



Ecocel Technical Data

This document summarises the key constituents and installation data for Ecocel Cellulose Insulation. It should be used in conjunction with the Ecocel Installation Manual as well as the BS5803, part 5 1985 "Specification for installation of man made mineral fibre and cellulose fibre insulation".

Certification

Registered by BSI quality assurance, to produce cellulose fibre thermal insulation.

Also accredited by the Irish Agreement Board (IAB), cert number 07/0285

Approval Satisfies the requirements of the Irish Buildings Regulations (fitness for material)

Product Type

The insulation is made from cellulose fibre derived from waste newsprint that is treated fire retardant and biocide salts.

Installation

It is recommended that the product is installed according the standards laid down in BS5803,-3 Product should not be used where ambient temperatures are consistently above 65°C

- All installing should be in accordance with BS5803.-3 Keep clear of all flues, lights, ducting etc. Avoid water saturation.

Horizontal Loft Spaces

- Average density installed 35kg/m³ / 40kg/m³
- Thermal Conductivity 0.04W/make at settled density

Further instructions are provided as part of Ecocel 'Installer Training Program' and 'Ecocel Installer Manual'.

Product Compliance

Tests are conducted to ensure product compliance with the above characteristics and examples include:

1. Smouldering Resistance Test
2. Flammability Test
3. Vibration settlement test
4. Settlement Tests

These tests are referred to specifically in BS5803-3:1985, Parts 3 and 4.

U-Values

All U-values are calculated to allow for thermal bridging using the proportional area method.

Assumed Roof Construction

10mm tiles on battens, felt, loft space, 100x38mm joists on 600mm centres with ecocel over and between, 10mm plasterboard.



**Table 1: Estimated U-Values for Ecocel Insulation ($\lambda_{90,90} = 0.040$ W/mK)
Installation Into Lofts**

Installed Thickness (mm)	Settled Thickness (mm)	Settled Density (kg/m ³)	Declared Installed U-value After Settlement (W/m ² K)
110	100	35	0.40
163	150	35	0.26
218	200	35	0.20
245	225	35	0.17
272	250	35	0.16

Note: U-values above are based on a roof construction of 10mm tiles on battens, sarking felt, loft space with 100 x 38mm joists at 600mm centres with Ecocel Insulation between/over, and 10mm plasterboard.

**Table 2: Estimated U-Values for Ecocel Insulation ($\lambda_{90,90} = 0.039$ W/mK)
Installation Into Timber Frame Walls¹**

Cavity width (mm)							
100	115	125	150	175	200	250	300
U-Value (W/m ² K)							
0.39	0.34	0.31	0.26	0.22	0.19	0.15	0.13
Timber frame construction details (outside to inside): <ul style="list-style-type: none"> • 102.5mm outer brick leaf • 50mm unventilated cavity • 13mm OSB sheathing • Timber framing (15%)/Insulation (85%) • Vapour control layer • 12.5mm plasterboard • 3mm skim coat finish <p>¹ U-value calculations are dependent on the timber frame construction details. Individual U-value calculations are required in all instances with details of calculations (including details of timber frame construction, cavity width filled and insulation product used) to be recorded on the site survey sheet. In addition, the above values represent the most optimistic values achievable for the wall constructions shown filled with the Ecocel Insulation. The thermal conductivity and consequent U-values quoted will be affected by adhesive use and the installed density of the product.</p>							

The product is marked as follows

- This product conforms to BS5803 -3
- Product conforms to IAB (certification)
- Product brand name 'ecocel'.
- Product description 'cellulose insulation'
- Pack weight 15.0 kg.

Product Characteristics/Specifications

- ecocel is Natural insulation designed to minimize energy loss more effectively than mineral fibres.
- ecocel is blown into walls, roofs and floors it creates a continuous draughtproof layer with excellent thermal and acoustic properties. It helps create a comfortable living environment free from HCFC's, VOC's or other toxic substances
- ecocel is made from discarded newspaper, a major component of the waste stream, easing pressure on landfill sites and putting to good use an other wise wasted resource.
- ecocel uses borate based fire retardants which have less toxicity than common salt, provides a high level of fire resistance and enables ecocel to easily meet all fire protection standards (tested to BS5803-3 and in effect to act as a fire stop.
- ecocel has an impressive thermal conductivity value of 0.04 W/Mk at a density of 35/40 kg/m³, which remains stable over a wide range of temperatures. However the real world performance is further enhanced by its superior resistance to air infiltration resulting in a 25% overall improvement in energy efficiency.
- ecocel components are non toxic, non irritant and environmentally benign. It also requires relatively little energy in production and does not pollute water, air or soil. It can easily be removed and reused, and can ultimately be returned to the earth (i.e. composted).
- ecocel has no deleterious effect on PVC covered electrical wiring and does not contain any constituents that cause corrosion of metallic surfaces.
- ecocel is blown by trained personnel into walls and ceilings using a pressurized installation system which ensures complete filling of cavities to the correct density.

Health and Safety

Ecocel is a non-irritant and non-hazardous product. However due to potential dust in and around the work area - it is recommended that a facemask is worn when working in confined areas.