



## Recovery Insulation Ltd

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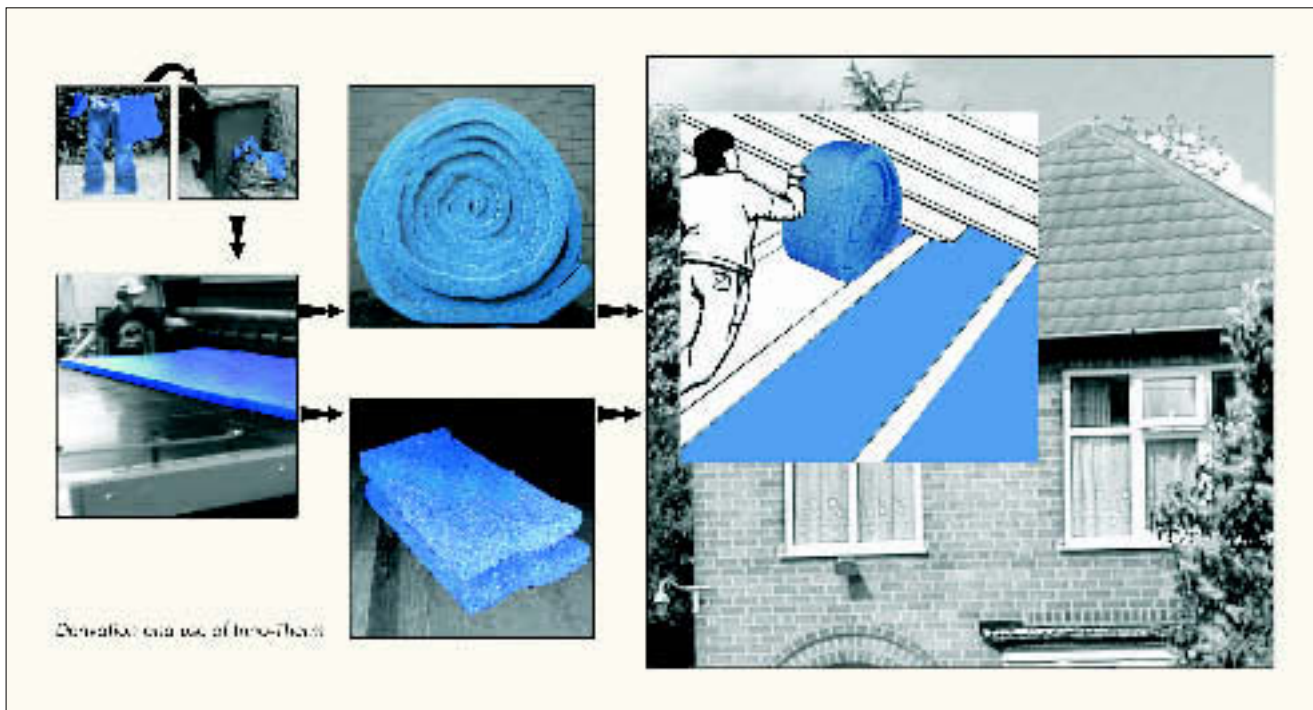
**Agrément  
Certificate  
No 03/4027**

Designated by Government  
to issue  
European Technical  
Approvals

## INNO-THERM

Isolation thermique  
Wärmedämmung


# Product



- THIS CERTIFICATE RELATES TO INNO-THERM, A RECYCLED COTTON-BASED MATERIAL FOR THERMAL INSULATION, SUPPLIED IN ROLLS OR BATTS FOR USE IN ROOFS OF DWELLINGS AND BUILDINGS WITH SIMILAR TEMPERATURE AND HUMIDITY CONDITIONS.
- The product is for use in loft applications between joists in ventilated and unventilated lofts under pitched roofs, designed and constructed in accordance with the relevant clauses of BS 5534-1 : 1997.
- Recovery Insulation Ltd is in association with Schools & Homes Energy Education Project.


## Regulations

### 1 The Building Regulations 2000 (as amended) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of insulation with the Building Regulations. In the opinion of the BBA, Inno-Therm, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement: L1(a)	Dwellings
Requirement: L2(a)	Buildings other than dwellings
Comment:	Roofs incorporating the product can adequately limit heat loss and meet these Requirements. See sections 12.2 and 12.3 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The product is acceptable. See section 14.1 of this Certificate.

### 2 The Building Standards (Scotland) Regulations 1990 (as amended)

 In the opinion of the BBA, Inno-Therm, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Technical Standards as listed below.

