

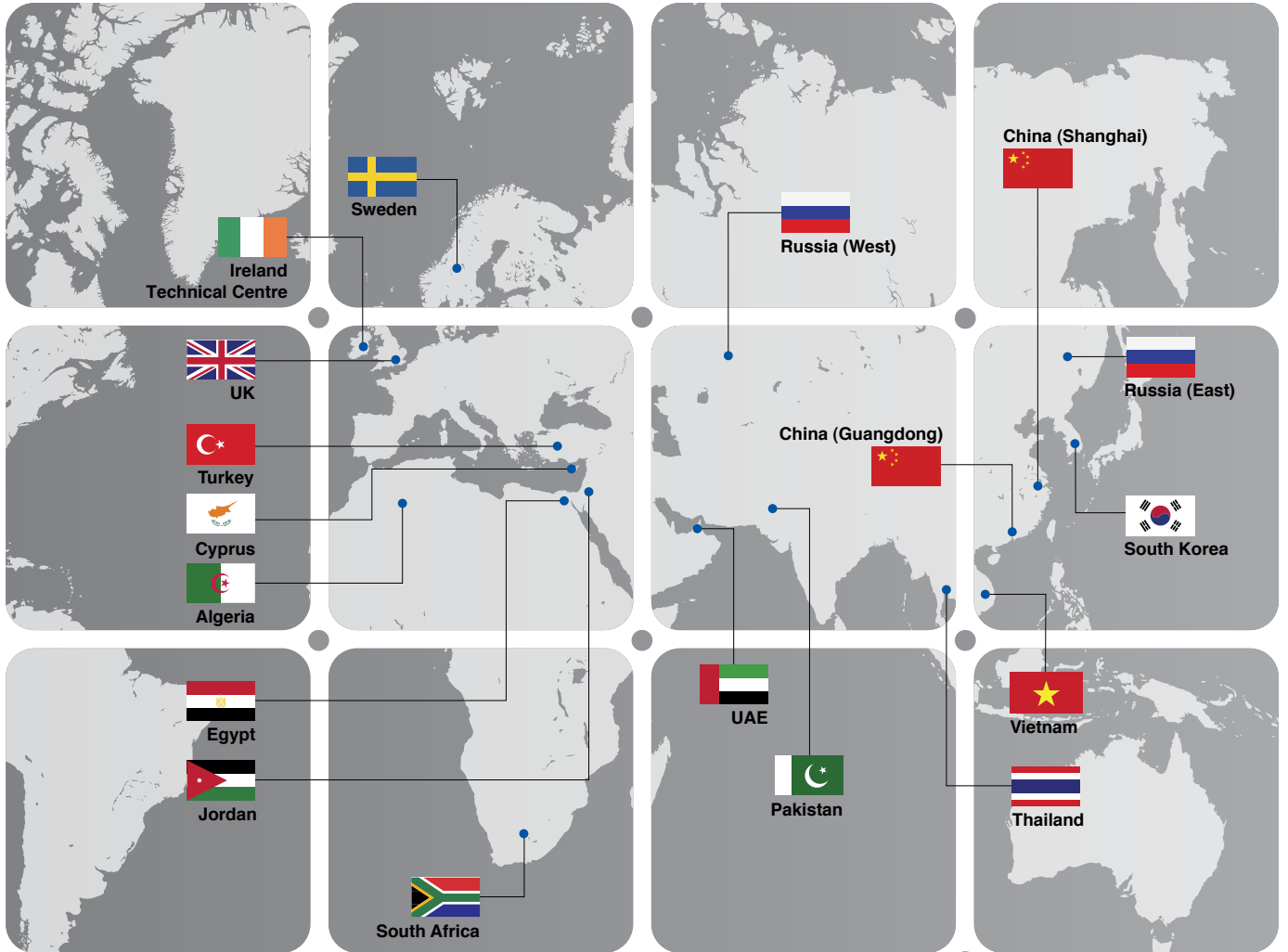
//// TERRACO®

TERRACO® **eifs**
EXTERIOR INSULATION FINISHING SYSTEMS

Exterior Insulation Finishing Systems

EIFS

The House of Scandinavian Finishing Materials



AVAILABLE IN OVER 75 COUNTRIES

32 companies 18 factories
More than a quarter of a billion square metres of product applied per year



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EXTERIOR INSULATION FINISHING SYSTEMS

Exterior Insulation Finishing Systems (EIFS) can be defined as an energy efficient thermal wrapping applied to the exterior surfaces of a building which are then finished with a long-life, decorative and protective wall coating. In the industry these systems are referred to as EIFS, ETICS, or EWI.

Terraco has been pioneering the development and production of Exterior Insulation Finishing Systems since the 1980's. Terraco EIFS combines continuous exterior insulation with design-flexible aesthetics that ensure indoor comfort and improved energy efficiency in a single high quality wall system using sophisticated decorative finishes.

Terraco EIFS has numerous international EIFS quality certifications and approvals - EOTA (European Technical Approval), BBA (British Agrément), the US FED Specification Certification, as well as certification from Ireland, Russia, Turkey, China, Korea and the UAE.

In many markets, sustainable building and in particular energy efficiency in buildings, has become a key benchmark of successful building designs. Today, architects are quick to see the benefits that these sustainable EIFS building systems give, in both cold and hot climates. EIFS not only allow designers a very large degree of design flexibility, but also typically generate an excellent Return on Investment (ROI) and provide a compelling cost-to-benefit rationale for the customer.

One of the distinguishing benefits of EIFS is that it can be used for renovation projects. Terraco EIFS is a preferred choice to make older buildings more energy efficient, while simultaneously allowing these buildings to be rejuvenated and given a facelift that will stand the test of time.

The versatility and durability of Terraco EIFS makes it ideal for new build as well as renovation projects.

Before Terraco EIFS Insulation

| | | | | |
|----------|---------------|--------|--------|----------|
| Exterior | +50.0° | +30.0° | +20.0° | Interior |
| | +48.8° | +27.5° | +11.8° | |
| | SUMMER | | | |
| | -12.8° | -15.0° | +11.5° | |
| | WINTER | | | |

After Terraco EIFS Insulation

| | | | | |
|----------|---------------|--------|--------|----------|
| Exterior | +60.0° | +30.0° | +20.0° | Interior |
| | +27.5° | +22.0° | +18.3° | |
| | SUMMER | | | |
| | -12.8° | -15.0° | +13.5° | |
| | WINTER | | | |

Roof 25%

Windows 25%

Walls 35%

Floor 15%

Where a normal house usually loses energy

| Category | Percentage |
|----------|------------|
| Floor | 15% |
| Roof | 25% |
| Windows | 25% |
| Walls | 35% |

- A proven track record
- Comes with a guarantee backed performance
- A quality system supported by international certifications
- Substantially reduces the cost of cooling and heating
- A proven contribution to Green Building
- Saves non-renewable resources
- Reduces greenhouse gas (CO₂) emissions
- Promotes indoor comfort & improved quality of life
- Eliminates condensation on walls and ceilings
- Enhanced soundproofing
- Excellent impact resistance
- Allows for cost effective external wall architectural detailing
- Does not require the occupants to vacate during installation
- Does not waste internal living space
- Gives a great return on investment (within approximately 5-6 years)

Market leaders in EIFS in some of the world's harshest climates – speak to us first and last!

International Certificates

- EOTA ETAG 004 (EU)
- BBA Agrément Certificate (UK)
- NSAI Agrément Board Certificate (Ireland)
- FED Specification (US ARMY)
- Russian National Standard: Technical Certificate
- P.R. China Certified System
- TSE Standard (Turkey)
- Romania National Institute (INCERC)
- UAE / UAQ Civil Defence
- ISO certified factories



Terraco EIFS

Terraco's three primary Exterior Insulation Finishing Systems use various insulation materials to meet different climatic conditions and the energy efficient building requirements of today's modern society.

TERRACO eifs
ALPHA

Uses Expanded Polystyrene (EPS) as the insulation material in the Exterior Insulation Finishing System. Also includes graphite enhanced G-EPS.

TERRACO eifs
POLAR

This system is based on using Extruded Polystyrene (XPS) as the insulation material in the Exterior Insulation Finishing System.

TERRACO eifs
PERMA

This system is based on using Mineral Wool (MW) as the insulation material in the Exterior Insulation Finishing System.

