External Insulation

... is like wrapping your house in a blanket

greenspan
PRODUCTS LTD

"Many Irish houses, particularly those built before 1980, are very wasteful of energy.
Various cost-effective energy saving opportunities exist which, through reducing fuel and electricity bills, can pay for themselves in a relatively short time. The implementation of energy conservation measures can also make the house warmer, more comfortable and eliminate cold draughts and condensation."
Sustainable Energy Ireland

Greenspan Products was founded in 1999 and has since achieved enormous growth with an innovative approach to the supply of specialist materials to the building industry.

Among the multi-national companies from which Greenspan has sourced products are USG (United States Gypsum), Knauf/USG (Germany), Teais (Spain), Tecnocem (Spain) and Brillux (Germany). All of these companies are widely acknowledged as being at the cutting edge of modern building concepts and systems.

Greenspan has adopted an aggressive approach to the marketing of a range of proven products that set's new building standards for design and construction. The company takes a specialist approach to the systems it promotes, getting involved at the design stage and providing developers with knowledge-based and cost effective modern building solutions.

Greenspan has led from the outset, when External Insulation Systems were introduced to the Irish market.

Whether you are planning the construction of a new building or renovating an existing one, Greenspan can offer durable, cost-effective solutions in keeping with the highest standards of the construction industry. Greenspan's Exterior Insulation System can be used on almost any existing surface, easily and at reasonable cost.

When first introduced, External Insulation Systems were used mainly in the refurbishment and upgrade of buildings. Today, they are well established as an efficient cladding for external walls. External Insulation Systems are now being readily applied to solid and framed wall construction on new-build commercial and residential applications as well as on many refurbishment projects.

Over the last number of years, Greenspan has provided external insulation systems to a variety of projects throughout the country. Five years ago, the company was directly involved in the first passive residential country house in County Wicklow. As well as residential projects, the company has undertaken a number of major commercial works.

Today, we are pleased to offer the proven External Insulation System developed by Brillux.

Michael A. Cregan
Managing Director

what is external insulation?

Heat loss through walls is up to 35%

External Insulation – turning insulation inside out

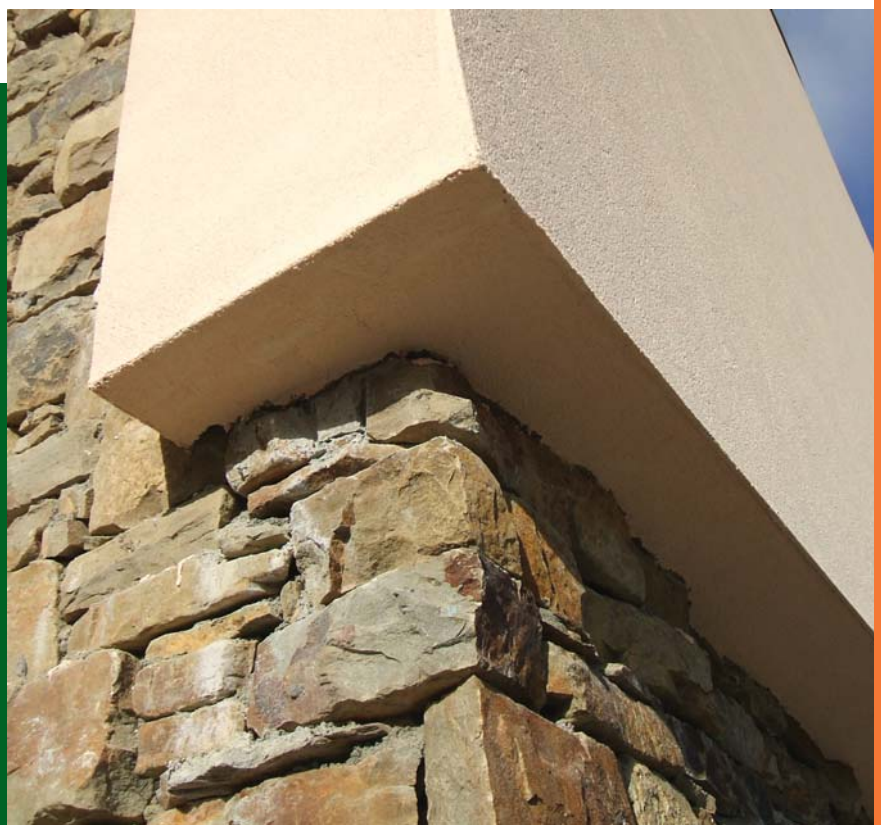
The Greenspan External Insulation System is a cost-effective and energy-efficient solution that insulates buildings from the outside. Insulation is more cost-effective when placed on the outside of a building, as it keeps the thermal mass of the concrete walls within an envelope. It means that your walls will act as a thermal store by absorbing heat during the day and slowly releasing it at night.

