



AkzoNobel



**energy
saving
trust**

**Would you like a warmer home?
Are you interested in testing out a new and innovative product?
Find out more about our latest case study**

What is the case study about?

AkzoNobel are working with the Energy Saving Trust (EST) to carry out a case study of their new insulating product Thermacoat+ to gain evidence on how the product works in situ. We're looking for people to take part in this case study, starting January 2018.

What is Thermacoat+?

Thermacoat+ is a Dulux Trade Plus product which is applied to the inside of any external walls in your home and designed to cut heat losses and increase energy-efficiency. The three part coating system improves the thermal efficiency of walls by reducing heat loss; it can reduce heat loss through a typical solid wall by up to 17 per cent.

What are the benefits for taking part?

- Thermacoat+ installed in your home for free; the product will retail at around £2500 for whole house installation
- Improved thermal comfort in your home
- Reduce warm up time and heat rooms faster
- Professional redecoration of the insulated walls

*For further details on the Thermacoat+ product, please see the product guide below.*¹

How is Thermacoat+ installed?

Thermacoat+ will be installed by a professional installer over a 3 day period, as detailed on page 5 of the product guide below. During this time you will not have access to the rooms that are being treated due to risk of irritation from fibreglass; this will likely require you to vacate the home during installation². The product will be installed on all external walls in your home, excluding any walls in the kitchen or bathroom (or any inaccessible walls).

Once the insulating paint has been installed, the insulated walls will be professionally redecorated.

¹ Please note, the product guide below contains key information about the Thermacoat+ product, however the savings figures and claims within it are not verified by the Energy Saving Trust. This is a document produced by AkzoNobel.

² If this is not possible, the installation may be done in two halves over 6 days; this means you will need to vacate half of your home for 3 days whilst it is insulated, then swap over to vacate the other half of your home for 3 days whilst the second half is insulated.

Am I eligible to take part? We are looking for...

- People located long the M4 corridor, from Slough through to Bristol
- Homes with solid wall construction
- People with good internet connection for data collection purposes
- Terrace houses, semi-detached houses and detached homes, but not flats.
- Walls with good quality plaster; walls with active cracks will not be appropriate
- Walls which are decorated with paint, not wallpaper
- Rooms without issues of mould or damp (this does not include bathrooms and kitchens as we will not be insulating these rooms)

What will be required of me?

- To complete a pre and post installation survey on how you find Thermacoat+ in your home
- To have electricity, gas and temperature monitors installed in your home for the duration of the case study (until May 2018). This will allow us to evaluate the impact of the installation on your energy consumption
- To allow a specified installer to access your home to install Thermacoat+
- Would be willing to leave the home for 2 nights during installation
- To allow AkzoNobel to take photos after the installation of the product and be happy for the case study to be used in future marketing materials

What are the timescales?

- **January 2018** – You will be required to sign a home owner agreement with the Energy Saving Trust to say you are willing to participate in the case study. We will then send out the monitoring equipment which is easily self-installed; the gas and electricity data is sent to EST directly via the internet, the temperature sensors will be collected at the end of the project to download the readings manually.
- **February 2018** – We will also ask you to complete a pre-installation survey, and then the Thermacoat+ is installed in your home.
- **March 2018** – Post-installation monitoring data is still being collected and we will ask you to complete a post installation survey.
- **April 2018** – We will collect our final readings and photos for the case study.
- **May 2018** – Case study is complete.

How do I get involved?

If you would like to take part in the Dulux Trade Plus Thermacoat+ case study please complete this short online survey as soon as possible, but no later than **Monday 8 January 2018**. We will be in touch shortly after if you have been chosen to take part.

**Complete our
recruitment survey**



NEW PLUS RANGE ENERGY SAVING SOLUTION



Helping to cut heat loss through walls
and improve comfort levels for occupants.

INNOVATIVE COATINGS WITH REVOLUTIONARY BENEFITS

Introducing new **Dulux Trade Plus**, innovative coatings with revolutionary benefits to enhance buildings; helping you to create spaces that are not only beautiful but also more comfortable and energy efficient.

The new **Dulux Trade Plus** range was born out of listening to the needs and future ambitions of our customers, and builds on our already strong commitment to sustainability and Planet Possible, the global **AkzoNobel** initiative to create a brighter future by delivering more value from fewer resources.

The new innovative products in the **Dulux Trade Plus** range have been specially developed to help to improve energy efficiency in buildings—cutting heat loss through walls, delivering energy savings, and improving comfort levels.



