mammoth™ NOVAhush	92mm	13mm Noise Liner plasterboard	48 (Rw 47)

Typically used for 90mm timber stud and midfloor applications to reduce sound transference. Refer to Mammoth™ for STC rating.

Product	Stud size
Mammoth™ NOVAhush	90mm timber

Higher rates can be achieved with different choices of studs and linings, refer to table below for available options.

Product	Stud	Lining	STC
Mammoth™ NOVAhush	92mm Gib-Rondo Quiet Stud	1 x 13mm Gib Standard	50
Mammoth™ NOVAhush	92mm Gib-Rondo Quiet Stud	1 x 13mm Gib Noiseline	52
Mammoth™ NOVAhush	92mm Gib-Rondo Quiet Stud	2 x 13mm Standard Gib	56
Mammoth™ NOVAhush	92mm Gib-Rondo Quiet Stud	1 x 10mm & 1 x 13mm Gib Noiseline	59

4.2 MAMMOTH NOVAHUSH ACOUSTIC SECTIONS

Location: ~
 Brand/product: **Mammoth™ NOVAhush Acoustic Sections** (friction fit airlay)
 Product: **Mammoth™ 1000**
 Thickness: 90mm
 STC: ~

4.3 MAMMOTH NOVAHUSH BAFFLE STACK

Location: ~
 Brand/product: **Mammoth™ NOVAhush Baffle Stack**
 Thickness: 120mm per panel
 Compression: 30%
 STC: ~

*Mammoth™ Novahush Baffle Stack: 600mm wide blankets, 11.1m long.
 Standard compression rate 30%. Please contact Mammoth for STC ratings.*

4.4 MAMMOTH NOVAHUSH PANEL ABSORBER

Location: ~
 Brand: **Mammoth™ NOVAhush Panel Absorber**
 Product: ~
 Thickness: ~mm
 STC: ~

<i>Panel Absorber</i>	<i>R value</i>	<i>NRC</i>
<i>35-25mm</i>	<i>0.70</i>	<i>0.70</i>
<i>35-50mm</i>	<i>1.40</i>	<i>0.90</i>
<i>35-75mm</i>	<i>1.97</i>	<i>0.95</i>
<i>48-75mm</i>	<i>2.2</i>	<i>1.0</i>
<i>20-100mm</i>	<i>2.27</i>	<i>0.95</i>
<i>40-100mm</i>	<i>2.27</i>	<i>1.05</i>

Mammoth™ Novahush Panel Absorber is a semi rigid board in black or white polyester available as a plain product or faced with a thermally bonded dense polyester black facing for the reduction of reverberated sound within structures. Generally used as surface mounted treatment on walls and ceilings due to excellent absorption properties.