



Structerm
Greener | Warmer | Stronger



External Wall Insulation

Refurbishment Solutions



Reduces Carbon Emissions and Transforms Homes



External Wall Insulation: The Sustainable Solution

There are millions of solid wall and non-traditional properties, in the UK which suffer from poor thermal performance.

The most significant heat loss from these properties is through the external walls. This is estimated to be around 35% of the total heat loss, resulting in high fuel consumption and therefore high CO₂ emissions. The Government's target is to make an 80% reduction in these emissions by 2050. External Wall Insulation (EWI) systems will play an important role in achieving this.

EWI involves externally cladding a building with insulation boards, before applying a layer of basecoat render and then a final decorative finish. The overall result is not only a highly insulated, energy efficient home but one that is visually transformed on the outside.

Funding for EWI is available through the Governments Energy Company Obligation (ECO) which operates alongside the Green Deal finance scheme. The ECO is focused on low income vulnerable households, who tend to under-heat their homes and those properties deemed "Hard To Treat" such as those with solid walls.

Benefits of EWI:

- Sustainable and cost-effective alternative to demolition
- Makes a real impact on the reduction of CO₂ emissions
- Improved thermal performance to meet or exceed Part L Building Regulations
- Lower fuel bills for residents due to homes requiring less heat to maintain a comfortable temperature. Can also help reduce fuel poverty.
- Eliminates cold bridging and interstitial condensation
- Provides a 'breathable' wall to overcome water vapour permeability problems
- Improved airtightness helping to increase thermal performance and preserving the building fabric
- Improves the acoustic performance of the external wall
- Offers a wide range of textures, colours and finished effects
- All works carried out externally therefore residents remain in their homes
- Backed by full BBA Certification confirming that the product has a minimum design life of 30 years



Housing Construction Types

Homes built between the 1930's and 1970's were constructed for speed, with very little regard for thermal efficiency and airtightness.

These buildings can be grouped into the following categories; Solid Wall, Traditional, Non-Traditional and Prefabricated Reinforced Concrete (PRC). All of these now fail to meet current Building Regulations for thermal efficiency and suffer from damp, condensation and deterioration of the façades.

Solid Wall

Over 30% (7 million) of the UK housing stock is of Solid Wall construction, commonly used in terraced brick houses and flats, which means they are unsuitable for cavity wall insulation. Classed as 'hard-to-treat', heat loss through untreated walls in these types of property can be up to 45%. The photographs below shows a typical solid wall terrace house before and after refurbishment using Structherm EWI.

Photograph of rear elevation before refurbishment shows the construction to be solid wall brickwork renowned for poor thermal performance due to lack of cavity.



Photograph of rear elevation and gable after refurbishment using Structherm External Wall Insulation and through coloured render.



Traditional

These properties were generally constructed with a cavity which is too narrow to be insulated. Heat loss through walls in these types of property can be around 35%.

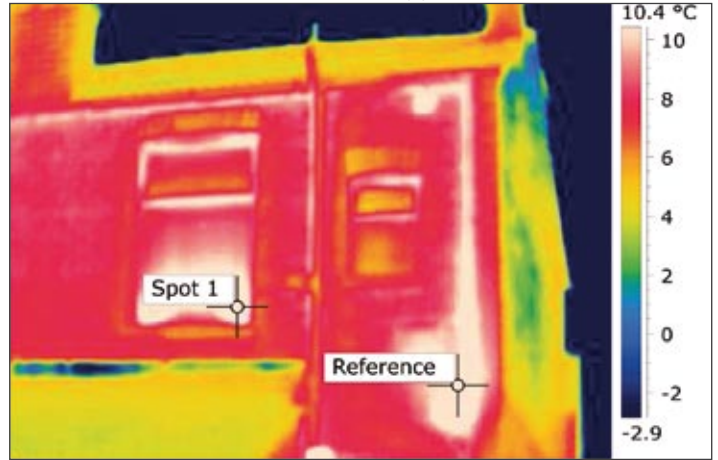
Non-Traditional & Prefabricated Reinforced Concrete

Approximately 3 million properties in the UK were built using non-traditional methods. Subject to engineer approval Structherm External Wall Insulation Systems can provide a solution. For example Wimpey No-Fines properties constructed from concrete have poor thermal performance and all the problems associated with damp and condensation but generally have no significant structural defects.