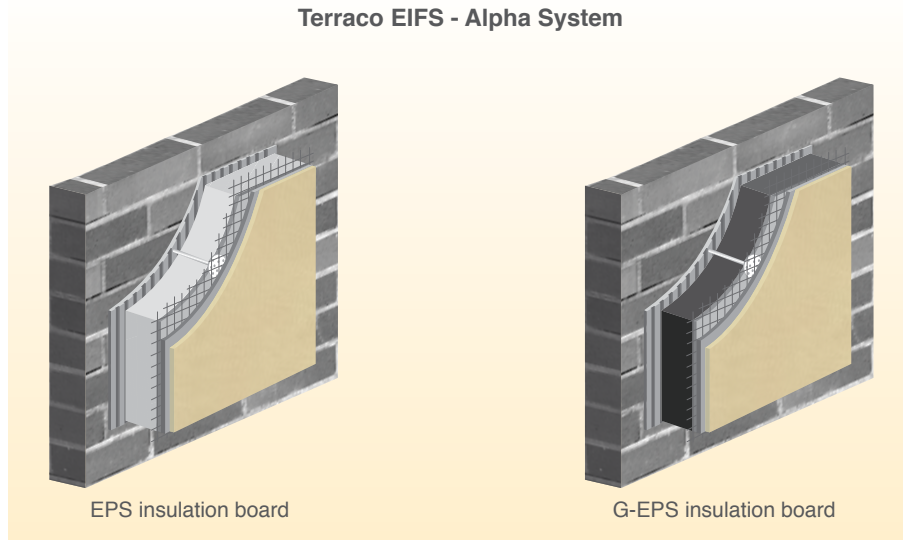
In addition, Terraco also offers a system for Insulated Concrete Forms (ICF).

TERRACO icf
ZENITH

ICF is a construction system using expanded polystyrene "blocks" (ICF) to provide insulation for both the exterior and interior walls which are finished using basecoats, reinforced with mesh, and various decorative finishes.

Terraco's best selling EIFS Alpha System is often specified by architects and consultants alike for new and renovation projects.

This EIFS system is based on using EPS (Expanded Polystyrene) as the insulation material. The principal reason for Terraco EIFS Alpha utilising EPS is because expanded polystyrene is typically the most cost effective insulation board used today, while Graphite Enhanced Expanded Polystyrene (G-EPS) offers approximately 10% more thermal efficiency and is especially suited to renovation work as thinner boards can be used.



The EPS / G-EPS boards are fixed to the substrate using a combination of adhesive (Terraco Styrofix) and mechanical fasteners, then reinforced with a basecoat (Terraco Styrobond) and glass fibre mesh, and finished with a primer and decorative wall coating.

Of particular importance to architects and building owners is the decorative finishing coat, both from an aesthetic and a durability perspective. Terraco offers a comprehensive range of finishing options from long-life acrylic and silicone renders (Terraco Terracoat range), stone effect coatings (Terraco Terralite range) and breathable mineral renders (Terraco Terol range).

| Alpha System | | |
|---------------------|------------------------------|---|
| | Product Name | Description |
| Standard Components | Terraco Styrofix | An adhesive used to fix the EPS to the substrate. |
| | EPS / G-EPS Insulation Board | The insulation material thickness is determined by the thermal performance required. |
| | Mechanical Fasteners | Plastic fasteners with plastic or steel pin dowels are used to fix the EPS to the substrate, which also assists with wind shear at higher levels. |
| | System Profiles | A range of accessories required for strengthening and finishing the system - for finishing around window and door openings, and window sills. |
| | Terraco Styrobond DP | The basecoat that is reinforced with a layer of EIFS Glass Fibre Mesh. |
| | Terraco Terramesh | A reinforcing EIFS Glass Fibre Mesh. |
| | Primer | A basecoat substrate penetrating primer – Terraco P Primer. |
| | Decorative Finish | A high performance, decorative wall coating which is sometimes finished with a clear or pigmented top coat. |

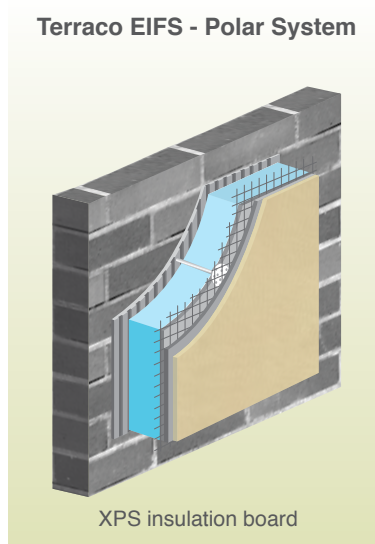
A Guaranteed System

Terraco EIFS Alpha, finished with a Terraco EIFS Decorative Wall Coating from either the Terracoat, Terralite or Terol product ranges, is underwritten by the Terraco International Guarantee when applied by an Approved Terraco EIFS Applicator.

The popular Terraco EIFS Polar System uses XPS (Extruded Polystyrene) board as the insulation material.

XPS is ideally suited to countries which, while being hot, also have high humidity and use air conditioning units inside the building where XPS's low vapour permeability is a distinct advantage reducing condensation.

Furthermore, because of the Polar System's enhanced mechanical properties, it can also be used in high traffic areas or in areas where a 'thinner' insulation material is required. For example, around an opening such as a window or door.



The XPS boards are fixed to the substrate using a combination of adhesive (Terraco Styrofix) and mechanical fasteners, reinforced with a basecoat (Terraco Styrobond) and glass fibre mesh, and finished with a primer and decorative wall coating to achieve the desired architectural appearance.

A comprehensive range of decorative, high build, long-life finishes from acrylic renders (Terraco Terracoat range), stone effect coatings (Terraco Terralite range) and breathable mineral renders (Terraco Terol range) allows architects and building owners to select the product that best suits their design and durability requirements.

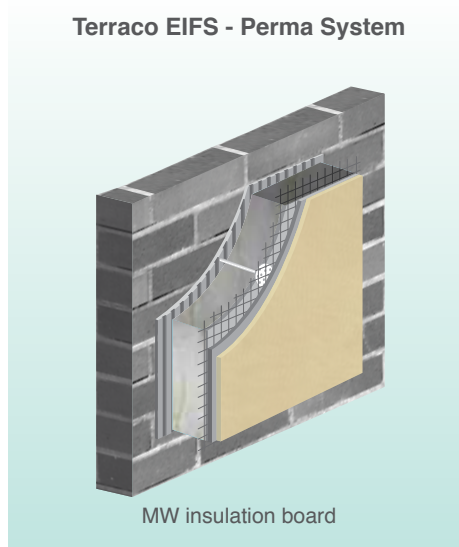
| Polar System | | |
|---------------------|----------------------|---|
| | Product Name | Description |
| Standard Components | Terraco Styrofix | An adhesive used to fix the XPS to the substrate. |
| | XPS Insulation Board | The insulation material thickness is determined by the thermal performance required. |
| | Mechanical Fasteners | Plastic fasteners with plastic or steel pin dowels are used to fix the XPS to the substrate, which also assists with wind shear at higher levels. |
| | System Profiles | A range of accessories required for strengthening and finishing the system - for finishing around window and door openings, and window sills. |
| | Terraco Styrobond DP | The basecoat that is reinforced with a layer of EIFS Glass Fibre Mesh. |
| | Terraco Terramesh | A reinforcing EIFS Glass Fibre Mesh. |
| | Primer | A basecoat substrate penetrating primer – Terraco P Primer. |
| | Decorative Finish | A high performance, decorative wall coating which is sometimes finished with a clear or pigmented top coat. |

A Guaranteed System

Terraco EIFS Polar, finished with a Terraco EIFS Decorative Wall Coating from either the Terracoat, Terralite or Terol product ranges, is underwritten by the Terraco International Guarantee when applied by an Approved Terraco EIFS Applicator.

Terraco's EIFS Perma System uses MW (Mineral Wool) as the insulation material and is recommended when a higher fire rating is required.

Mineral Wool is popular in cold and damp climates, such as in Russia, where enhanced wall breathability is required, something to consider when insulating structures or old buildings which have high levels of moisture.



The Perma System uses only highly vapour permeable (breathable) decorative renders such as Terracoat Sil or Terol to finish the system.

This EIFS System consists of the following components, the MW being fixed to the substrate using a combination of adhesive (Terraco Styrofix) and mechanical fasteners, then reinforced with a basecoat (Terraco Styrobond) and glass fibre mesh, and finished using a decorative, breathable wall coating.

The benefit to the specifier and the customer is that Terracoat Sil and Terol are available in a wide range of colours and textures which provides them with technically advanced solutions and a high level of durability.

| Perma System | | |
|---------------------|----------------------|---|
| | Product Name | Description |
| Standard Components | Terraco Styrofix | An adhesive used to fix the MW to the substrate. |
| | MW Insulation Board | The insulation material thickness is determined by the thermal performance required. |
| | Mechanical Fasteners | Fasteners for MW are used to fix the insulation board to the substrate, which also assists with wind shear at higher levels. |
| | System Profiles | A range of accessories required for strengthening and finishing the system - for finishing around window and door openings, and window sills. |
| | Terraco Styrobond DP | The basecoat that is reinforced with a layer of EIFS Glass Fibre Mesh. |
| | Terraco Terramesh | A reinforcing EIFS Glass Fibre Mesh. |
| | Primer | A basecoat substrate penetrating primer – Terraco Silprime. |
| | Decorative Finish | A high performance, breathable, decorative wall coating which is sometimes finished with a pigmented top coat. |

A Guaranteed System

Terraco EIFS Perma finished with Terraco Terracoat Sil or Terraco Terol products is underwritten by the Terraco International Guarantee when applied by an Approved Terraco EIFS Applicator.