External insulation is a perfect solution for new build or refurbishment projects, providing excellent performance and aesthetic characteristics. The system is composed of an adhesively or mechanically fastened foam insulation board, reinforcing mesh, a basecoat and an outer finish coat. By wrapping your whole house with insulation board, you can stabilise the interior environment and eliminate thermal bridges. Also, by applying the finish on the outside, you are protecting your house from wind and moisture penetration. With the Greenspan External Insulation System, you can easily achieve U-values of 0.15 W/m²K - performance that is far superior to that of more traditional building techniques.

Conservation of Energy and the Building Regulations 2002

"The Building Regulations 2002, Part L Conservation of Fuel and Energy, require that all new buildings achieve minimum standards of energy efficiency. Existing houses should be refurbished to achieve these standards also. The minimum level of insulation for walls - (U-value is 0.27 W/m²K) - is a higher level of insulation than that required in the Building Regulations since a house being built or refurbished today can be expected to be occupied for 60 years or more, and energy-efficient design can yield considerable savings over its lifetime."

Sustainable Energy Ireland



the system

1 THE BASIC STRUCTURE

The substrate of any wall in an existing building or one under construction is suited to external insulation. External Insulation Systems are now being readily applied to solid and framed wall constructions on new-build commercial and residential applications as well as on many refurbishment projects.

2 INSULATION BOARD

An expanded polystyrene (EPS) insulation panel, manufactured under criteria exceeding the most stringent construction industry standards, is added to the basic structure. Panel thickness is based on building specifications or particular construction needs. In addition to its insulation properties, the flexible polystyrene panel serves as wall cladding reliably countering vibration and movement experienced by all commercial and residential buildings.

3 BASE COAT

A cementitious base coat is applied to the insulation panel to embed the glass fibre mesh, followed by the finish coat. The base coat is flexible, malleable and waterproof, adding durability and weather-proofness to the wall.

4 GLASS FIBRE MESH

Armour mesh made of glass fibre is embedded in the base coat. In addition to prolonging wall durability, this technique ensures high impact strength and impressive resistance to cracking. In high traffic areas subject to impact, a double layer of mesh may be added to the wall.

5 THE SURFACE FINISH

The surface finish consists of 100% polymer acrylic that is flexible, durable and crack resistant. Greenspan offers a wide selection of textures and an infinite choice of colours that are mixed directly in the 100% polymer acrylic finish rather than applying a surface coat. Acrylic polymer ranks among the products most resistant to ultraviolet rays. Colours maintain their brilliance over the years, adding to the aesthetic appearance of your building.

from the smallest to the biggest projects

The Greenspan External Insulation System is suited to both residential and large commercial or industrial projects. In every case, appearance, insulation performance and weather resistance are of utmost importance.

ideal for new buildings and renovations

Whether you are planning the construction of a new building or renovating an existing one, Greenspan can offer you a durable, cost-effective solution in keeping with the highest standards of the construction industry.

why choose external insulation?