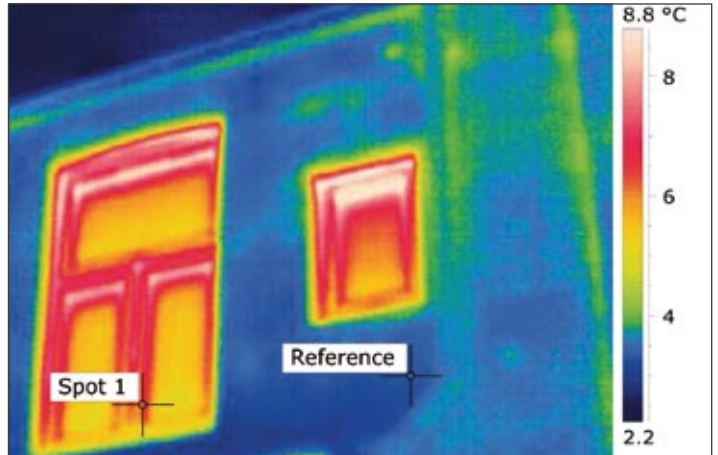
For those non-traditional and PRC properties with serious design and construction defects then Structherm can offer a unique Structural External Wall Insulation system which is the only structural EWI system to carry a BBA Certificate.

Visit www.structherm.co.uk to download the Structural External Wall Insulation brochure or request a hard copy by calling or emailing us.

Thermal image of rear elevation and gable before refurbishment shows excessive heat loss through walls, windows and where the waste pipes exit the house.



Thermal image of rear elevation and gable after refurbishment shows dramatic reduction of heat loss through walls of 5°C and windows of 7°C.



School & Commercial Construction Types

System Built Schools

During the 1970's thousands of schools were built using systems such as CLASP, Hills and SCOLA. Many of these systems are now failing and in urgent need of thermal and aesthetic upgrade. Structherm's External Wall Insulation Systems are ideal for these projects.

Commercial Buildings & Office Blocks

The UK has thousands of commercial buildings and office blocks that generally have poor thermal performance and cost vast amounts of money to heat.

Structherm's External Wall Insulation Systems can dramatically improve the building's thermal performance reducing fuel bills and CO₂ emissions.



System Built School requiring External Wall Insulation

U-Values & Insulation Types

Thermal performance is measured in U-values - the rate of heat loss through a structure.

Structherm's range of high performing insulants ensure that our systems exceed the current Building Regulations.

The lower the U-value, the more thermally efficient the wall construction is. The table below indicates the range of thermal improvements achieved with different types of insulation when applied to a selection of typical construction methods.

Comparison U-values

		Solid Wall 2.08 W/m ² K	Traditional 1.51 W/m ² K	No Fines 1.60 W/m ² K
Insulation	U-value to Achieve or Better	Insulation Thickness (mm)	Insulation Thickness (mm)	Insulation Thickness (mm)
EPS	0.30 W/m ² K	110	110	110
	0.25 W/m ² K	140	130	130
	0.20 W/m ² K	170	170	170
	0.15 W/m ² K	230	230	230
Mineral Fibre	0.30 W/m ² K	110	100	120
	0.25 W/m ² K	130	120	150
	0.20 W/m ² K	160	160	190
	0.15 W/m ² K	220	220	220
Enhanced EPS	0.30 W/m ² K	90	80	90
	0.25 W/m ² K	110	100	100
	0.20 W/m ² K	140	130	130
	0.15 W/m ² K	190	180	180
PIR	0.30 W/m ² K	80	70	80
	0.25 W/m ² K	90	90	90
	0.20 W/m ² K	110	110	110
	0.15 W/m ² K	150	150	150
Phenolic	0.30 W/m ² K	60	60	60
	0.25 W/m ² K	70	70	70
	0.20 W/m ² K	90	90	90
	0.15 W/m ² K	120	120	120