Insulated Concrete Form (ICF) construction systems have proved popular in the United States, Europe and the Middle East for many years. These systems reduce construction times, have good insulation properties, and reduce energy consumption in hot and cold climates.

ICF systems use interlocked expanded polystyrene "blocks" as an insulated concrete formwork (ICF) for rapid construction of structural walls while also providing continuous insulation to both the exterior and interior external walls.

Terraco ICF - Zenith System



When the concrete is poured into the EPS formwork and cured, the EPS exterior and interior walls are finished using a basecoat (Terraco Styrobond DP HB), reinforced with glass fibre mesh, and finished with:

- Externally - A primer and a decorative wall coating;
- Internally - Terraco Handycoat Interior skim coat over coated with one of Terraco's Interior Paints and / or Designer Collection products.

As the decorative finish coat is of paramount importance to architects, designers and building owners, they are able to select textures and colours to meet their architectural requirements from Terraco's comprehensive range of exterior decorative wall coatings, as well as the Designer Collection and emulsion paint ranges.

Zenith System

| | | Product Name | Description |
|---------------------|----------|-------------------------|---|
| Standard Components | Exterior | Terraco Styrobond DP HB | A specially formulated mortar to embed Terramesh glass fibre reinforcing mesh in ICF construction where a high build basecoat thickness is required. |
| | | Terraco Terramesh | A reinforcing EIFS Glass Fibre Mesh. |
| | | System Profiles | A range of accessories required for strengthening and finishing the system around window and door openings, window sills, etc. |
| | | Primer | A basecoat substrate penetrating primer – P Primer. |
| | | Decorative Finish | A high performance, decorative Terracoat acrylic or silicone wall coating which is sometimes finished with a clear or pigmented top coat. |
| | Interior | Terraco Styrobond DP HB | A specially formulated mortar to embed Terramesh glass fibre reinforcing mesh in ICF construction where a higher thickness is required. |
| | | Terraco Terramesh | A reinforcing EIFS Glass Fibre Mesh. |
| | | System Profiles | A range of accessories required for strengthening and finishing the system around window and door openings, window sills, etc. |
| | | Skim coat | Skim walls with two coats of Handycoat Interior to create a surface suitable for painting and decorating. It is recommended that Handycoat Exterior be used for internal wet areas. |
| | | Decorative Finish | Terraco offers a range of quality interior paints and / or designer collection coatings for finishing the interior walls and ceilings. |

A Guaranteed System

Terraco ICF Zenith, finished externally with a Terraco EIFS Decorative Wall Coating from either the Terracoat or Terralite product ranges, is underwritten by the Terraco International Guarantee when applied by an Approved Terraco EIFS Applicator.

System Components

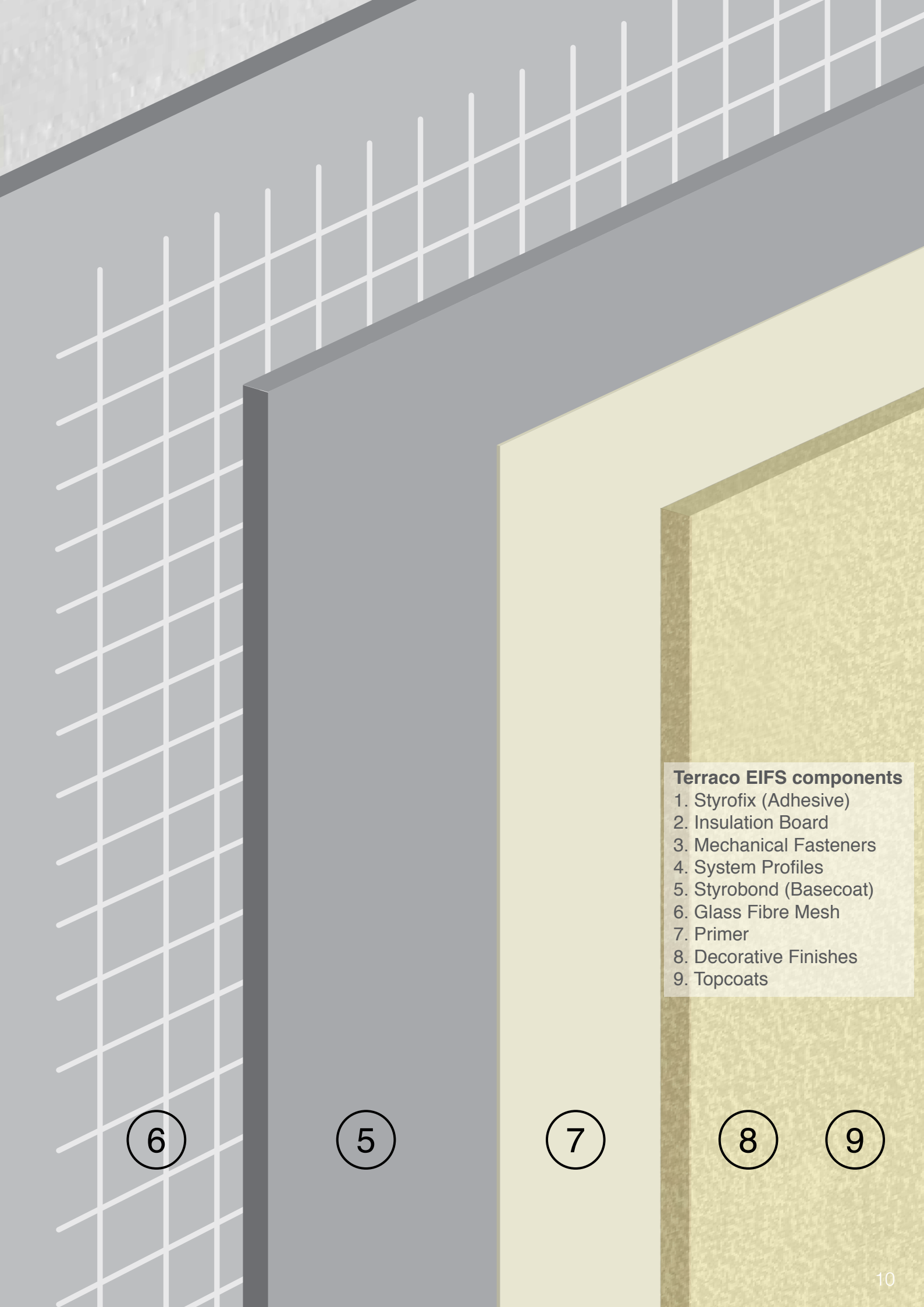
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Terraco EIFS components

- 1. Styrofix (Adhesive)
- 2. Insulation Board
- 3. Mechanical Fasteners
- 4. System Profiles
- 5. Styrobond (Basecoat)
- 6. Glass Fibre Mesh
- 7. Primer
- 8. Decorative Finishes
- 9. Topcoats

6

5

7

8

9

1. Styrofix (Adhesive)

Terraco **Styrofix** is a polymer modified, dry-mix adhesive applied between the substrate and the insulation board to secure the board to the wall in the Terraco EIFS System. It is user friendly and factory mixed, improving on site quality control. Styrofix shows excellent adhesion between various substrates and insulation boards.

- Water resistant
- Excellent adhesion
- Good flexural strength
- Easy to use

MIXING

Mix Styrofix on site with clean water in the ratio of approximately 4 parts Styrofix to 1 part water by weight, mixing with a high speed mixer for 3 - 5 minutes. Allow the material to stand for 5 minutes, remix and use. Mix only enough material for immediate use.

APPLICATION

Apply Styrofix to the insulation board and ensure the correct level using a spirit level when pressing the boards into place. Do not allow the adhesive to form a skin before fixing into place.