- Lowers maintenance costs
- Increases the value of the property
- Lowers emission of household gases (CO_2)
- Avoids internal building works*
- Renews ageing exterior facades*
- Can be installed during occupancy *
- Gives major aesthetic improvements*
- Does not reduce the size of rooms
- Increases the life expectancy of the building*
- Protects the fabric of the building
- Improves thermal performance
- Ensures consistent U-values
- Reduces thermal bridging, minimising condensation and heat loss
- Reduces thermal stress on the structure or substrate
- Transfers the dew-point to the outside of the structural wall element
- Improves air-tightness of the construction which reduces draughts and heat loss
- Optimises use of thermal mass, reducing internal temperature fluctuations
- May contribute to improved sound insulation as part of a general refurbishment strategy, e.g. window replacement
- Available in a wide range of external finishes

* renovations

greenspan insulation system explained

When first introduced, Greenspan Insulation Systems were used mainly in the refurbishment and upgrade of buildings. Today, they are well established as an efficient cladding for external walls. External insulation systems are now being readily applied to solid and framed wall construction on new-build commercial and residential applications as well as on many refurbishment projects.

One of the major advantages of external insulation on existing buildings is all the work is carried out externally... no interference with the inside of the house and life continues as normal inside.

The most frequently specified type of Greenspan Insulation Systems are barrier systems consisting of expanded polystyrene or mineral wool insulation boards secured by adhesive or mechanical fixings depending on the condition of the substrate. A weatherproof base coat, reinforced with a glass fibre mesh, is applied to the outer skin, followed by an acrylic copolymer "dirtpickup resistant" (DPR) coating of the desired texture and colour. One of the main reasons for the rapid uptake of external insulation systems is the excellent thermal efficiency of this type of system. In traditional cavity wall construction, insulation is normally applied either within the cavity or behind the plasterboard on the internal face of the wall. The Greenspan Insulation System, applied to the outer face of a solid or sheathed frame structure, provides a blanket of insulation on the outside of the building providing a "warm wall" or "warm frame" construction. Because the Greenspan Insulation System insulates the very outer layer of the building, cold bridging through the building's envelope around window and door openings and at the junction of walls with floors and roofs is avoided. This type of cold bridging is instrumental in the loss of heat normally experienced in traditional build, but the "warm frame" method ensures that insulation is continuous right up to the openings thus combating the problem.

Changes to the Irish Building regulations, and the introduction of Building Energy Rating (BER) certificates, require increased thermal insulation performance for the construction of new and existing buildings. The U-Value relates to building component or structure, and is a measure of the rate at which heat passes through that component or structure when unit temperature is maintained between the ambient air temperatures on each side.

These changes can only increase interest in the Greenspan Insulation System, as such systems, when fixed to a solid or lightweight frame construction, can easily achieve U-Values of 0.15 W/(m^2K) unlike more traditional building techniques.

While these requirements are fairly strict, they do not necessarily restrict the design of a building. Designers can adopt the "target method" to achieve an acceptable overall thermal efficiency value for the building. This basically means trading off one element of the building against another to balance the heat loss in one area with heat conservation elsewhere.

For example, a large area of glazing which, in relative terms is thermally inefficient, might be incorporated into a building if a high performance Greenspan Insulation System frame wall is employed to reduce heat loss through the walls. The target method is essentially a balancing act, but when accurate calculations are made, it is also a useful cost engineering exercise for each building element that can lower overall project costs.

Another benefit of insulation placed on the outside of a building is that condensation forming on cold internal surfaces and interstitial condensation within the thickness of the wall can be avoided. "Warm wall" construction prevents the internal surface temperature and substrate elements falling below the dew point temperature, and so eliminates local cool spots or areas of "ghosting" where localised condensation can occur.

Air-tightness of construction is also to become a key consideration in dwelling design since heating demand is significantly affected by infiltration of cooler outside air through cracks and gaps in the building's envelope.

Effective air-tightness can be achieved by the introduction of an air and moisture barrier applied between the warm layer of insulation and the substrate ensuring a good seal around all openings. The Greenspan Insulation System incorporates an air and moisture barrier that helps to meet this criterion when applied directly to the substrate and sealed around openings. Polymer modified membranes can be roller applied directly on to the substrate to ensure that the insulation adheres to the substrate.

In general, exterior claddings, including brickwork, render, rainscreen and exterior insulation and finish systems, all have the same potential for moisture ingress. While system manufacturers are committed to specialist installation of their products there are some instances where moisture infiltration may occur at the transition points between different cladding systems or failure of joint sealants around openings. This is not the failure of the Greenspan Insulation System materials, but moisture drainage systems have been introduced to deal positively with the possibility of moisture entering the system and are considered an upgrade on the standard barrier system.