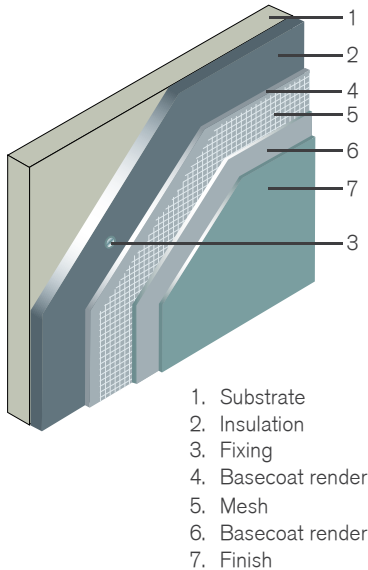
External Wall Insulation Systems

Structherm's quick and easy-to-use systems are based on a sequence of layers built up to form a thermally insulated, weatherproof and attractive envelope, suitable for a wide variety of building types. The layers consist of a CFC and HCFC free insulant overlaid in turn with reinforcing mesh, basecoat render and a decorative finish. The system has various options offering clients a choice of insulant and surface finish to suit individual requirements.

Thin Coat System NSC2 - Low Rise Applications

Diagram 1

Thin Coat System - NSC2 - sequence of layers for low rise applications



Applications:

- Refurbishment of low rise social housing
- Refurbishment of private housing
- New build projects
- Buildings up to 18m high

Insulants:

- Expanded Polystyrene (EPS)
- Enhanced EPS
- Mineral Wool
- Polyisocyanurate (PIR)
- Phenolic

Finishes:

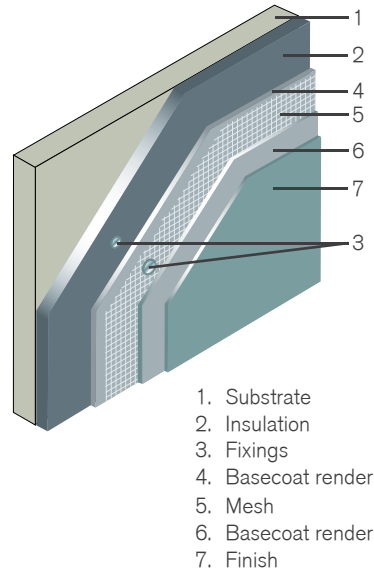
- Acrylic or Silicone
- Dash Aggregate
- Brick Effect Render
- Acrylic Brick Slips



Thin Coat System NSC2 - High Rise Applications

Diagram 2

Thin Coat System - NSC2 - sequence of layers for high rise applications



Applications:

- Refurbishment of high rise social housing
- Refurbishment of high rise commercial buildings
- New build projects
- Buildings over 18m high

Insulants:

- Mineral Wool
- Phenolic

Finishes:

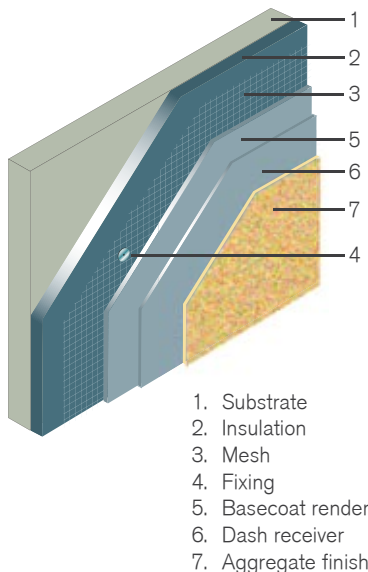
- Silicone



Heavy Duty System NSC3 - Low Rise Applications

Diagram 3

Heavy Duty System - NSC3 - sequence of layers for low rise applications



Applications:

- Refurbishment of low rise social and private housing in exposed & coastal areas
- Commercial premises under 18m high
- Educational buildings
- Refurbishment of low rise housing where a heavy duty system is required
- Buildings up to 18m high