Regulation: 10	Fitness of materials and workmanship
Standards: B2.1 and B2.2	Selection and use of materials, fittings, and components, and workmanship
Comment:	The product is acceptable. See section 14.1 of this Certificate.

continued

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continued

Regulation:	18	Resistance to condensation
Standard:	G4.1	Condensation — Interstitial condensation
Standard:	G4.2	Condensation — Surface condensation
Comment:		The product is acceptable. See section 11.1 of this Certificate.
Regulation:	22	Conservation of fuel and power
Standard:	J3.1	Buildings in purpose group 1 — Building fabric
Standard:	J8.1	Buildings in purpose groups 2 to 7
Comment:		Roofs incorporating the product can satisfy or contribute to satisfying the Elemental Approach for limiting heat loss. See sections 12.2 and 12.3 of this Certificate.

### 3 The Building Regulations (Northern Ireland) 2000



In the opinion of the BBA, Inno-Therm, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 14.1 of this Certificate.
Regulation:	F2	Building fabric
Comment:		Roofs incorporating the product can adequately limit heat loss and meet this Regulation. See sections 12.2 and 12.3 of this Certificate.
Regulation:	C5	Condensation
Comment:		The product will not promote condensation. See section 11.1 of this Certificate.

### 4 Construction (Design and Management) Regulations 1994 (as amended) Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See sections: 5 *Description* (5.2) and 6 *Delivery and site handling* (6.3).

## Technical Specification

### 5 Description

5.1 Inno-Therm is 85% cotton-based, recycled material, treated with a fire-retardant and is formed into rolls or batts. The material is hydrophobic in nature.

5.2 The product has the nominal characteristics of:

length	(m)	9.75, 12.19
	(ft)	32, 40
width	(mm)	406, 610
	(in)	16, 24
thickness	(mm)	90, 140
	(in)	3.5, 5.5
nominal weight/ unit area	(kgm <sup>-2</sup> )	1.29, 2.06
	(oz ft <sup>-2</sup> )	4.25, 6.75

### 6 Delivery and site handling

6.1 The rolls or batts are delivered to site in packs wrapped in polythene, each pack includes a label bearing the product name, grade, roll length, thickness and weight/unit area (in imperial and metric measurements) and the BBA identification mark incorporating the number of this Certificate.

6.2 The product should be stored under cover, and out of contact with ground moisture.

6.3 The product must not be exposed to naked flame or other ignition sources.

6.4 Protective clothing or equipment is not necessary when handling this product.

## Design Data

### 7 General

Inno-Therm — Loft Insulation is effective in reducing the U value (thermal transmittance) of ceiling structures with ventilated or unventilated pitched roofs.

### 8 Behaviour in relation to fire

8.1 When tested to BS 5803-4 : 1985, the product adequately limited the extent of combustion and satisfied the criteria for cellulose loft insulation to BS 5803-3 : 1985.

8.2 Where a ceiling incorporates recessed luminaires, care must be taken to ensure that the product is not installed in such a way as to cause them to overheat.

### 9 Proximity of flues and appliances

When installing the product in close proximity to certain flue pipes and/or heat-producing appliances the following provisions to the national Building Regulations are acceptable:

#### *England and Wales*

Approved Document J

#### *Scotland*

Technical Standards, Part F

#### *Northern Ireland*

Technical Booklet L.

### 10 Water vapour penetration

The product is not a moisture vapour control layer and will allow water vapour to migrate through it.

## 11 Condensation



11.1 Insulation material placed at ceiling level will considerably reduce the temperature of an unheated roof structure and, if moist air passes into the roof space, condensation on cold surfaces is likely to be enhanced. Roof structures incorporating the insulation at ceiling level must have provision for minimising the formation of condensation in the roof space.

11.2 Permanent ventilation of the roof structure should be provided by continuous openings or regularly-spaced vents of equivalent area situated along two opposite sides of the roof at eaves level. The size and position of ventilation openings for pitched roofs greater or less than 15°, roofs with spans exceeding 10 metres, and monopitched roofs, should be in accordance with clause 8.4 (in particular 8.4.2) of BS 5250 : 2002. Further information and guidance is given in BRE Report No 262 *Thermal insulation : avoiding risks*.

11.3 Ventilation openings should be arranged to prevent the ingress of rain, snow, birds and small mammals and the risk of subsequent blockage by other building operations.

11.4 Unventilated roofs designed and installed in accordance with and within the limitation imposed by, a relevant BBA Certificate are also acceptable.

## 12 Thermal insulation

12.1 For the purpose of U value calculations to determine if the requirements of the Building (or other statutory) Regulations are met, the thermal conductivity ( $\lambda$  value) of the product may be taken as  $0.040 \text{ Wm}^{-1}\text{K}^{-1}$ .



12.2 The requirement for limiting the heat loss through the building fabric, including thermal bridging, can be satisfied if the U values of the building elements do not exceed the maximum values in the relevant Elemental Methods given in the national Building Regulations:

### England and Wales

Approved Documents L1 and L2, Table 1, in both

### Scotland

Technical Standards J2.3, Table 1, and J8.3, Table

### Northern Ireland

Technical Booklet F, Table 1.2 or 1.4.

