

Technical Data / Producer Statement



PRODUCT DESCRIPTION

Qmulus® is a soft, granulated mineral wool thermal and acoustic insulation, manufactured in selected North American plants by melting and spinning a blend of inert, natural minerals. It has all the advantages of glasswool batting materials without the inherent installation disadvantages, so achieves superior installed performance. It is the only formaldehyde free, non-combustible, clean and durable blown insulation that has been used to insulate New Zealand roof attics since 1995.

Premium quality Qmulus® forms a consistent white layer similar to cotton wool in accessible roof attics. It eliminates energy wasting gaps, joints or vented cavities between the insulation and lining common with blanket or batting. Qmulus® is packed in USA branded Atticguard™, AtticPro™ or ClimatePro™ white plastic bags.

PERFORMANCE

Thermal Effectiveness (NZBC H1, AS/NZS4859.1:2002)

Total (installed) thermal effectiveness of Qmulus® is superior to batting or blanket, as it covers the full ceiling - including over and under timber joists - without joints, gaps, thermal bridging, or vented cavities commonly found between linings and batting or blanket insulation.

Batting or blanket materials need at least two layers to achieve the same installed thermal effectiveness of Qmulus®, that only requires simpler installation of the design thickness and weight.

Compliance with NZ Building Code (NZBC) clause H1.3.1 (a) and H1.3.2 with Qmulus® is achieved via H1/AS1, clauses 2.1, 2.2 and 2.3. The minimum Total R-values of R2.9 / R3.3 (depending on zone) stipulated in Tables 1 and 2 of NZS4218 and NZS 4243, are exceeded respectively by the grey shaded figures in Table 1, below. Alternatively, should Licensed installers complete a design on an individual building in accordance with NZS4218 calculation method, other R values specified in Table 1 will comply.

Acoustic Effectiveness

Qmulus® provides effective sound absorption and reduces transmission of sound through roof attic or floor cavity assemblies. Qmulus® greater than 150mm deep will provide similar sound transmission co-efficient (STC) to any tested assembly with glasswool batting.



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TABLE 1 - THERMAL RESISTANCE QMULUS® - ACCESSIBLE

For a Total R Value of	Min Weight Kg/m ² (1)	Min Thickness (mm) (2)
2.0	0.59	110
2.5	0.75	140
3.0	0.91	170
3.5	1.06	200
4.0	1.22	225
5.0	1.54	285
6.0	1.86	340

- (1) Tile roof, Trusses @ 900c/c, battens @ 400c/c. Thickness & weight can be reduced for an unvented roof.
- (2) Thickness will be less at the edges to avoid touching roofs, with compensating increase as roof pitch permits.



BUILDING CODE COMPLIANCE

This designated "Design", "Construction" or "Construction without Building Consent" statement covers the use of Qmulus® to meet or exceed the Australian and NZ Building Code sections B2, E3, F2, H1 requirements, when used in buildings at any geographical location in accordance with this document.

For attics, BCA's need only inspect that material thickness and weight is in accordance with the thermal effectiveness design specified. The R-values stated in this document are at the lowest realistic blown densities and the material is sold by weight, so any change should be positive. Licensed installers must state the installed thickness and weight installed (bales) on a card affixed near the attic access & provide site records to the BCA upon request.

SAFETY

Fire Properties

Qmulus® is non-combustible, and needs no additional treatment to prevent the spread of flame. It is the ONLY locally available blown insulation to demonstrate compliance with the rigorous requirements of ASTM E136-82 for fire properties.

Health Effects

Qmulus® complies with NZBC section F2.3.1, as non-hazardous material. It's a low bio-persistent, formaldehyde free mineral wool, which is odourless and does not provide food for vermin. The product does not represent a health risk to installers or occupiers of insulated buildings.

Qmulus® is not dusty or a skin irritant, however face masks and overalls should be worn when working with all insulation materials

DURABILITY

Qmulus® will satisfy the requirements of NZBC clause 2.3.1(a) & B2/AS1 Table 1 of 50 years durability in accessible roofs at the correct installed density. Field monitoring indicates long-term settlement is less than 3% in ceilings.

Design Density (Minimum Installed)

Ceilings: 5.5 kg/m³ At the maximum installed density Qmulus® complies with the Gib specified maximum insulation weight of 3kg/m² up to R-value of R6. If R-values exceeding R6 are required, consult Safe-R Insulation (NZ) Ltd.

Corrosiveness

Qmulus® does not promote corrosion on metal building components

Moisture Effects

Qmulus® is unaffected by humidity or water. It can contribute to NZBC section E3.3.1 and complies with E3/AS1, section 1.1. If wetted, thermal resistance will be completely restored, when dried.

Table 2 - Moisture Absorption

After 96 hours at 90% RH	< 2%
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APPLICATIONS & LIMITATIONS

Qmulus® is designed to provide effective thermal and acoustical insulation for dry, horizontal roof attics or floor cavities lined on both sides.

It is not suitable for application on surfaces exceeding a 300 incline, which should have double layer of batting fitted, to provide the same Total R-value.

It is not suitable for skillion roof or wall cavities, where the external cladding may be wet on it's inner face. Use water repellent CavityWall™ insulation (CWI) for these applications.

INSTALLATION

Installation of Qmulus® is much less demanding than batting or blanket installation - no cutting, avoiding edge compression, or need to eliminate the vented cavity between the material and internal lining - so is much more likely to achieve theoretical design R-values in situ- particularly in truss / batten roof construction.

TEST & DOCUMENT REVIEW:

AS/NZS4859.1:2002 R&D Services Inc (NVLAP accredited lab #200265-0)
ASTM C764 & E84 Compliance tests 1900701 Johns Manville / Guardian Technical Centre
JM MSDS #1050 Jun 08, Guardian MSDS Feb 12
R-value & coverage determination of Qmulus 180603 Branz Comn

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