Insulants:

- Expanded Polystyrene
- Mineral Wool

Finishes:

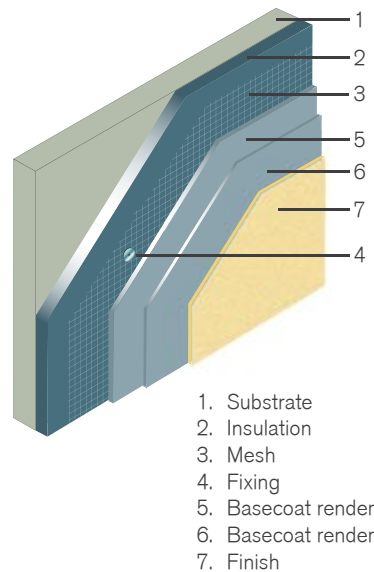
- Dash Aggregate



Heavy Duty System NSC5 - Low Rise Applications

Diagram 4

Heavy Duty System - NSC5 - sequence of layers for low rise applications



Applications:

- Refurbishment of low rise social and private housing in exposed & coastal areas
- Commercial premises under 18m high
- Educational buildings
- Refurbishment of low rise housing where a heavy duty system is required
- Buildings up to 18m high

Insulants:

- Expanded Polystyrene
- Mineral Wool

Finishes:

- Acrylic



Improved Thermal Performance and Aesthetics

After



Before



After



Before

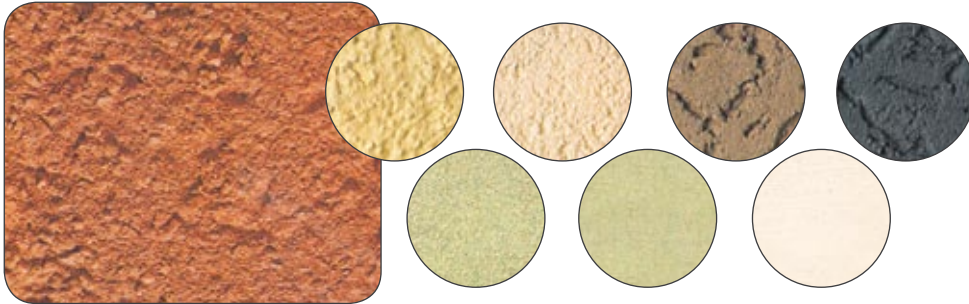


After

Contemporary Finishes

Structherm External Wall Insulation Systems can be finished in a wide range of contemporary textured or smooth finishes and in either bright, bold colours or neutral shades to allow the designer freedom to create functional, yet attractive, façades.

Acrylic



A range of high performance, textured finishes with excellent durability, water vapour permeability and water repellence. Available in a wide range of colours which also offer excellent protection against UV and are crack resistant.

Silicone



A range of high performance, smooth and textured finishes with outstanding repellency towards water and dirt. The silicone resin-based finishes retain their colour and cleanliness for longer providing low maintenance protection. Available in a virtually unlimited range of colours.

Colours



Structherm's standard colours consist of a base range which are available in the Acrylic or Silicone finishes above, giving the designer an excellent selection of colours and textures to choose from.

For those more demanding projects requiring complete flexibility in colour choice, we have a state of the art, in-house, tinting system which allows an infinite number of colours to be supplied. The technology used in the machine guarantees consistency of any hue produced.

We can also colour match to samples of material, including bricks.