Susan Kendall
Sustainability Director, AkzoNobel
Decorative Paints UK & Ireland



“Increasingly our customers want to create spaces that are energy-efficient places where people will thrive. This has led us to create **Dulux Trade Plus**, an innovative range of coatings that are easy to apply and offer independently-tested performance.”

LACK OF SOLID WALL INSULATION

In the UK, homeowners and businesses are losing millions of pounds every year due to heat loss through uninsulated solid wall construction.

AGEING BUILDINGS

The UK has one of the oldest, most inefficient built environments in Europe. Nearly a third of buildings are of solid wall construction, the majority of which are typically older properties built before 1919.

RISING COSTS

Increasing energy prices are placing a greater burden on everyone—including private, residential and commercial customers.

WASTED ENERGY

The majority of energy consumption comes from heating and cooling: Approximately two thirds in the average home and half in the average commercial building.

INSIDE AND OUT

Already poor insulation in buildings of solid construction can be compounded by moisture trapped in brick work, which reduces the thermal efficiency of the wall causing more heat to escape. Potentially an issue for some properties in a high wind driven rain index zone.

Heat loss through solid walls wastes up to 45% of heating energy—wasting money for their occupants or owners, as well as reducing comfort.

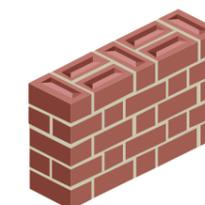


WHY IS SOLID WALL CONSTRUCTION SO INEFFICIENT?

Modern walls have insulation cavities, often filled with insulating material, that captures and retains heat. Solid walls have no insulation.

MOISTURE ONLY MAKES IT WORSE.

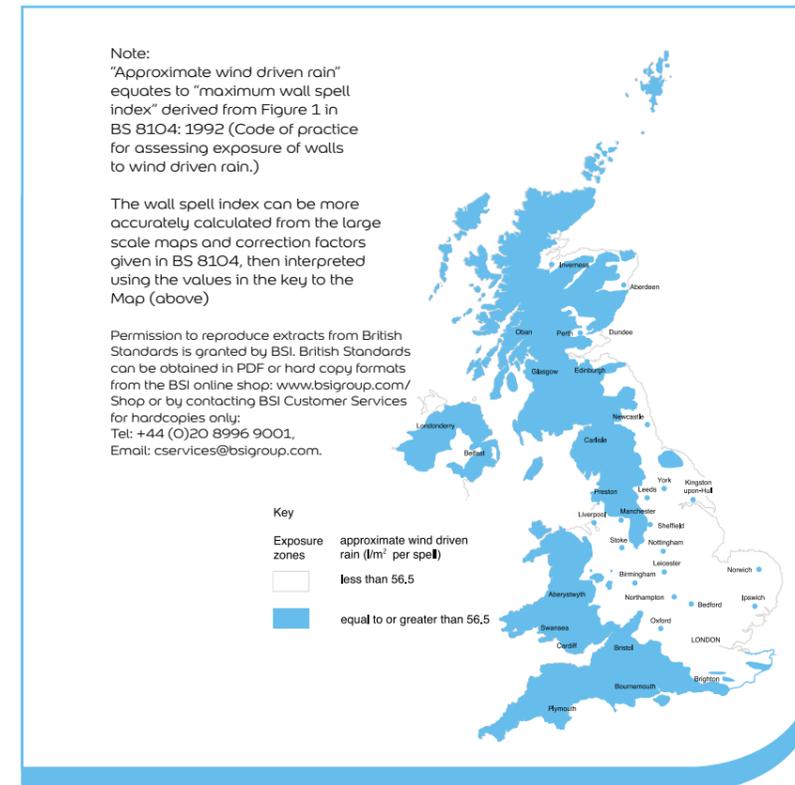
78% of exteriors are undecorated—walls with a higher moisture content release significantly more heat than those with a lower moisture content.



Solid Wall
In most pre 1919 homes a Thick-thin pattern was used



Cavity Wall
In more modern houses an Even brick pattern is used



INTRODUCING DULUX TRADE PLUS THERMACOAT+

Create warmer, more comfortable spaces with a **permanent system** that improves thermal performance, cuts heat loss and reduces warm-up times.

Dulux Trade Plus ThermaCoat+ is a revolutionary new 3-part coating system proven to cut heat loss and increase energy-efficiency.