Spot Method

Apply Styrofix adhesive to 6 inner spots on the back side of the insulation board, ensuring it covers 40% of the surface area. (4 - 5 kg/m²)



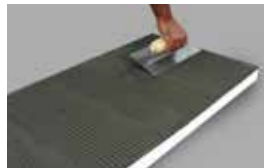
Ribbon & Dab Method

Apply Styrofix adhesive to the external edges and to 8 inner spots on the back side of the insulation board, ensuring it covers 40% of the surface area. (5 - 6 kg/m²)



Notched Trowel Method

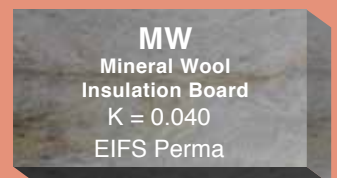
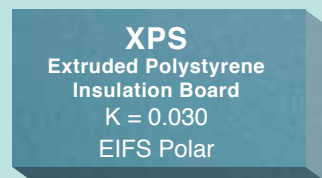
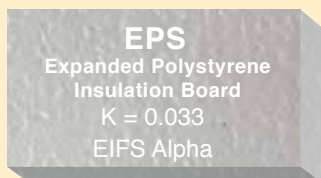
Apply Styrofix adhesive to the entire back surface of the insulation board using a notched trowel. (4 - 5 kg/m²)



Styrofix PU Foam Adhesive

A one-component, low pressure, polyurethane adhesive foam for fixing EPS / G-EPS / XPS insulation board to a substrate. It is also used for filling gaps between EPS / G-EPS / XPS insulation boards, between the window / door frame and the insulation board, and for fixing external window sills. It has excellent thermal insulation and adhesive properties, is easy to use, economical, odourless, lightweight and quick setting.

2. Insulation Boards



The appropriate insulation board and Terraco Exterior Insulation Finishing System should be chosen to suit the requirements and the project at hand as described earlier.

In order to determine the thickness of the insulation material chosen, the architect needs to know which U-Value is desired for the building. A U-Value is a measure of energy loss in a building element such as a wall, floor or roof. The higher the U-Value the worse the thermal performance of the building envelope. Likewise, a low U-Value usually indicates high levels of insulation.

Note: Be sure to use fire retardant boards that comply with applicable national regulations.

To determine the U-Value of a building element, e.g. a wall, the architect needs to know the different elements and thicknesses that make up that wall. Each element in that wall has a certain thermal resistance (R-Value) which is derived from that material's thermal conductivity (K-Value) and its thickness (d).

This data is then entered into the following formula: $R\text{-Value} = (1/K) \times d$

These Thermal Resistance (R-Value) values then need to be added up to give you the combined U-Value of that wall.

Thermal transmittance (U-Value) = $\sum \{1/R\text{-Value}\}$

There is a simple rule. The higher the K-Value, the higher the U-Value, and vice versa. Therefore an insulation board with a lower K-Value can be applied in a lower thickness to achieve the same U-Value as a board which has a slightly higher K-Value.

Please see the table below for an overview.

Thermal performance of insulation boards

| Insulation Board | Board Thickness (mm) | Thermal Conductivity* K-Value [W/(m.K)] | Thermal Resistance R-Value [(m ² .K)/W] | Thermal Transmittance U-Value [W/(m ² .K)] |
|------------------|----------------------|---|--|---|
| EPS | 50 | 0.033 | 1.52 | 0.66 |
| | 100 | | 3.03 | 0.33 |
| | 150 | | 4.55 | 0.22 |
| | 200 | | 6.06 | 0.17 |
| Graphite | 50 | 0.030 | 1.67 | 0.60 |
| | 100 | | 3.33 | 0.30 |
| | 150 | | 5.00 | 0.20 |
| | 200 | | 6.67 | 0.15 |
| XPS | 50 | 0.030 | 1.67 | 0.60 |
| | 100 | | 3.33 | 0.30 |
| | 150 | | 5.00 | 0.20 |
| | 200 | | 6.67 | 0.15 |
| MW | 50 | 0.040 | 1.25 | 0.80 |
| | 100 | | 2.50 | 0.40 |
| | 150 | | 3.75 | 0.27 |
| | 200 | | 5.00 | 0.20 |

Calculations:
 K-Value: Constant
 R-Value: Board Thickness (m) / K-Value
 U-Value: $\sum \{1/R\text{-Value}\}$

* K-Values are indicative and will vary depending on insulation board density and specification.

3. Mechanical Fasteners

Terraco provides a range of mechanical fasteners, sometimes referred to in the industry as dowels, anchors or fixings. There are numerous types of plastic and steel pin dowels, of varying lengths, for use on different types of substrates, masonry, wood, steel, cement fibre board, etc.



Fastener with Steel Expansion Pin



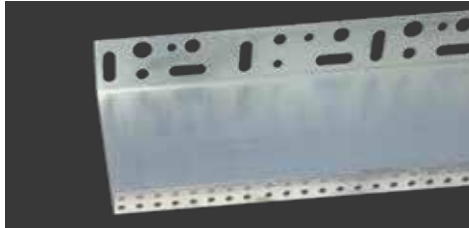
Fastener with Plastic Expansion Pin



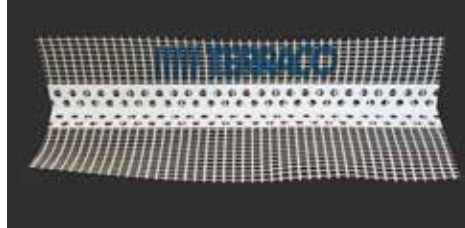
Fastener for Aerated Lightweight Concrete (ALC)

4. System Profiles

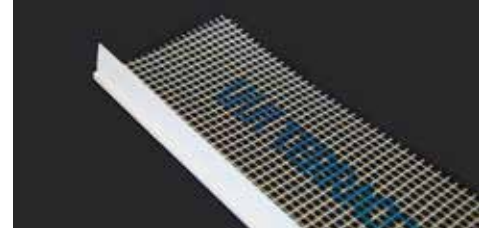
Terraco EIFS uses various accessories which are embedded into the basecoat.



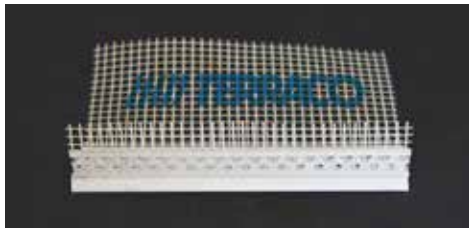
Starter Base Profile



PVC Corner Bead with Mesh



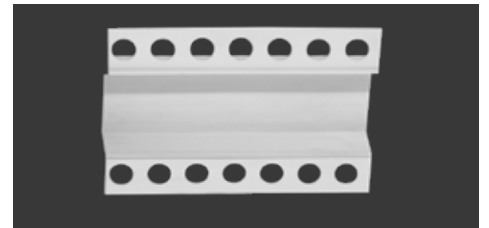
Window Reveal Bead



Drip Nose Bead



Movement Bead



Groove Bead

5. Styrobond (Basecoat)

Terraco **Styrobond DP** is a basecoat in the Terraco EIFS System. It provides an excellent basecoat for embedding Terramesh glass fibre mesh on top of which the primer and EIFS finishing coat are applied. It can also be used in place of Styrofix as an adhesive.

- Water resistant
- Excellent adhesion
- Good flexural strength
- Good impact resistance
- Easy to use

MIXING

Mix Styrobond DP on site with clean water in the ratio of approximately 4 parts Styrobond DP to 1 part water by weight, using a high speed mixer for 3 - 5 minutes. Allow the material to stand for 5 minutes, remix and use. Mix only enough material for immediate use.

APPLICATION

Apply a coat of Styrobond DP to the insulation board using a stainless steel trowel at a thickness of 1.5 - 2.0mm and immediately embed the Terramesh into the surface by trowelling outwards from the centre to avoid any wrinkles. All edges of the Terramesh must overlap by a minimum of 10cm at all edges. When set (but still plastic), apply a final coat of Styrobond DP to achieve an overall thickness of 3 - 5mm. Styrobond DP should be allowed to cure for 72 hours before applying the primer and decorative finish.

When used as an adhesive, apply to the insulation board and press into place using a spirit level. Do not allow the adhesive to form a skin before fixing into place.



Adhesive Basecoat



Embedding Glass Fibre Mesh



Terraco offers several varieties of Terraco Styrobond basecoats, ready-mix and dry-powder versions, each to meet different requirements.

Styrobond

A ready-mixed acrylic paste mixed with cement on site (ratio 1:1) and thereafter used as a dual purpose insulation board adhesive and basecoat.



Styrobond DP

A polymer-modified dry-mix embedding mortar applied over EPS / G-EPS (Expanded Polystyrene), XPS (Extruded Polystyrene) or MW (Mineral Wool) panels in which to embed the glass fibre mesh prior to application of finish coats.



Styrobond DP FM

A fibre enhanced polymer-modified basecoat specially designed to be applied directly onto profiled EPS / G-EPS and XPS, such as decorative cornices, where it is not possible to embed a glass fibre mesh sheet.



