External Wall Insulation
For Housing Refurbishment
Energy Companies Obligation (ECO)
For social housing projects.

The UK Government’s target to reduce carbon emissions by 80% before 2050 is driving today’s construction policy. The majority of buildings that will be in use by 2050 are already in use today. In total, these buildings account for around 40% of the UK’s annual carbon emissions.

On average, 35% of the energy used to heat our homes is lost through the external walls. Significant energy and carbon reductions can be made by refitting homes with more energy efficient technologies. External wall insulation (EWI) is one such technology, protecting the fabric of your home as well as improving energy efficiency.

The Energy Companies Obligation (ECO) is a government funded scheme designed to:
• Reduce UK energy consumption.
• Support those living in fuel poverty and low-income households.
• Improve hard-to-treat solid wall properties.

ECO will run alongside the Green Deal from January 2013 until March 2015. It will fund energy efficiency improvements worth around £1.3 billion every year.

Hard to Treat Homes
There are an estimated 7 million homes in the UK built with single skin, solid walls. These so called ‘hard-to-treat’ homes require some form of insulation to reduce heat loss. With no cavity to fill, cavity wall insulation is not an option.

Social Housing providers are well placed to attract ECO funding for their hard-to-treat stock by achieving economies of scale. EWI is the most effective, long term solution to improve the thermal performance and weather protection of housing. It is an appropriate insulation method for both solid wall and cavity wall construction.
Carbon Saving Communities Obligation
15% of suppliers’ funds are to be used to upgrade hard-to-reach, low-income households in rural communities.

Affordable Warmth Obligation
Provides heating and insulation measures to low-income consumers living in private tenure properties that receive particular means-tested benefits, e.g. the elderly, disabled and families.

Carbon Saving Obligation
Covers the installation of measures like solid wall and hard-to-treat cavity wall insulation, which ordinarily cannot be financed solely through the Green Deal.
Why externally insulate?
Protect your investment

Improving the thermal efficiency of buildings is economically, socially and environmentally advantageous.

There are three main insulation methods:
- Internal wall insulation
- Cavity wall insulation
- External wall insulation

Of the three, Sto maintains that external wall insulation is the best long term solution to protect your interests. Stomix systems demonstrate significant benefits when it comes to thermally insulating and protecting the fabric of your property, including:

1. Significantly reduce heat loss and energy consumption
If two or more uninsulated materials meet within a substrate, heat can be transferred from one material to the other. This phenomenon is known as thermal bridging, moving from hot to cold and typically interior to exterior. The more thermal bridges there are, the less energy efficient the building. External wall insulation minimises or removes such occurrences and greatly simplifies the detailing to achieve high thermal performance. Less energy is needed to warm the building and heat is retained for longer, creating a more comfortable interior environment.

Thermal image showing domestic heat loss. The house on the left has been well insulated, while the house on the right is poorly insulated.

2. Minimise condensation, damp and mould
Damp and mould growth are the cause for a number of respiratory and other health related issues. Both are caused when the internal room temperature falls below the dew point. Cold spots on walls cool the air to a point where the moisture vapour forms a liquid, forming damp patches. This process can also lead to mould growth.

Correctly installed EWI systems protect the entire wall, maintaining a warm and dry substrate. Protected in this manner, substrate temperatures are maintained above the dew point. This effectively deals with damp, mould growth and other environmental issues.
3. Protect properties from weather damage
An insulated, rendered facade protects the substrate from frost and moisture damage. This significantly reduces the risk of high maintenance and repair costs.

4. Minimise costs and disruption
Externally insulating will not encroach into the interior of your properties, all work is external. This removes the need for significant internal refurbishment and will not reduce interior room dimensions. There is also no need to temporarily rehouse your tenants. Such disruptions are often unwelcome and the associated costs need to be factored in when selecting an insulation system.
Why Stomix?
Selecting the right partner.

A subsidiary of Sto, Stomix manufactures and distributes EWI systems ideal for the ECO market. Originally developed for Eastern European climates, the Stomix systems have proven themselves capable in demanding environments whilst keeping costs low.

The Sto Group
Sto is a leading global building products manufacturer with origins traced back to 1835. The group is active in over 87 countries, with close to 5,000 staff and a €1 billion sales turnover. Recognised globally as the render and EWI quality benchmark, Sto innovates through technological leadership in all of their core markets, with heavy investment in Research & Development.

Support from start to finish
Since 1955, Sto has been manufacturing and supplying external wall insulation systems. Over 450 million m² have been applied worldwide. We offer unparalleled experience, knowledge and expertise in the design and manufacture of durable solutions.

Technical Support
When you specify Stomix products and systems, you receive professional consultancy and advice on all aspects of the project.

Sto Technical Consultants for Refurbishment can guide you on the most suitable system to meet your design and objectives. They can attend pre-start meetings and will be your first port of call for any questions, colour visualisations or sample requirements. You can be confident that they will see the project through smoothly from start to finish.

