

sto®



| Exterior | Wall Cladding | EIFS |



## StoTherm® EIFS: Installation Guide

*Sto is the innovative world leader in cladding, coating and restoration systems. Sto was an Exterior Insulation and Finish Systems pioneer - introducing StoTherm® to Europe in 1963. Headquartered in Atlanta, Georgia, ISO 9001:2000 and 14001:2004 Certified Sto Corp., continues to lead the North American industry in innovation; providing the highest quality products and services to enhance our customers' projects. Our industry leading EIFS, Stucco, Coatings and Concrete Restoration products are manufactured in four plants located strategically across North America to serve over more than 200 distributor locations in the U.S. and Canada. We continue to revolutionize the industry with StoMachine Technology – a faster, more economic way to apply EIFS; StoDesign, consultative design and color services, and the Sto Institute, which trains building professionals in proper techniques to ensure lasting results. Application Technology... Design... Education, and the highest quality products make Sto the innovative world leader in cladding, coating and restoration systems.*

*Sto pioneered EIFS in Europe - 1963*

- *Products include: EIFS, Stucco, Coatings, Waterproof Air Barriers and Concrete Restoration*

*Headquartered in Atlanta*

- *ISO 9001:2000 and 14001:2004 Certified*
- *200+ Distributor locations*

*Revolutionizing the Industry!*

- *StoMachine Technology*
  - *StoSilo*
  - *Sto Continuous Mixer*
  - *Sto M-8 Spray Pump*
- *StoStudio*
- *Sto Institute*
- *StoTherm® NExT*
- *StoSilco® Silicone Emulsion Technology*
- *Optilink® Advanced Polymer Technology*
- *Lotusan® Lotus-Effect® Technology*

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Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to this product, and to the structure of the building or its components. **STO CORP. DISCLAIMS ALL WARRANTIES EXPRESSED OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME.** For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties and cautions and disclaimers, please refer to the StoCorp.website, [www.stocorp.com](http://www.stocorp.com).

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**The  
Exterior  
Insulation  
and Finish  
System  
(EIFS)**

# Introduction

A traditional EIFS, also known as a Class PB EIFS, is a non-load bearing exterior wall cladding consisting of:

1. Adhesive and/or mechanical attachment
2. Insulation board
3. Glass fiber reinforcing mesh
4. Base Coat
5. Finish Coat

Traditional EIFS offer many advantages in comparison to other claddings, including:

- Energy savings
- Excellent weather resistance
- Seamless wall covering
- Low installed cost
- Aesthetic versatility
- Low maintenance

Because it provides moisture protection at the outer plane of the wall a traditional EIFS is often called a barrier, or face seal, wall design. In combination with other components of construction - windows, flashings and sealants - it resists moisture penetration at the outermost surface of the wall.

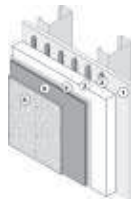
StoTherm NExT is the next generation of EIFS which adds a seamless waterproof air barrier behind the EIFS wall covering. StoTherm NExT provides all the same benefits of traditional EIFS, plus it provides:

- Secondary moisture protection
- Increased air infiltration/exfiltration resistance
- Drainage of incidental moisture in the event of a breach in the EIFS wall covering (much like a cavity wall design), when combined with starter track with weep holes and vertical ribbons of adhesive.



### **Traditional or Class PB EIFS**

1. Adhesive
2. Insulation Board
3. Reinforcing Mesh
4. Base Coat
5. Finish Coat



### **StoTherm® NExT: the Next Generation of EIFS**

1. Waterproof Air Barrier
2. Adhesive
3. Insulation board
4. Reinforcing mesh
5. Base coat
6. Finish coat

*Important Note: EIFS require building code evaluation reports that recognize a particular system as an equivalent to the materials/methods of construction prescribed in the code. Most StoTherm EIFS have model building code recognition. Often these reports are required for issuance of a building permit or to comply with architectural specifications.*

As a manufacturer of high quality, technologically advanced products, Sto wishes to provide you with as much information as possible to ensure that you, the professional installer, achieve a successful, high quality installation. This installation handbook presents in a brief form the essential guidelines and information you need to install StoTherm Classic, Essence, and Lotusan and StoTherm NExT Systems. This handbook was compiled with expert input from Sto Technical Personnel and from experienced applicators in the U.S.

As we at Sto commit ourselves to manufacturing superior quality products and to innovating and introducing new technologies and products, we value and rely on your experience in the field. We hope that you will continue to share it with us. If you have any suggestions, please contact Sto at our headquarters in Atlanta, Georgia.

## **Project Preparation**

Completing the following tasks before beginning installation can help save you time and speed production.