Styrobond DP HB

For Insulated Concrete Form (ICF) construction where a higher thicknesses is required, this specially formulated dry mix embedding mortar is applied over EPS / G-EPS and XPS to embed the glass fibre mesh.



| | Styrofix | Styrobond DP |
|--------------------------------|---|---|
| Product | Adhesive between substrate and insulation board | EIFS basecoat |
| Composition | Mixture of cement minerals, organic binders and additives | Mixture of cement minerals, organic binders and additives |
| Appearance | Fine grey powder | Fine powder |
| Mixing Ratio | By weight: 4:1 with water | By weight: 4:1 with water |
| Density of Paste (sg) | 1.7 | 1.7 |
| Pot Life | 3 hours at 25°C | 3 hours at 25°C |
| Colours | Grey | Grey / White |
| Adhesion to Concrete | ≥ 0.25 Mpa ETAG 004 EN 1542 | ≥ 0.25 Mpa ETAG 004 EN 1542 |
| Adhesion to Polystyrene | ≥ 0.08 Mpa ETAG 004 EN 13494 | ≥ 0.08 Mpa ETAG 004 EN 13494 |
| Flexural Strength | ≥ 3.5 N / mm ² | ≥ 3.5 N / mm ² |
| Compression Strength | ≥ 15 N / mm ² | ≥ 15 N / mm ² |
| Material Consumption | 1.7 kg/m ² /mm thickness | 1.7 kg/m ² /mm thickness |
| Packaging | 25 kg paper bags | 25 kg paper bags |

6. Glass Fibre Mesh

Terraco **Terramesh** is used as a reinforcing mesh to enable the EIFS to withstand up to 10 joules of impact. This is equivalent to dropping a 1 kilogram steel sphere from a height of 1 metre without cracking the surface.

Terramesh is embedded into fresh Styrobond DP basecoat. It is also recommended to:

- Use Terramesh to reinforce corners of all openings such as doors, windows, and recessed features by applying a second layer of mesh diagonally.
- Apply a second coat of Terramesh and Styrobond DP basecoat to surfaces exposed to high traffic to increase the impact resistance of the system.



| Technical Properties | |
|-------------------------|---|
| Product | Terramesh - Glass Fibre Mesh E Glass |
| Weave | Leno |
| Mesh Spacing | 4.0 x 4.0mm |
| Standard Width | 1000mm ±10mm |
| Standard Length | 50m |
| Finished Product Weight | 160 g/m ² ±10 g/m ² DIN 53854 |
| Tensile Strength | ≥ 2000 N/5cm DIN EN ISO 13934-1 |
| Elongation | ≤ 3.9 DIN EN ISO 13934-1 |
| Tear Resistance | ≥ 50% (after 28 days conditioning in 5% solution of sodium hydroxide) |
| Alkali Resistance | High |

The Terramesh is embedded into fresh Styrobond DP basecoat, applied at a thickness of 1.5 - 2.5mm, overlapping 10cm at all edges, and allowed to set. Once cured, and the rest of the System Components (window trims, etc.) have been installed, a final coat of Styrobond DP basecoat is applied to achieve an overall thickness of 3 - 5mm. Styrobond DP should be allowed to cure for 72 hours before applying the primer and decorative finish.

7. Primers

Terraco offers a comprehensive range of primers for use in the Terraco EIFS System.

Terraco P Primer Clear

An acrylic penetrating primer with excellent adhesion promoting properties.



Terraco P Primer Pigmented / White (Also known as Terraco Tex Primer)

A pigmented penetrating primer tinted to the same shade as the decorative finish.



Terraco P Primer Textured (Also known as Terraco Tex Primer Aggregated)

A pigmented aggregated primer for extra grip when applying trowel-on renders.



Silprime

A breathable primer used when applying silicone resin based products such as Terracoat Sil.



8. Decorative Finishes

Terraco offers an extensive range of protective and decorative architectural coatings with which to finish and decorate Terraco EIFS. These products incorporate the latest technology in acrylic, silicone and elastomeric resins and are designed to outlast conventional paint systems and to protect the building and EIFS under a variety of harsh conditions. Terraco EIFS has been tried and tested in searing desert heat, hot humid tropical climates and arctic winters.

These premium quality decorative coatings, which have been specifically formulated for use in Terraco EIFS, are tough and durable, UV and algae resistant, offer outstanding flexibility and when required can enable the substrate to breathe. Formulated to last, these products are the specifiers' preferred choice, offering long-life and value. These products are backed by Terraco's International Guarantee.

8.1. Terracoat Textured Coatings

An extensive range of premium quality, ready-mixed, acrylic textured coatings which are available in three grades; acrylic, silicon or elastomeric based - **Terracoat**, **Terracoat Sil** and **Terracoat Flex**.



8.1.1. Terracoat – Acrylic Based

This is a range of acrylic textured coatings offering the following benefits:

- As they are high build by design and matt by nature, they are recommended for EIFS as they minimise substrate imperfections.
- They provide a unique combination of an architectural finish and surface durability as they are full bodied colour, textured products, and therefore minor scratches and abrasions are not evident.
- Terracoat provides optimum impact resistance at 1.5mm to 3.0mm in actual coating thickness. As a protective long-life coating, it not only extends the life of Terraco EIFS, but also the substrate of the building it is protecting.
- They offer superior resistance to algae / fungal growth, and are more durable than conventional paint systems.

Terracoat Excel

A trowel applied texture giving an alpine scratch finish in several grain sizes.



Terracoat Granule

A trowel or spray applied textured coating creating a granular finish in a variety of grain sizes.



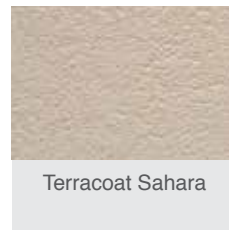
Terracoat Granule Filled

A trowel or spray applied coating using a combination of aggregates to create the illusion of texture while not appearing to be porous.



Terracoat Sahara

A trowel or spray applied coating creating a gentle sand textured finish to provide a fuller bodied appearance.



| Type of product | Terracoat Excel 2mm | Terracoat Excel 3mm | Terracoat Granule 1mm | Terracoat Granule 2mm | Terracoat Granule Filled | Terracoat Sahara 2mm |
|----------------------------------|---------------------|---------------------|-----------------------|-----------------------|--------------------------|----------------------|
| Consumption (kg/m ²) | 2.5 - 3.0 | 3.5 - 4.5 | 2.5 - 3.0 | 3.5 - 4.5 | 2.5 - 3.5 | 3.5 - 4.5 |
| Application | Trowel | Trowel | Trowel / Spray | Trowel / Spray | Trowel / Spray | Trowel / Spray |

8.1.2. Terracoat Sil – Silicone Based

This range of acrylic silicone resin based, textured coatings, known as Terracoat Sil, offers the following benefits:

- Characterised by their outstanding water repellent properties, and therefore resistance to dirt pick-up, they keep the building pristine for longer.
- High build matt products, which not only mask substrate imperfection, but are extremely weather resistant in freezing climates providing excellent vapour permeability, allowing the substrate to breathe (when used with MW insulation).

Terracoat Sil Excel

A trowel applied texture giving an alpine scratch finish in several grain sizes.



Terracoat Sil Excel
2mm - Vertical Pattern



Terracoat Sil Excel
2mm - Random Pattern



Terracoat Sil Excel
2mm - Cross-hatch
Pattern

Terracoat Sil Granule Filled

A trowel or spray applied coating using a combination of aggregates to create the illusion of texture while not appearing to be porous.



Terracoat Sil Granule
Filled

Terracoat Sil Granule

A trowel or spray applied textured coating creating a granular finish in a range of grain sizes.



Terracoat Sil Granule
1mm



Terracoat Sil Granule
2mm

Terracoat Sil Sahara

A trowel or spray applied coating creating a gentle sand textured finish to provide a fuller bodied appearance.



Terracoat Sil Sahara

| Type of product | Terracoat Sil Excel 2mm | Terracoat Sil Excel 3mm | Terracoat Sil Granule 1mm | Terracoat Sil Granule 2mm | Terracoat Sil Granule Filled | Terracoat Sil Sahara 2mm |
|----------------------------------|-------------------------|-------------------------|---------------------------|---------------------------|------------------------------|--------------------------|
| Consumption (kg/m ²) | 2.5 - 3.0 | 3.5 - 4.5 | 2.5 - 3.0 | 3.5 - 4.5 | 2.5 - 3.5 | 3.5 - 4.5 |
| Application | Trowel | Trowel | Trowel / Spray | Trowel / Spray | Trowel / Spray | Trowel / Spray |

8.1.3. Terracoat Flex – Elastomeric Based

Incorporating elastomeric resins, this range of ready-mixed coatings, known as Terracoat Flex, offers the following benefits:

- It is designed to provide highly flexible architectural wall coatings, which can easily handle most substrate movements or extreme fluctuations in surface temperatures.
- A flexible, high build, matt coating, which offers optimal impact resistance, algae and fungi resistance.

