**ecofleece®** Thermal Insulation

**ecofleece®** – Application

**ecofleece®** is a range of quality thermal insulation products designed for ceilings, walls and floors of residential and commercial buildings to assist in meeting the requirements of NZBC H1 energy Efficiency.

**ecofleece®** consists of recycled sheep’s wool which has been thermally bonded with polyester fibre to produce a soft bulk fibre insulation blanket.

**ecofleece®** – Identifying it

Recycled **ecofleece®** consists of coloured wool sourced from New Zealand wool product manufacturers blended with up to 40% polyester fibres.

Individual **ecofleece®** packs are labeled to identify the specific R-Value, coverage per pack in m², material width, unit number or length of material, nominal thickness, minimum weight and date of manufacture. **ecofleece®** complies with the insulation standard AS/NZS 4859.1.

**ecofleece®** – Benefits and features

- **ecofleece®** is produced from natural fibre making it a pleasure to install.
- **ecofleece®** helps prevent moisture build up, reducing the chance of condensation and mould.
- Sheep’s wool is said to ‘breath’ by absorbing and releasing water vapour.
- **ecofleece®** and will work in harmony between the inside and outside environments keeping the building warmer in winter and cooler in summer.
- **ecofleece®** has great acoustic properties and can reduce unwanted noise.
- The sheep’s wool content in **ecofleece®** is 100% recycled wool.
**ecofleece® – Environmental**

*ecofleece®* and its associated packaging is recyclable.

*ecofleece®* also reuses waste wool as an integral part of product manufacture.

Eco Insulation is committed to the development and fostering of sustainable building products and practices and is a member of the New Zealand Green Building Council (NZGBC).

**ecofleece® – Where can it be used?**

*ecofleece®* insulation must not be installed if the moisture content of timber framing exceeds 20%.

In buildings where there is a high humidity, such as swimming pool halls or saunas, *ecofleece®* insulation must be isolated from the moisture by a vapour barrier.

Coverage per pack of *ecofleece®* insulation depends on the product and its thickness. Typical roll lengths and coverage per pack are summarised in Table 1.

**ecofleece® – Thermal performance**

*ecofleece®* insulation is available in the specific R-Values given in Table 1.

To obtain the installed R-Value of *ecofleece®* insulation, refer to NZS 4218 or the BRANZ House Insulation Guide which takes account of the construction being used to give an R-Value for the completed element. Compliance with the requirements of NZBC H1 and E3 can then be determined.

**ecofleece® Thermal Performance and Physical Properties**

<table>
<thead>
<tr>
<th></th>
<th>Insulation R-Value</th>
<th>Width (mm)</th>
<th>Thickness (mm)</th>
<th>Actual m² Per Pack</th>
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</thead>
<tbody>
<tr>
<td><strong>Wall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>✓</td>
<td>580</td>
<td>90</td>
<td>8</td>
</tr>
<tr>
<td>2.4</td>
<td>✓</td>
<td>580</td>
<td>90</td>
<td>6.6</td>
</tr>
<tr>
<td>2.6</td>
<td>✓</td>
<td>580</td>
<td>140</td>
<td>10</td>
</tr>
<tr>
<td><strong>Ceiling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6</td>
<td>✓</td>
<td>580</td>
<td>140</td>
<td>10</td>
</tr>
<tr>
<td>3.2</td>
<td>✓</td>
<td>870</td>
<td>185</td>
<td>6</td>
</tr>
<tr>
<td><strong>Double Layer System</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 x 2.2</td>
<td>4.3</td>
<td>580</td>
<td>180</td>
<td>4</td>
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<tr>
<td>2 x 2.4</td>
<td>4.7</td>
<td>580</td>
<td>180</td>
<td>3.3</td>
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<tr>
<td>2 x 2.6</td>
<td>5.1</td>
<td>580</td>
<td>280</td>
<td>5</td>
</tr>
</tbody>
</table>
**ecofleece® — Acoustic performance**

Fleece® insulation will assist the absorption of sound in the 500 Hz to 8 KHz range. Specific absorption data as part of an acoustically rated construction element or buildup is not currently available.

**ecofleece® — BRANZ Appraisal**

Eco Insulation Systems Ltd are the holders of BRANZ Appraisal Certificate No.464 (2012).

Ecofleece® insulation has therefore demonstrates it meets the relevant requirements of the New Zealand Building Code, namely:

- B2 Durability,
- H1 Energy Efficiency,
- E3 Internal Moisture and
- F2 Hazardous Building Materials.

Contact Eco Insulation for more information.

**ecofleece® — Compliance**

Ecofleece® thermal insulation, when installed in accordance with the manufacturer’s instructions will satisfy the 50 year durability clause NZBC B2.3.1 (a). Ecofleece® meets the relevant clauses of NZBC; E3 Internal Moisture, F2 Hazardous Building Materials and will assist in meeting H1 Energy Efficiency.

**ecofleece® — Fire performance**

When installing ecofleece® insulation® in ceilings where recessed downlights (RDL) are present, the requirements as outlined by NZS4246 should be maintained.

Ecofleece® insulation is not be installed over the top of, or abut to, down lights and their auxiliary equipment such as transformers.

A minimum clearance of 100mm around RDL’s needs to be maintained.

**ecofleece® — Corrosion**

Ecofleece® insulation is non-corrosive to carbon steel when tested to NZS 4222, copper and aluminium.

**ecofleece® — Safety**

Ecofleece® insulation is non-irritant, non-allergenic, non-toxic and odourless and can be installed without the need for protective clothing or equipment, but it is recommended.

**ecofleece® — Moisture**

Ecofleece® insulation will provide maximum insulation when it is dry in service. The insulation value will be lost when it is wet. Ecofleece® which has become wet must be removed and replaced with new insulation.
**ecofleece® – Vermin**

The sheep’s wool in *ecofleece®* insulation is treated with lavanil during the scoring process to resist attack from insects. Lavanil comprises of bifenthrin and other inert ingredients with a pH of 7.0 (pH7.0 being neutral).

**ecofleece® – Testing**

The following independent testing of *ecofleece®* insulation has been undertaken:

- Thermal resistance – BRANZ
- Corrosivity – Materials Performance Technologies
- Insect resistance – Canesis

**ecofleece® – Quality assurance**

Eco Insulation’s manufacturing systems and materials supply have been audited by BRANZ as part of the Appraisal process. Eco Insulation’s manufacturing systems and materials supply are subjected to regular in-house quality control checks.

**ecofleece® – Warranties**

Eco Insulation will check and certify the installation of their products when their own licensed installer is used. Refer to our website for your nearest Eco Insulation Accredited Installer.

**ecofleece® – Installation**

Eco Insulation recommends that all thermal and acoustic insulation be installed in accordance with the manufacturer's instructions (included in each pack) and NZS 4246: Energy Efficiency Installing Insulation in Residential Buildings.

Eco Insulation has a network of trained installers to ensure our products are installed correctly to the above standards. Eco Insulation is a member of IAONZ (Insulation Association of New Zealand).

**ecofleece® – Availability**

Contact Eco Insulation for your local supplier of *ecofleece®*.

**ecofleece® – Finding out more**

To obtain further information on *ecofleece®* insulation, *ecofleece®* Accredited Installers, suppliers, or any other Eco Insulation solutions for New Zealand homes please call TOLL-FREE on 0800 400 ECO or visit;

[www.ecoinsulation.co.nz](http://www.ecoinsulation.co.nz)