Sto Technical Advisors can meet you on-site to provide support and to ensure that Stomix products are installed to specification. Each Sto Advisor is a qualified tradesman and an expert in their field.

Product warranties you can trust
Sto offers a standard company product warranty of 10 years from the date of purchase. During the warranty period, Sto will ensure that:

- Products are of satisfactory quality to meet the needs of the specification.
- Products are of a standard which is appropriate for the purposes for which they have been and are to be used.
- Only Sto-trained applicators are able to install Stomix external wall insulation systems. A list of trained installers is available from Sto (T: 0141 892 8000)
- Advice is available regarding the provision of a latent defects and insolvency insurance for longer terms of warranty. Please contact Sto for information.
Recycling
As a company committed to protection of the environment, we are members of a compliance scheme that issues Packaging Recycling Notes (PRNs) for every tonne of our waste that is recycled.

Our EWI insulation board suppliers offer a waste collection service for uncontaminated offcuts of materials. These are collected and then recycled into new products.

The installer has a responsibility under the ‘Site Waste Management Plans’ to ensure that the packaging is properly disposed of. We do everything we can to keep the amount used minimal for safe handling and transportation.

Stomix Systems | StxTherm
With Ofgem and BBA approvals, we wish to offer our ECO customers the most comprehensive range of building systems. These systems use Stomix products to offer cost-effective, durable refurbishment solutions, tailored for all types of social housing stock.

Considering the market driving factors, we have developed three Stomix external wall insulation systems for the ECO market:

• **StxTherm Eco**
  An economical system for large scale refurbishment projects

• **StxTherm Robust**
  A system offering traditional finishes suitable for strict planning authority regulations

• **StxTherm Protect**
  A system ideal for high rise projects and fire safety requirements
StxTherm Eco
Cost-effective solution for larger projects.

StxTherm Eco is a silicone rendered system suitable for low to medium rise buildings such as terraced or semi-detached housing. Our most economical EWI system, it should appeal to social housing providers managing a huge property portfolio.

• Vapour permeable and weather resistant
• Silicone finish provides improved moisture shedding properties and built-in resistance to algae growth
• The silicone finish render comes in a range of pastel shades to harmonise with the surrounding environment (see page 17 for colour range).

1. Substrate
2. Adhesive mortar
3. Grey expanded polystyrene insulation board
4. Mineralic reinforcing coat
5. Glass fibre reinforcing mesh
   Embedded into the mineralic reinforcing coat
6. Primer
7. Decorative silicone render finish

Typical Orlit property:
Before (right) and after (top)

The technical specifications and information on the products contained in the Technical Data Sheets and system descriptions/approvals must be observed.
StxTherm Robust
Traditional finishes for strict local planning requirements.

StxTherm Robust is a low-to-medium rise system that offers either a dash or brick slip finish. These more traditional looking finishes are ideal for projects in areas with tighter planning regulations.

- Available in a heavy duty dry dash render finish or synthetic brick slips.
- Further improved thermal performance through the use of grey EPS insulation boards.

![Diagram of StxTherm Robust system]

1. Substrate
2. Adhesive mortar
3. Grey expanded polystyrene insulation board
4. Mineralic reinforcing coat
5. Glass fibre reinforcing mesh
   - Embedded into the mineralic reinforcing coat
6. Dash or brick slip finish

Typical Cornish Type 1 property with brick slip finish.
StxTherm Protect
The high rise solution.

StxTherm Protect is an EWI system designed to meet strict fire protection requirements. It is particularly suitable for the refurbishment of high rise housing blocks and offers a wide range of finish design options.

- Non-combustible mineral fibre insulation for outstanding fire performance.
- All Stomix finish options are available:
  - Silicone resin render finish
  - Dry dash render finish
  - Brick slips.

1. Substrate
2. Adhesive mortar
3. Mineral fibre insulation board
4. Mineralic reinforcing coat
5. Glass fibre reinforcing mesh
   - Embedded into the mineralic reinforcing coat
6. Primer
7. Silicone render, dash or brick slip finish

Typical high rise property:
Before (Right) and after (Above).
Local Planning
Colour & Finish Visualisations.

Architectural drawings or photographic images of a building can be modified to show a selection of possible colour combinations that could be applied.

The colours selected, and judicial design choices as to which parts of a row of terraced houses to apply the various colour shades, can make a dramatic difference to the aesthetics of a building.

The Sto colour design service is particularly helpful for refurbishment projects such as social housing. Colour combinations and where they are applied can make a building appear longer, shorter, wider, as one building or as several. The appropriate selection of colours on a building facade can also have a positive effect on the wellbeing of occupants.

The StoDesign service can speed up negotiations with planning authorities and tenants by providing a range of possible options. If planning allows, you may even wish to let your tenants select their preferred colour.

Speak to Sto about our StoDesign services for your next project.
Render Finishes
For every climate and design.