Terracoat Flex Granule

A trowel or spray applied textured coating creating a granular finish in a variety of grain sizes.



Terracoat
Flex Granule 1mm



Terracoat
Flex Granule 2mm

Terracoat Flex Granule Filled

A trowel or spray applied coating using a combination of aggregates to create the illusion of texture while not appearing to be porous.



Terracoat
Flex Granule Filled

| Type of product | Terracoat Flex Granule 1mm | Terracoat Flex Granule 2mm | Terracoat Flex Granule Filled |
|----------------------------------|----------------------------|----------------------------|-------------------------------|
| Consumption (kg/m ²) | 2.5 - 3.0 | 3.5 - 4.5 | 2.5 - 3.5 |
| Application | Trowel / Spray | Trowel / Spray | Trowel / Spray |

8.2. Terralite Stone Coatings

Terralite is a comprehensive range of lightweight stone effect coatings, dispersed in clear binders. When cured, these aggregates dry to a clear film leaving the stone colours to create the appearance of a stone clad facade. This range also includes manually and mechanically applied stone finishes cast in situ.

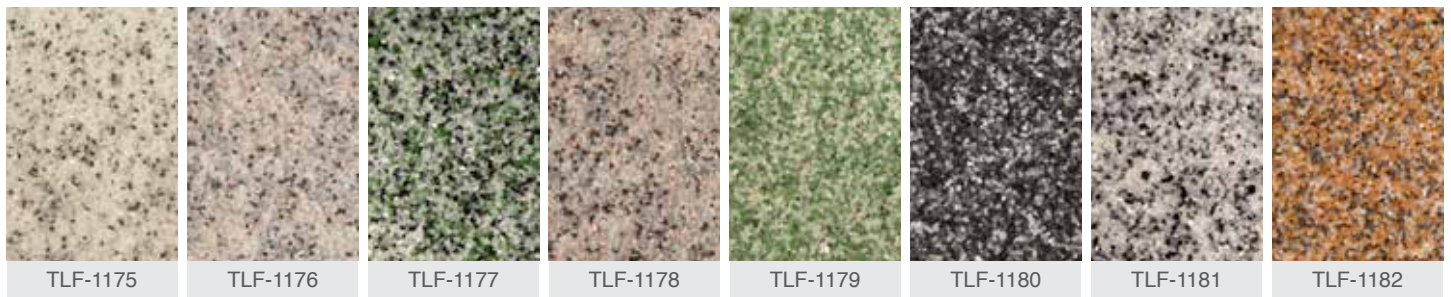


The features of these products are:

- The use of natural granite and / or marble aggregate.
- Once cured, they are highly weather resistant, washable, impact- and abrasion-resistant.
- As an exterior coating it provides excellent substrate protection, is vapour permeable, with high resistance to chemical and marine corrosion (salt laden air) and fading.
- Available for application in a variety of natural, multi-colour finishes.

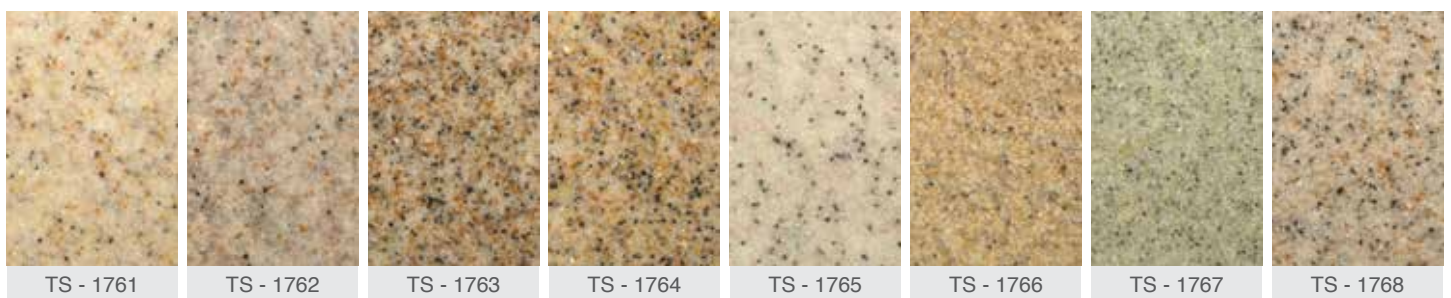
Terralite Fine

Trowel applied to a maximum film thickness of 2mm resulting in a fine textured surface, similar to 'dressed granite'.



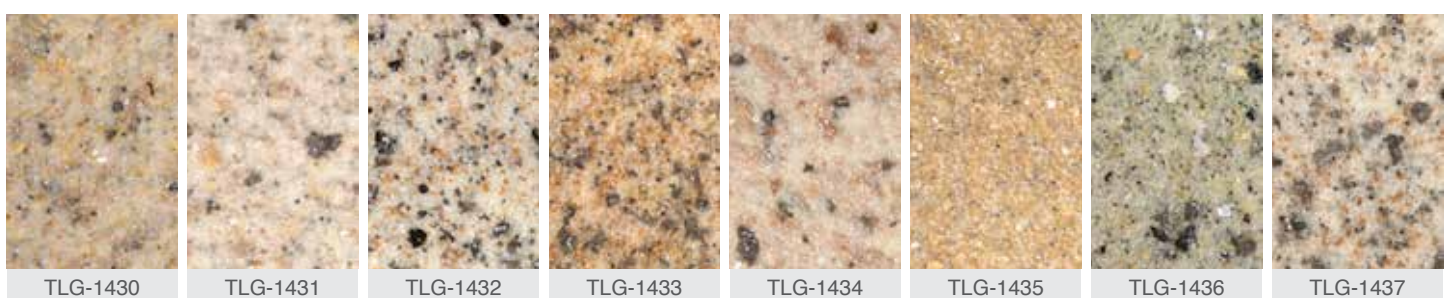
Terralite Stone (previously Terracoat Stone)

A spray applied product, to a maximum film thickness of 2mm, consisting of a combination of various grades of fine aggregates to create a 'hammer tone' appearance.



Terralite Granite

A spray applied product to achieve a thin layer of 3mm giving a realistic simulated granite effect with larger flecks.



Terralite Dash

A graded aggregate which is cast mechanically or manually and embedded in a backing plaster to achieve an extremely durable and attractive coating with a natural stone appearance.



| Type of product | Terralite Fine (1mm) | Terralite Fine (1.5mm) | Terralite Stone | Terralite Granite | Terralite Dash (2mm) |
|--|----------------------|------------------------|-----------------|-------------------|----------------------|
| Consumption (kg/m ²) | 2.5 - 3.5 | 5.0 - 5.5 | 2.5 - 3.5 | 2.5 - 3.5 | 8.0 - 9.0 |
| Terralite Undercoat (kg/m ²) | 0.2 - 0.3 | 0.2 - 0.3 | 0.2 - 0.3 | 0.2 - 0.3 | N/A |
| Application | Trowel | Trowel | Spray | Spray | Trowel / Cast |

Terralite Artstone*

Using highly technically advanced production methods, this product is a pure acrylic water-in-water multi-colour coating which simulates the look of a granite clad building.

Terralite Artstone's multi-layered system is applied to the Styrobond Basecoat and consists of an evenly applied coat of Terralite Artstone Basecoat texturing compound, which is then overcoated with Terralite Undercoat and finished with Terralite Artstone Multicolour.

| Type of product | Terralite Artstone Basecoat | Terralite Artstone Undercoat | Terralite Artstone Multicolour |
|----------------------------------|-----------------------------|------------------------------|--------------------------------|
| Consumption (kg/m ²) | 2.0 - 3.0 | 0.3 - 0.4 | 0.3 - 0.5 |
| Application | Spray | Roller / Spray | Spray |

*Note: This product is available in South Korea and China only.



ART-01



ART-02



ART-03



ART-04



ART-05



ART-06



ART-07



ART-08



ART-09



ART-10



ART-11



ART-12



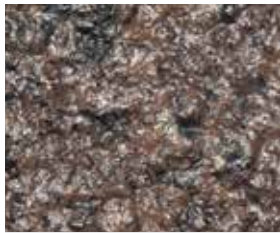
ART-13



ART-14



ART-15



ART-16



ART-17



ART-18



ART-19



ART-20

8.3. Terol Mineral Based Renders

Terol is a range of polymer modified mineral renders designed for the finishing of EIFS substrates. Traditionally Terol, as a decorative finish, is available in the grades: Terol Decor, Terol Granule, and Terol Sahara. These are typically produced in a white colour and topcoated with Terracoat Stain to achieve the required colour.

New coloured additions to the Terol range are Terol Ultra and Terol Mono. These are revolutionary products that enable faster application as well as allowing for finishing to be completed in adverse weather conditions. Terraco leads the way in developing new innovative products with the introduction of these new finishing systems.