Hence a second line of defence against moisture and driving rain can be provided by incorporating a vapour barrier and forming vertical channels in the adhesive layer holding the Greenspan Insulation System to the substrate.

This creates a moisture drainage system with added protection built-in. It is also cost effective and has the added benefit of anticipating future air infiltration requirements.

Greenspan Insulation Systems, used in conjunction with lightweight steel frame and modular build, are now leading the way with the ability to meet the design needs of virtually any building. Greenspan Insulation Systems can be applied on site to solid or sheathed framed structures or prefabricated under factory conditions and delivered to site ready for installation. This means that the speed of construction can be accelerated, while quality control can be made tighter and more reliable.

Bearing in mind that architects design buildings to satisfy their clients' aesthetic aspirations as well as to satisfy current building regulations, the attractions of external insulation and finish systems become evident. With a wide variety of textured and coloured finishes to choose from, today's Greenspan Insulation System offers considerable freedom to designers.

the producer

Brillux
..more than just paint

Founded in 1889 in Münster (Germany), Brillux has a long history of excellence. Brillux has more than 130 branches in Germany, the Netherlands, Switzerland and Austria, and is expanding into new markets throughout the EU.

Brillux has always told its customers: "We are more than just paint." The Company offers a full spectrum of products and services designed to satisfy its customers' needs. This customer orientation is best expressed in our motto "Brillux Direct Philosophy."

The current Brillux headquarters in Münster was built in 1968, modernized in 1987 and again in 1999. The four production plants are among the most modern in Europe. Brillux is constantly updating its facilities and manufacturing technology and offers today an assortment of over 12,000 products for every job in the painter's, varnisher's and plasterer's trades.

Since 2007, Greenspan Products Limited has been the official Brillux partner for Ireland.

components

White Polystyrene.
Insulation board with low inflammability, smooth edged, for wall and ceiling insulation.
Thermal conductivity (l): 0.037 W/(mK)
Length: 1200mm, Width: 600mm,
Thickness: 10-400mm

Platinum Polystyrene.
Special insulation board with low inflammability, smooth edged, for wall and ceiling insulation with excellent thermal features.
Thermal conductivity (l): 0.031 W/(mK)
Length: 1200mm, Width: 600mm,
Thickness: 10-400mm

Adhesive & Basecoat.
Mineral adhesive and reinforcement mortar for the Greenspan Insulation System.
Unit size: 25kg bag
Usage: As adhesive: 4-6kg/m^2
As basecoat: 4.5kg/m^2

Reinforcing mesh.
Reinforcement fibre mesh for surface reinforcement in the Greenspan Insulation System.
Unit size: 1.1m wide x 50m long
Coverage: approx. 50m^2

Mineral plaster primer.
Weather-resistant, emulsion-based priming paint to be used before applying mineral plaster finish in the Greenspan Insulation System.
Unit size: 15l pail
Usage: 150-200ml/m^2

Silicone plaster primer.
An adhesion-promoting primer paint with a silicone resin base, to be used with silicone plaster in the Greenspan Insulation System.
Unit size: 15l pail
Usage: 150-200ml/m^2

Mineral plaster KR.
Plaster with a scraped surface texture for decorative weather resistant top coats in the Greenspan Insulation System.
Unit size: 25kg bag
Usage: 2.3-2.5kg/m^2

Silicone plaster KR.
Plaster is weatherproof with outstanding water-repelling properties thanks to a special combination of bonding agents.
Unit size: 25kg pail
Usage: 2.5-3kg/m^2

Silicate Paint.
Single component, silicate-based equalizing silicate paint, weather resistant.
Unit size: 15l pail
Usage: 150-200ml/m^2

Accessories.
Comprehensive range of beads, trims, mechanical fixings, sills and tools to be used with the Greenspan Insulation System.

Complete Greenspan Insulation System - EVERYTHING FROM ONE SOURCE

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NSAI Agrément
Brillux External Insulation System
Cert No. 10/0344

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..more than just paint

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