Dash Receiver & Aggregate

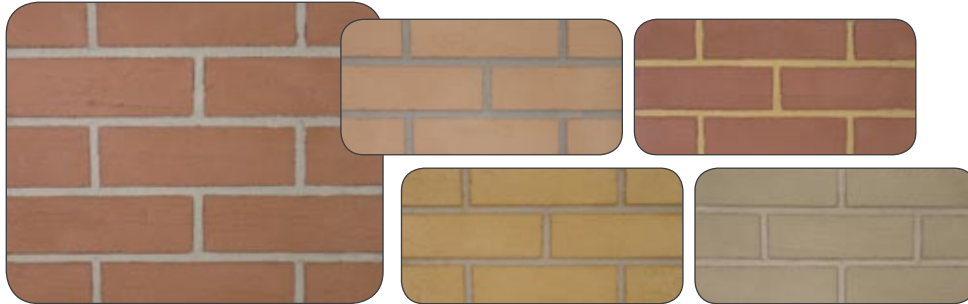


Dash finishes provide a functional and cost effective finish applied in two stages. Firstly a coating of dash receiver is applied, choose from 20 standard colours in our range. Whilst still stiff, but not set, a dash aggregate is thrown onto the surface. Choose from 24 of the most popular natural mineral aggregates available.

Traditional Finishes

Structherm External Wall Insulation Systems can also be finished in a wide range of traditional finishes, including brick effects, ashlar stone effect, dash aggregate and acrylic brick slips. A large range of render colours, dash receivers, dash aggregates and acrylic brick slips are available.

Macerend - Brick Effect



Macerend is a two coat specialist render system, providing the effect of real brickwork by using differently coloured, render mortar and face layers. Available in 44 standard colours, for use as the mortar or face layer and in any combination desired. The system can be used for full area coverage or for brick features such as soldier courses.

Multirend - Multistock Brick Effect



Multirend is a multistock brick effect render installed in the same way as Macerend, but with the addition of a dye applied to the face layer to achieve the multistock brick effect. Available in 44 standard colours for use as the mortar or face layer and choice of four standard multistock dyes.

Stone & Ashlar Effect



Stone effect finishes can be achieved by installing two coats of render using differently coloured render mortar and face layers. The face layer is scribed to reveal the mortar layer before fully set. Available in 44 standard colours which can be used for either layer and in any combination desired.

Acrylic Brick Slips

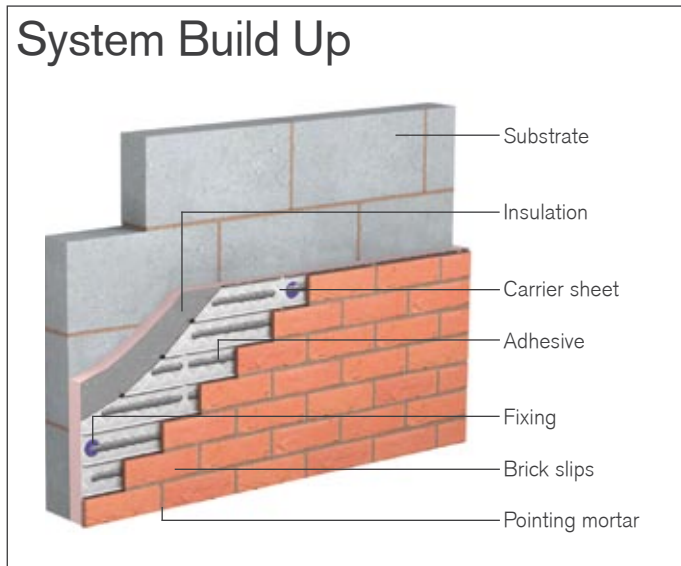


Acrylic brick slips are faster and easier to install than traditional masonry. They are lightweight and flexible which enables overcladding of entire buildings. Each design contains natural shades and textures to achieve a traditional brick appearance. Available in 24 standard colours and with a choice of 5 standard adhesive / mortar colours.

For more details regarding our range of finishes, including application procedures and colour options please see our Renders & Finishes Datasheets or contact Structherm's technical department.

Wonderwall

An external wall insulation system with a real brick slip finish, combining the advantages of modern construction techniques with the appeal of traditional brickwork.



For more details about Wonderwall and the installation procedure please refer to our Wonderwall datasheet.

Wonderwall is used in the social housing and school refurbishment sectors, where façades are often in need of aesthetic and thermal upgrade or on ground floors of high rise blocks where a robust system is needed.