- Set up correct scaffolding the day before you want to work on it. Much time is lost when workers wait for scaffolding or work on inadequate scaffolding. Make sure scaffolding is erected in accordance with OSHA safety regulations.
- Protect necessary areas using masking tape and/or plastic coverings BEFORE you start working. Sto materials, which are designed to stick, cannot be cleaned off easily after they have dried.
- Make sure the correct materials are on the job and properly stored.
- Follow the StoTherm EIFS Installation Inspection Checklist at the back of this book to verify conformance of work to installation requirements.

## **Material Storage and Handling**

- Pail Products: store and apply all pail products above 40°F (4°C). Store out of sunlight. Do not apply to frozen surfaces.
- Bag Products: store all bag products off the ground in a cool, dry location.
- Do not apply materials to frozen surfaces.
- Sto EPS Insulation Board: store flat (not on edge) in a dry area and protect from sunlight.

## Substrates

StoTherm EIFS may be installed over the following substrates:

### Sheathing:

- Glass mat faced gypsum sheathing in compliance with ASTM C1177
- Water-resistant exterior fiber-reinforced gypsum sheathing panels in compliance with ASTM C1278
- Gypsum sheathing in compliance with ASTM C79
- Exterior or exposure 1 wood - based sheathing - plywood and OSB (Oriented Strand Board)
- Sound, prepared masonry, concrete or Portland cement plaster/ stucco

All sheathing substrates listed above can be treated with StoGuard® - a liquid-applied waterproof air barrier, for added moisture protection and air infiltration resistance.

All sheathing substrates should be handled and installed in accordance with code requirements and manufacturer recommendations. Sheathing should be free from surface defects or moisture damage. Damaged sheathing should be replaced. Poured concrete must be free of form oil, curing compounds or release agents. A detergent wash, waterblasting or sandblasting is typically required to remove such surface contaminants. Other masonry surfaces - brick or concrete block - should be free of surface contamination such as efflorescence. Efflorescence is a white chalky deposit on the surface that is caused by moisture migration through the masonry. Generally wire brushing will remove efflorescence from masonry surfaces. Failure to properly prepare the substrate can result in delamination of the EIFS.

Mechanical attachment is discouraged because fasteners are thermal bridges to the exterior that defeat the purpose of exterior insulation. They can also "telegraph" through the finished wall surface as the EIFS ages and they may limit wind load resistance of the system. The only instance in which mechanical attachment is advised is when adhesion to the substrate is not possible or questionable, such as a painted substrate.

### StoGuard® Liquid Applied Waterproof Air Barrier

The StoGuard assembly is a liquid-applied system that creates a continuous, seamless waterproof air barrier beneath StoTherm EIF Systems as well as other claddings. Tough and durable, StoGuard will not tear like building wraps or paper and resists water penetration 5 times longer than leading brand building wraps and 28 times longer than conventional building paper.



The StoGuard assembly consists of:

**Sto Gold Fill®** – A flexible, trowel-applied joint treatment that, combined with StoGuardMesh or Sto Detail Mesh, bridges sheathing joints and protects rough openings for windows and doors, and building corners. Sto Gold Fill is applied to sheathing joints and a minimum of 4" (100 mm) wide StoGuard Mesh or Sto Detail Mesh is immediately embedded and troweled smooth.

**Sto Gold Coat®** – A ready-mixed flexible coating that is applied by roller directly to the wall sheathing and over sheathing joints filled with Sto Gold Fill. It may also be spray applied. Sto Gold Coat may be used over exterior gypsum Sheathing, Dens-Glass® Gold, Aqua Tough™, exterior or exposure 1 plywood and oriented strand board (OSB).

## Attachments

The most common way to attach the insulation on the building is with an adhesive. The most popular Sto adhesives are:

**1. Sto Dispersion Adhesive** – Ready-to-use adhesive with high strength and flexibility, used on most smooth, uniform surfaces. Most commonly used over gypsum sheathings or exterior grade wood-based sheathings. Ribbons of adhesive are applied with a 3/16" x 3/8" (5 x 9 mm) U-notched trowel. Not recommended over damp or irregular surfaces such as new concrete or masonry.

**2. Sto BTS® Plus** – A pre-blended adhesive mixed with 5-6.5 quarts (4.7-6.2 L) of clean water for each 47 lb. (21 Kg) bag. Ribbons of Sto BTS-Plus shall be applied to the insulation board using a 5/8" x 5/8" (16 x 16mm) square-notched or 1/2" x 1/2" (13 x 13mm) U-notched trowel. It is typically used over concrete, masonry, portland cement plaster, gypsum or cement sheathings.