MIXING

Mix Terol on site with clean water in the ratio of approximately 4 parts Terol to 1 part water by weight, mixing with a high speed mixer for 3 - 5 minutes. Allow the material to stand for 5 minutes, remix and use. Mix only enough material for immediate use.

APPLICATION

To create a uniform finish ensure that the water content and mixing time are consistent. Prepared material should be used within 1 hour of mixing.

Terol Ultra

This product can be applied during the day at low temperatures without having to worry about wash-outs and night-time sub-zero temperatures. It is designed for application even at low temperatures (4°C to 6°C) and high humidity conditions, in which other ready-mixed renders will not perform because they need extended drying times. Terol Ultra has a controlled setting time to ensure early rain resistance and to avoid problems associated with wash-out. Terol Ultra is available in a selected range of fade resistant shades. Apply Terol Ultra by trowel to achieve a thickness of 2 - 3mm. Clean tools and equipment with water after use.



Terol Mono

This product is a one-product finishing system for Terraco EIFS. It replaces the basecoat, primer and decorative finish and allows for all "above-EPS" work to be done on the same day. Terol Mono is a unique finishing system which can be either a monocouche finish, dry dash finish or a spray finish. It is a fully pigmented, polymer modified and set-controlled render. It has excellent dirt pick-up resistance and is extremely stable against UV light even in severe climatic conditions. It can either be applied manually or by machine and is available in a range of standard colours. Terol Mono is ideal for use on small fast track projects.



Terol Mono is designed as a one-product finishing system:

- | | |
|------------------|---|
| Embedding Mortar | Apply a coat of Terol Mono direct to EPS surface and use a notch trowel to ensure application is even at 5 - 6 kg/m ² . Immediately embed the mesh and trowel into surface. |
| Finishing | Allow material to set for 2 - 4 hours and apply the finishing coat at 7 - 8 kg/m ² by steel trowel. Bring the surface to a reasonable level and finish according to the desired pattern. |

Terol Mono offers the following choice of finishes:

- | | |
|-------------------|---|
| Monocouche finish | Allow to set-up for 2 - 4 hours and use a scratch-trowel to remove the top layer of material to create a classic monocouche finish. |
| Dry Dash Finish | Once the Terol Mono surface is level, apply decorative stone to the surface by spray or by hand at a rate of 5 - 6 kg/m ² to create a classic dry dash finish. |
| Spray Finish | Apply a fine spray coat of Terol Mono by hopper gun to create a spray finish pattern. Allow the surface to cure overnight. |

Terol Decor

Apply Terol Decor using a stainless steel trowel and finish using a plastic trowel to create an alpine scratch finish. Then apply Terracoat Stain in the colour of choice.



Terol Granule

Apply Terol Granule by trowel to a level granular finish. Then apply Terracoat Stain in the colour of choice. Terol Granule is available in various grain sizes.



Terol Sahara

Apply Terol Sahara 2mm by trowel to create a fine textured random pattern to a level granular finish. Then apply Terracoat Stain in the colour of choice.



| Type of product | Terol Ultra 2mm | Terol Mono (Std Finish) | Terol Decor 1.5mm | Terol Decor 2mm | Terol Granule 1mm | Terol Granule 1.5mm | Terol Granule 2mm | Terol Sahara 2mm |
|----------------------------------|-----------------|-------------------------|-------------------|-----------------|-------------------|---------------------|-------------------|------------------|
| Consumption (kg/m ²) | 3.0 - 4.0 | 12.0 - 14.0 | 3.0 - 3.5 | 3.5 - 4.5 | 2.5 - 3.0 | 3.0 - 3.5 | 3.5 - 4.5 | 3.5 - 4.5 |
| Application | Trowel | Trowel | Trowel | Trowel | Trowel | Trowel | Trowel | Trowel |

9. Topcoats

When enhanced dirt pick-up resistance is required, Terraco has the perfect solution in its range of specifically formulated topcoats to ensure enhanced long life finishes.

Terracoat Stain

A ready-mixed, elastomeric pigmented coating, especially designed for application as a topcoat for cementitious acrylic based textured coatings used in Terraco EIFS, such as Terol.

It has excellent dirt pick-up resistance and is designed for use in areas where atmospheric pollution is a problem.

Terracoat stain is a low profile coating imparting colour to the surface with minimum film build, thereby retaining the original texture of the Terracoat textured coatings.



Kode 10

This is a new generation clear topcoat to enhance the dirt pick-up resistance of exterior wall coating systems. It is ideal for use as a topcoat for organic-mineral renders such as Terracoat and Terralite.

Kode 10 is a film forming coating with excellent durability due to its outstanding hydrophobicity. This prevents the ingress of waterborne contaminants which cause discolouration and limit the life of such renders. Kode 10 is based on a novel fluoro-acrylic polymer which ensures excellent dirt pick-up resistance without any of the side effects of conventional hydrophobic treatments.



Quick guide to the Terraco EIFS Components

Note: A generic guideline, please contact your nearest Terraco representative for detailed specifications.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--|----------|--------------------|----------------------|-----------------|----------|------------------|--------|----------------|----------|
| | Adhesive | Insulation Board | Mechanical Fasteners | System Profiles | Basecoat | Glass Fibre Mesh | Primer | Finishing Coat | Topcoats |
| | | EPS | | | | | | | |
| | | G-EPS | | | | | | | |
| | | XPS | | | | | | | |
| | | EPS / G-EPS Blocks | | | | | | | |
| | | MW | | | | | | | |

Which Decorative Finish do I use?

| Decorative Finish | | Alpha | Polar | Perma | Zenith | |
|-------------------------------|--------------------|------------------------------|-------|-------|--------|---|
| | Acrylic Based | Terracoat Excel | X | X | | X |
| | | Terracoat Granule | X | X | | X |
| | | Terracoat Granule Filled | X | X | | X |
| | | Terracoat Sahara | X | X | | X |
| | Silicone Based | Terracoat Sil Excel | X | X | X | X |
| | | Terracoat Sil Granule | X | X | X | X |
| | | Terracoat Sil Granule Filled | X | X | X | X |
| | | Terracoat Sil Sahara | X | X | X | X |
| | Elastomeric Based | Terracoat Flex Granule | X | X | | X |
| Terracoat Flex Granule Filled | | X | X | | X | |
| | Terralite Fine | X | X | | X | |
| | Terralite Stone | X | X | | X | |
| | Terralite Granite | X | X | | X | |
| | Terralite Dash | X | X | | X | |
| | Terralite Artstone | X | X | | X | |
| | Terol Ultra | X | X | X | | |
| | Terol Mono | X | X | | | |
| | Terol Decor | X | X | X | | |
| | Terol Granule | X | X | X | | |
| | Terol Sahara | X | X | X | | |

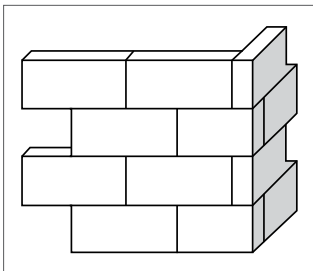
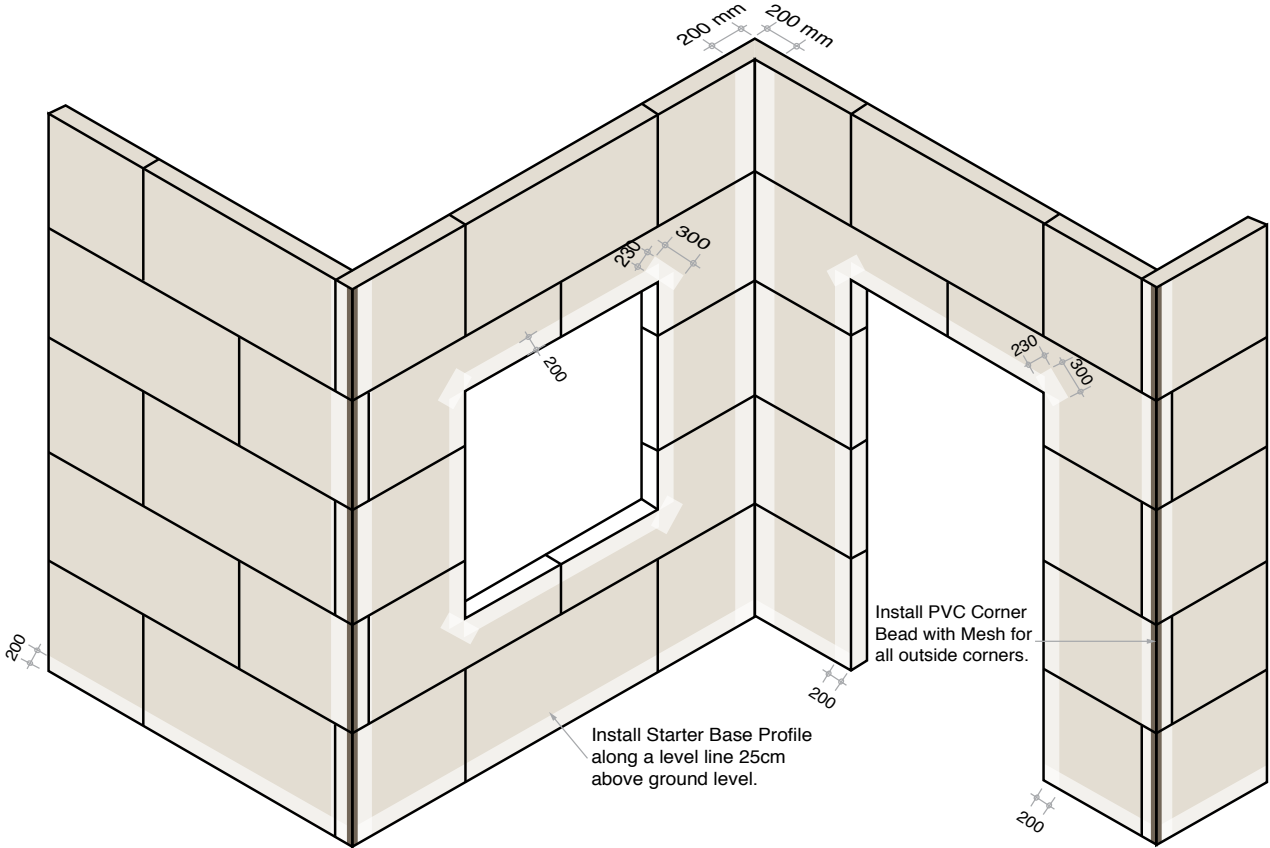
Application Guide