The innovative system enables building owners to enhance spaces, improving occupants comfort, whilst saving money on heating and supporting sustainability targets.



PRODUCT SYSTEM FEATURES

- Reduces heat loss through walls by up to 18%*
- Improves room warm up times
- Independently tested thermal conductivity (λ) of 0.05 W/mK
- Minimal disruption to wall fittings
- Leaves a flat smooth finish ready for painting
- Certified by the BBA, and tested by the Building Research Establishment (BRE)

*BRE laboratory tests in a matched pair of test cells with wall U-values equivalent to a standard solid brick wall (220 mm) showed that a 5.5 mm coating of **Dulux Trade Plus ThermaCoat+** would reduce the heat loss through the walls by approximately 18%.

DULUX TRADE PLUS THERMACOAT+ 3-PART SYSTEM

PART 1

Dulux Trade Plus ThermaCoat+
Innovative basecoat with insulation properties

- Thickness: 5mm (when levelled)
- Spreading Rate: 5L/m²
- Drying Times: Overnight (Minimum 12 hours)
- Application: Internal side of exterior facing walls*
- Tools: Dulux Trade Plus ThermaCoat+ Comb
Dulux Trade Plus Loading Tool



PART 2

Dulux Trade Plus Levelling Fleece
Strong high quality fiberglass fleece, used to level and smooth **Dulux Trade Plus ThermaCoat+** (part 1)

- Length: 25m roll, 1m wide.
- Tool: Dulux Trade Plus Leveling Tool



PART 3

Dulux Trade Plus Smooth & Protect+
Protective mid coat for use over **Dulux Trade Plus ThermaCoat+** & **Dulux Trade Plus Levelling Fleece**

- Thickness: 1mm (wet)
- Spreading Rate: 1L/m²
- Drying time: Minimum 12 hours, before lightly sanding & painting
- Tool: Plastering spatula or flat trowel



Please note the system can take up to 7 days to fully cure.

*Not suitable for use in areas where condensation is a problem e.g. kitchens & bathrooms. Please see technical data sheet for full information.

INSULATION PERFORMANCE

Proven to reduce heat loss and deliver energy savings.

Dulux Trade Plus ThermaCoat+ has a proven thermal conductivity (λ) value of 0.05 W/mK, as tested by the BBA. From this the U-Value, measuring insulation performance, can be calculated.

EXAMPLE; TYPICAL SOLID WALL CONSTRUCTION U-VALUES

Without **Dulux Trade Plus ThermaCoat+** — 2.1 W/m²K*

With **Dulux Trade Plus ThermaCoat+** — 1.74 W/m²K*

Dulux Trade Plus ThermaCoat+ delivers a 17.4% improvement

*BRE SAP Modelling; thermal modelling software TRISCOV12 was used, to model the elemental U-value of the typical external brickwork wall 'pre' and 'post' application. See report summary for more detail.

SAP Modelling; Report Number: P106969-1000 Issue: 2



POTENTIAL SAVINGS

BRE SAP modelling was undertaken on three BRE Standard House Types (Period Detached, Period End Terrace, and Period Mid-terrace), to explore the potential improvements in running costs and energy use. Potential savings can be seen in the adjacent table.

The modelling also showed a potential 6.6% increase in the minimum internal surface temperature with **Dulux Trade Plus ThermaCoat+** applied, which would help reduce the internal surface condensation risk.

POTENTIAL ANNUAL SAVINGS

House Type	Potential Annual Savings
Detached	£124
Mid Terrace	£63
End Terrace	£92

DULUX TRADE PLUS THERMACOAT+ SYSTEM APPLICATION

STEP 1

Apply Dulux Trade Plus ThermaCoat+

Working in 1.5m sections apply an approx. 1cm thick layer of **Dulux Trade Plus ThermaCoat+** using the **Dulux Trade Plus ThermaCoat+** Comb from the bottom of the wall to the top.



STEP 2

Apply Dulux Trade Plus Levelling Fleece

Place the **Dulux Trade Plus Levelling Fleece** over the area and gently push onto the surface until it adheres. Use the **Dulux Trade Plus Levelling Tool** to gently distribute the coating, spreading an even layer across the substrate. **Leave to dry overnight (min. 12 hrs).**



STEP 3

Apply Dulux Trade Plus Smooth & Protect+

Apply a thin (1mm) layer of **Dulux Trade Plus Smooth & Protect+** using a plastic spatula to provide a tough, durable finish.