When refurbishing a property, the chosen finish can significantly change, and even enhance, the aesthetic of the building.

The choice of finish can depend on a number of variables, such as:
• Planning authority policy.
• Local weather conditions.
• Building orientation.

Spray application
Stomix render finishes can be spray applied. Spray application is significantly faster than traditional methods of application, with less waste material and site disruption. Combined, significant cost benefits can be realised.

Silicone render finish
Combining the benefits of mineral and synthetic binders, silicone renders offer excellent weather protection, even in aggressive atmospheres.

• High water repellency
• Vapour permeable
• Dirt resistance
• Through-coloured
• Anti-fungal

The even, stippled texture gives the final finish a flatter aspect compared to a smooth, floated surface which can highlight even minor trowel marks. The texture can also help to promote effective water shedding to avoid algae build-up.

Stomix silicone render comes in a choice of Natural White or 22 colourfast shades from the StoColor System.
Dash Render Finish

In areas of heavy rainfall or heavy traffic, we recommend a finish with a rougher texture, such as a Dry Dash.

A rough surface breaks up the flow of running water and avoids concentration of moisture in one area, minimizing the risk of moisture penetration and subsequent damage. Dash render is also highly resistant to abrasion.

Brick Slips

Flexible, lightweight slips made from acrylic render to simulate brickwork.

Brick Slips allow for the installation of an external wall insulation system without having to forego the appearance of a characteristic brick facade, especially ideal for conforming with local planning restrictions where required.

They offer a long life span with good resistance to weather, mechanical stress and impacts. They are easily cleaned and require very little maintenance.

Brick Slips are available in 6 standard colours plus 6 shades of mortar to match the surrounding streetscape or existing brickwork.

They come in standard 215 x 65mm brick size or can be custom-designed to match other brick and tile designs, including terracotta tiles.

Decorative, lightweight rustications

A full range of decorative profiles and rustications are available to help refurbished houses match the surrounding built environment. They are lightweight, provide excellent weather resistance and are easy to shape and install.

The range includes standard designs, or they can be custom formed to match existing profiles.
When refurbishing a house, numerous opportunities for cold bridges arise. Thermal bridging is a phenomenon where heat can be lost where components with higher thermal conductivity penetrate the insulating layer of the building.

Any material interfaces, such as windows, doors and eaves, can significantly impact on the overall thermal efficiency of the building.

Whether eaves profiles, window reveals or sills, installing the correct system details will ensure that the building continues to be thermally efficient in the long term.

Below DPC treatment

Essential for prevention of water penetration and maintaining thermal performance below DPC level.
Eaves - verge trim

For properties where the existing eaves do not sufficiently protect the new insulation system.

Window sill

Most sills will require a new oversill to ensure a professional finish and adequate protection of the new insulation system.
**Partially insulated window head**

Detail for the treatment at the top of window openings.

---

**Intersection with an alley**

Detail of insulation pattern where the side of a house to be treated forms part of an alleyway.
Stop End - Rendered Return

The best way for finishing a system where the adjacent property is not to be treated.

Flue penetration

Detail of the insulation treatment around flues and other penetrations through the insulation layer.
Accessories
A systematic approach.

Attention to detail is key to a successful refurbishment – happy tenants with lower energy bills, a much improved thermal performance and good looks that will last.

Sto offers complete external wall insulation systems, including a selection of highest quality, specially fabricated accessories, such as beads, profiles, mesh and tracks. These have been developed for durability and to suit typical build conditions within the refurbishment sector.
Starter Tracks
Starter tracks provide a sound, level base from which to work. 2.5m long and in widths to suit all insulation thicknesses. Use together with clip-on nosings to give a clean drip edge to work from.

Mesh
Stomix glass fibre mesh is an essential component of the insulation system, providing strength and helping to prevent crack formation.

Full System Stop Beads
Provide a clean edge when the insulation system has to be terminated between semi-detached or terraced dwellings.

Render Stop Beads
Used where a physical delineation between semi-detached or terraced properties is required or where adjoining properties differ in finish or colour.

Corner beads
Provide additional strength and reinforcement on external corners to prevent cracking.

Window reveal beads
Create a seal to the window frame, terminate the render and provide a self-adhesive surface to which window protection can be fixed.
Head Office
Sto Ltd.
2 Gordon Avenue
Hillington Park
Glasgow G52 4TG
Tel +44 (0)141 892 8000
Fax +44 (0)141 404 9001
info.uk@sto.com
www.sto.co.uk

Southern Office & Distribution Centre
Sto Ltd.
Antura
Kingsland Business Park
Wade Road
Basingstoke RG24 8EN
Tel +44 (0)1256 332770
Fax +44 (0)1256 810887

Midlands Training & Distribution Centre
Sto Ltd.
Unit 700
Catesby Park
Kings Norton
Birmingham B38 8SE
Tel +44 (0)121 459 5149
Fax +44 (0)121 459 0632