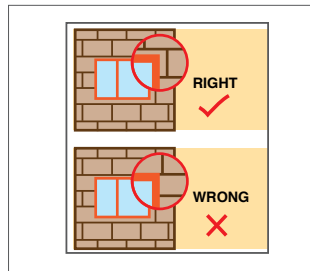
INSTALLING INSULATION BOARDS

- Install boards horizontally, staggering the boards and overlapping substrate joints.
- Insulation boards are typically 60cm H x 120cm L, while the width is determined by the required U-Value.
- Ensure entire surface of the insulation boards is level prior to the application of the Styrobond Basecoat and Terramesh.



Corners

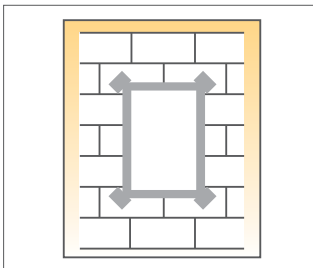
At all outside and inside corners always interlock or stagger the insulation board. Plumb all outside corners.



Openings

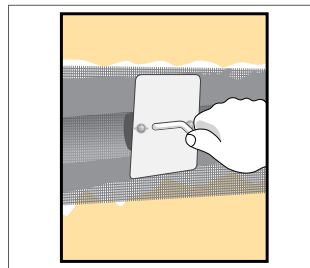
Insulation board joints should never align with openings such as windows or doors.

Off-set insulation board joints 200mm or more from the corners of openings. The insulation material around windows must be cut from one piece.



Reinforcing

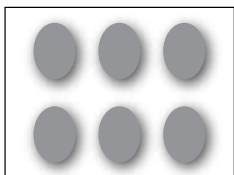
Reinforce corners of all openings by applying a second layer of mesh patches 250 x 300mm diagonally above / below each corner.



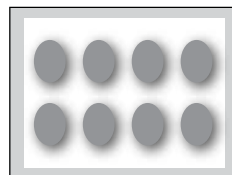
Groove

To mesh a groove or reveal, apply a primary layer of basecoat into the groove and over an area wide enough to embed the width of the mesh on either side.

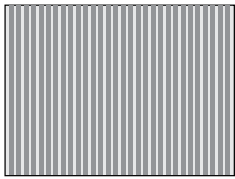
ADHESIVE APPLIED TO INSULATION BOARD



Spot Method - Used for fast track systems on new work and on uneven substrates at 4 - 5 kg/m². Spot diameter 20cm x 1 cm height. Apply Styrofix adhesive as 6 spots on the back side of the insulation board, ensuring it covers 40% of the surface area. Board size: 60cm (H) x 120cm (L).



Ribbon & Dab Method - Total 5 - 6 kg/m². Ribbon: 3kg/board (ribbon width 5cm). Dab: 0.14kg/dab (dab diameter 10cm). Apply Styrofix adhesive to the external edges and to 8 inner spots on the back side of the insulation board, ensuring it covers 40% of the surface area. Board size: 60cm (H) x 120 cm (L).



Notched Trowel Method - 4 - 5 kg/m² (notch width 1cm, space 4cm) used on even substrates. Apply Styrofix adhesive to the entire back surface of the insulation board using a notched trowel.

MECHANICAL FASTENER / DOWEL INSTALLATION

Contact your Terraco representative for advice on project specific requirements.

| Application Height - H (m) | 0 ≤ H ≤ 8 | | 8 < H ≤ 20 | | H > 20 | |
|----------------------------|-----------|---------|------------|---------|--------|---------|
| | EDGE | SURFACE | EDGE | SURFACE | EDGE | SURFACE |
| Pcs/m ² | 6 | 6 | 8 | 6 | 10 | 6 |
| Dowel Placement Scheme | | | | | | |

EIFS INSTALLATION

STEP 1

STARTER BASE PROFILE



- Install level line above ground level.
- Use corrosion resistant screws / fasteners.

STEP 2

INSULATION BOARDS



- Apply Terraco Styrofix adhesive using notched trowel or spot method.
- Install boards horizontally, staggering boards. Overlap at substrate joints.

STEP 3

MECHANICAL FASTENERS



- Insert once Styrofix adhesive is fully cured.
- Install sufficient fasteners per m² depending on building height.

STEP 4

REINFORCING MESH



- Apply even layer of Styrobond DP ± 1.5-2.0 mm
- Cut mesh to workable lengths and embed into Styrobond DP basecoat. Ensure minimum 10 cm overlap and reinforce corners.
- Apply 2nd coat of Styrobond DP to achieve overall thickness of 3-5 mm.

STEP 5

PRIMER



- Styrobond DP basecoat must have cured a minimum of 72 hours before applying the primer.

STEP 6

DECORATIVE FINISH



- A wide range of textures, colours and finishes is available.
- A clear topcoat (Terracoat Stain or Kode 10) may be required / recommended.



Sun Marina Apartments - Sochi, Russia



Future School - Al Ain, U.A.E.



Hurrun - City 24, China



Atlantis Hotel & Resort - Palm Island, Dubai, U.A.E.



Residential apartments - Segok-dong, Gangnam-gu, South Korea



European Housing Complex - Istanbul, Turkey



Sprayplaster
Rendering Systems



Ready-Mixed Levellers &
Fillers



Designer Collection



Performance Tiling -
Adhesives & Grouts



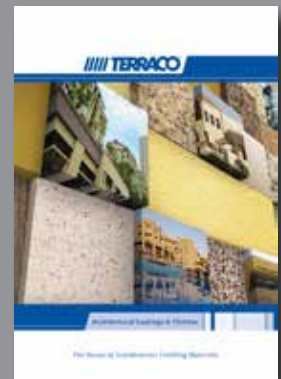
General Purpose Tiling -
Adhesives & Grouts



Waterproofing
Systems



Epoxy Flooring - Epirok



Architectural Coatings &
Finishes



Ambient Acoustic System



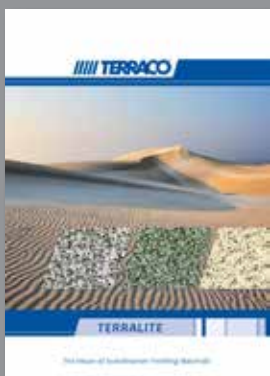
Emulsion Paints



Terracoat BT



Terracoat Textured
Coatings



Terralite Fine



Terralite Stone



Terralite Granite



Monocote



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Application procedures shown are for demonstration purposes only. Please consult your nearest Terraco representative for assistance with specification and application methods. Qualified applicators are required to install the system. Technical Data Sheets and Material Safety Data Sheets are available from your Terraco representative or on www.terraco.com. Although every precaution has been taken to ensure the accuracy of the colours and textures represented herein they should be considered indicative. Products containing natural aggregates may be susceptible to colour variation and we recommend that you order sufficient quantity for the complete project at one time. Terraco does not warrant the accuracy of the information provided herein and all information is subject to change without notice.

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