FINISHING

Finishing/Decoration

Once dry, lightly sand with very fine (240+ Grit) sandpaper and paint with any suitable water-based interior **Dulux Trade** emulsion.



Please ask for details on **Dulux Academy Training**.

Please note the system can take up to 7 days to fully cure and gain full strength.

BRE DULUX TRADE PLUS THERMACOAT+ SYSTEM

TEST 1 MOCK UP ROOMS

Full scale laboratory test in a matched pair of realistic mock-up rooms with walls equivalent to a standard solid brick wall (210mm), with a U-Value of around 2.1W/m²K.

Testing showed a calculated reduction in heat loss of 18% at 5.5mm **Dulux Trade Plus ThermoCoat+** system coating thickness.



Application of **Dulux Trade Plus ThermoCoat+**



Thermal Image of Outside Mock Up Room Wall

KEY RESULTS:

Testing showed a calculated reduction in heat loss of **18%** at 5.5mm **Dulux Trade Plus ThermoCoat+** system coating thickness

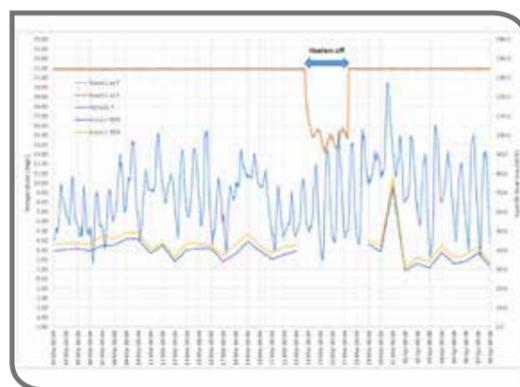
Test 1 - Chambers (Dulux Trade Plus ThermoCoat+); Report Number: P103840-1001 Issue: 1

TEST 2 BRE TEST HOUSE

Full-scale test of **Dulux Trade Plus ThermoCoat+** system in a matched pair of rooms in a proper BRE test house building with standard brick cavity walls (estimated U-Value 1.44 W/m²K). The tests were designed to provide side by side real comparative testing of a room with uncoated walls against a room with the two exterior walls coated with **ThermoCoat+** system.



External view of building



Test 2 - Mean room and outside air temperatures and mean daily W/K heat loss

KEY RESULTS:

14.3% estimated improvement of U-Value by adding **Dulux Trade Plus ThermoCoat+** system the walls

23% improvement in heat up time

7.15% overall reduction in total room heat loss

Test 2 - House (Dulux Trade Plus ThermoCoat+); Report Number: P106932-1001 Issue: 1

BBA DULUX TRADE PLUS THERMACOAT+ SYSTEM

The **Dulux Trade Plus ThermoCoat+** System has been certified by the BBA, (certificate 17/5445).

Certification Includes:

- Factors relating to compliance with Building Regulations where applicable
- Factors relating to additional non-regulatory information where applicable
- Independently verified technical specification
- Assessment criteria and technical investigations
- Design considerations
- Installation guidance
- Regular surveillance of production
- Formal three-yearly review.

Key Factors Assessed;

- Thermal Performance
- Condensation
- Behaviour in relation to fire
- Durability



Please see BBA certificate for further details.



CE MARK

Dulux Trade Plus ThermoCoat+ and **Dulux Trade Plus Smooth & Protect+** have been CE Marked under Construction Products Regulation (CPR) (305/2011).

They have been tested and CE Marked in accordance with EN 15824 Specifications for external renders and internal plasters based on organic binders.

Reaction to Fire

Reaction to fire testing was carried out by Warrington Fire Gent:

- **Dulux Trade Plus ThermoCoat+** complete system as specified (parts 1, 2 & 3 only): Class C-s1, dO (EN 13501-1:2007+A1:2009)
- **Dulux Trade Plus ThermoCoat+** (part 1): Class E (EN 13501-1:2007+A1:2009)
- **Dulux Trade Plus Smooth & Protect+** (part 3): Class A2-s1, dO (EN 13501-1:2007+A1:2009)

Adhesion

Dulux Trade Plus ThermoCoat+ & **Dulux Trade Plus Smooth & Protect+** both achieved adhesion test results ≥ 0.3 MPa

Please note **Dulux Trade Plus ThermoCoat+** system is not a fire upgrade system. The **Dulux Trade Plus ThermoCoat+** System should always be applied as a full system as specified (parts 1, 2 & 3)