Benefits:

- Fast and easy installation
- High thermal efficiency
- Maximum level of impact resistance
- Traditional brick finish
- On-site flexibility enables shaping to suit openings and other details
- Wide choice of brick slip colours and textures including extruded and stock facing slips
- Wide choice of pointing mortar colours



Wonderwall Provides a Durable and Decorative Finish

Design & Technical Service

Structherm has many years of experience in providing a comprehensive, integrated service. From initial concept right through to completion, our aim is to develop a full understanding of your business and operational objectives in order to ensure the smooth and timely delivery of your project.

We offer all our clients the best in design services to cover all aspects of their external refurbishment projects. Design work is carried out by our in-house qualified engineers and CAD Designers and our free feasibility service allows us to present a totally integrated holistic solution.

At every stage of your development, we provide everything necessary to enable us to arrive at the best design solution for your project.



Our service includes:

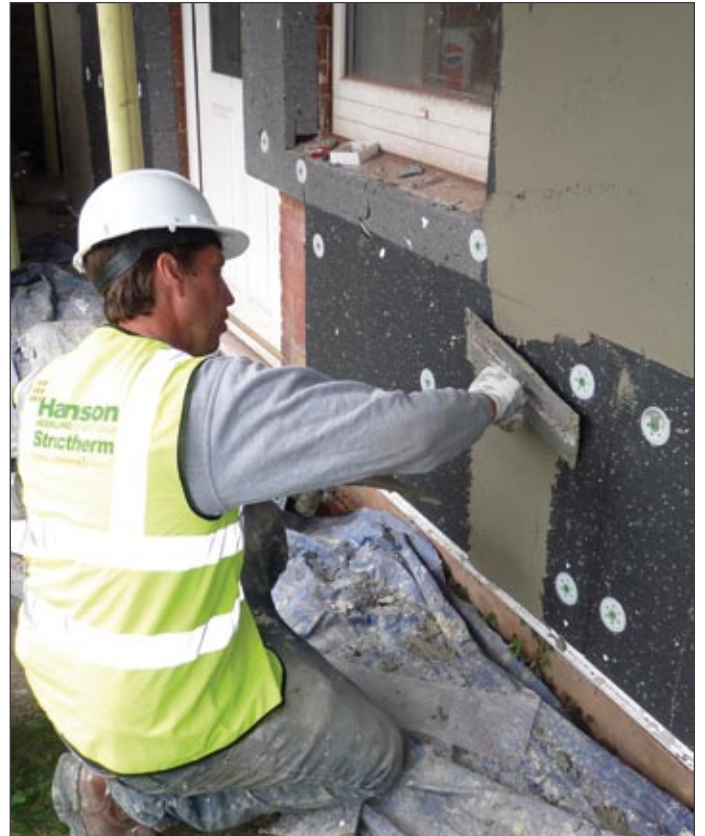
- Feasibility study preparation including cost analysis, works programme and NBS specifications
- U-value calculations to determine insulation type
- Value engineering
- Structural analysis and design including steelwork
- Risk assessments and method statements
- Site support to contractor, approved installer and client
- Street scene, artist impressions
- Product and colour samples

NBS Specifications

Structherm provide specifications in NBS format, the recognised national standard specification system for the UK construction industry.

Approved Installation Contractors

Fully trained Approved Installation Contractors (AIC's), operate nationally and are regularly assessed in the application of our products and systems which ensures that all projects are completed to the highest standards possible and allows us to maintain an extremely high level of quality on every job.



Accreditations & Memberships

- BBA certified
- Ofgem Registered
- Warranty and product guarantee
- Minimum design life of 30 years
- Design covered by professional indemnity insurance
- INCA and NIA membership
- National Refurbishment Centre partner
- UK Green Building Council member



Structherm's product range includes:

- Structural External Wall Insulation
- Renders & Finishes
- Wonderwall
- Acrylic Brick Slips

Structherm supplies the following sectors:

- Social Housing
- Education
- Commercial
- Private Landlords

Structherm Ltd is part of the Hanson-HeidelbergCement Group

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