12.3 Guidance is also given in these documents on selecting the thickness of insulation required to enable a roof to achieve the desired U value. Alternative approaches are also described which allow for some flexibility in design of U values for individual constructional elements.

## 13 De-rating of electrical cables

As with other insulation products, it may be necessary in some cases to de-rate electrical cables buried in the insulation. In the *IEE Wiring Regulations — Regulations for Electrical Installation Sixteenth Edition 1992* it is suggested that where wiring is completely surrounded by insulation, it may need to be de-rated to as low as half its free air current carrying capacity. Guidance should be sought from a qualified electrician.

## 14 Durability



14.1 The product is stable, rot-proof and durable and will remain effective as an insulant for the life of the building in which it is installed.

14.2 Galvanized and copper-based metals in contact with the product are not subject to corrosion.

## Installation

### 15 General

15.1 The installation of Inno-Therm — Loft Insulation can be carried out as a DIY operation.

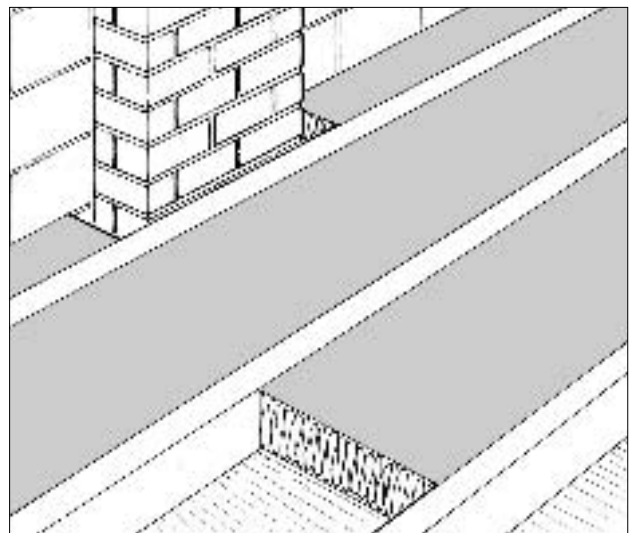
15.2 All removable obstructions should first be cleared from the loft space and any holes in the ceiling, such as around pipes, should be sealed. Water tanks should be covered and any sources of moisture, eg vent pipes for central heating, should be arranged to avoid water vapour entering the loft space.

15.3 To reduce the risk of frost damage due to ceiling insulation, the pipes and tank in the loft space should be lagged before installing the product. The area directly below cold water tanks when resting at joist level must not be insulated to avoid the risk of the stored water freezing in cold weather.

15.4 During installation it is essential that all ventilation points, for example eaves gaps and air bricks at gable ends, are kept clear of insulant so that the air flow is maintained.

15.5 As with other insulating materials, the product should not be installed around metal chimney fabrications or flues passing through the loft space (see Figure 1). Contact between these components and the insulant must be avoided.

Figure 1 Typical installation



15.6 During installation, boards should be placed across the joists to reduce the risk of ceiling damage and care should be exercised when filling up to and above joist level.

15.7 Rolls or batts are laid between joists. The product can be laid on top of existing insulation. Where necessary, the rolls or batts can be cut to size with a serrated knife.

15.8 On completion, if required, a piece of insulation should be cut to size and fixed to the loft trap door.

## Technical Investigations

The following is a summary of the technical investigations carried out on Inno-Therm.

### 16 Tests and investigations

16.1 Tests were undertaken to determine:

resistance to smouldering  
resistance to mould fungus  
retention of additives  
corrosivity of metals in direct contact  
thermal conductivity  
common clothes moth larvae resistance  
condensation risk assessment.

16.2 The manufacturing processes were examined including quality control.

## Bibliography

BS 5250 : 2002 *Code of practice for control of condensation in buildings*  
BS 5534-1 : 1997 *Code of practice for slating and tiling (including shingles) — Design*  
BS 5803-3 : 1985 *Thermal insulation for use in pitched roof spaces in dwellings — Specification for cellulose fibre thermal insulation for application by blowing*  
BS 5803-4 : 1985 *Thermal insulation for use in pitched roof spaces in dwellings — Methods for determining flammability and resistance to smouldering*

## Conditions of Certification

### 17 Conditions

17.1 This Certificate:

- (a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;

(c) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;

(d) is copyright of the BBA.

17.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, shall be construed as references to such publication in the form in which it was current at the date of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;
- (b) continue to be checked by the BBA or its agents; and
- (c) are reviewed by the BBA as and when it considers appropriate.

17.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of any patent or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

17.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, Inno-Therm is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 03/4027 is accordingly awarded to Recovery Insulation Ltd.

On behalf of the British Board of Agrément

Date of issue: 14th May 2003

  
Chief Executive