**3. Sto Primer/Adhesive-B** – A one component polymer modified cement based adhesive. Mix with 5-6.5 quarts (4.7-6.2 L) of clean water for each 50 lb. (23kg) bag. Apply with a 1/2" x 1/2" (13 x 13 mm) U-notched trowel or 5/8" x 5/8" (16 x 16 mm) square-notched trowel. It is typically used over concrete, masonry, portland cement plaster, gypsum or cement sheathings.

**4. Sto Primer/Adhesive** – An acrylic-based adhesive that is mixed at the job-site with Portland cement and applied similar to Sto Primer/Adhesive-B.

**5. Sto BTS® Xtra** – A one-component, polymer-modified lightweight cement-based adhesive. Mix with 4.75-5 quarts (4.5-4.7 L) of clean water for each 38-lb (17-kg) bag. Apply ribbons of Sto BTS Xtra to the insulation board using a 1/2" x 1/2" (13 x 13 mm) U-notched trowel or a 5/8" x 5/8" (16 x 16 mm) square-notched trowel, depending on the substrate.

**6. Sto BTS® Silo** – A one-component, polymer-modified cement-based adhesive designed for use with StoSilo spray equipment over exterior gypsum sheathing, Dens Glass® Gold sheathing, exterior cementitious sheathing and masonry/concrete substrates.

*Note: when wood-based sheathings are protected with StoGuard, Sto BTS Plus, Sto BTS Xtra, Sto Primer/Adhesive, Sto Primer/Adhesive-B and Sto BTS Silo may be applied over the protected wood-based sheathings.*

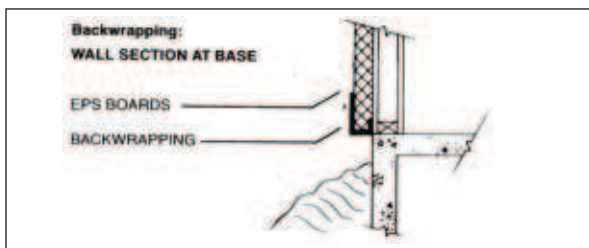
### Mechanical Fasteners

Sto does not generally recommend the use of mechanical fasteners, except when the substrate is incompatible with adhesive or its condition is questionable, such as painted substrates. As an added security some architects will specify mechanical attachment. When they are required, the mechanical fastener supplier should be consulted. A minimum 1-1/2" (38mm) insulation board is recommended with mechanical attachment.

*NOTE: Depending on climate, surface mount fasteners may "telegraph" through the finish because of surface irregularities and the "thermal bridging" effect of fasteners.*

### Backwrapping

Prior to applying the insulation boards to the wall, a strip of reinforcing mesh is adhered to the base of the substrate. This mesh will eventually wrap around the edge of the insulation. We refer to this procedure as "backwrapping."



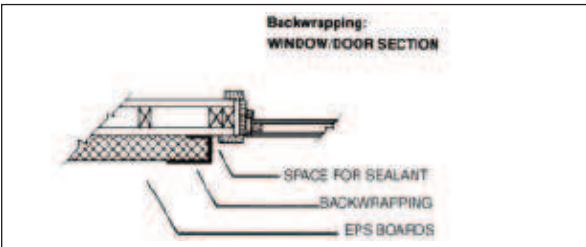
The two main purposes of backwrapping are:

1. To ensure the edges of insulation boards will be protected
2. To ensure the entire edge of the insulation system will be well adhered.

Note: Sto Detail Mesh, a flexible mesh that is pre-cut in 9" (229 mm) wide rolls is convenient for backwrapping and other detail work.

## Procedure

Using the proper adhesive and strips of Sto Mesh or Sto Detail Mesh, adhere approximately 4" (100 mm) of mesh to the base of the wall. Allow the remaining mesh to hang down; this will be "wrapped" around the insulation board at a later time with a minimum of 2-1/2" (64 mm) on the face of the board. Care should be taken to prevent the adhesive from collecting on the portion of mesh which will be used to wrap the insulation.



This "backwrapping" procedure must be used wherever the insulation system starts or stops, including the following:

- At the base of the system
- At transitions where the insulation board meets window and door frames
- At roofs
- At expansion joints
- At openings around meter or utility boxes, pipes, etc.
- At any other system termination

## Insulation Boards

The insulation boards used are Expanded Polystyrene or "EPS" boards. Various thicknesses are available. The minimum thickness allowable is 3/4" (19 mm). The maximum allowable thickness permitted by most building codes for most commercial construction is 4" (100 mm). The maximum size board allowable is 2' x 4' (610 mm x 1,219 mm).

### Expanded Polystyrene Quality Test:

Prior to applying, EPS boards should be checked to ensure they meet Sto Specifications. All EPS boards must be produced by a Sto licensed manufacturer and can be checked in the field as follows:

#### 1. Upon Delivery

- A. EPS boards are to be delivered in plastic bags labeled "Sto."
- B. Each bag should identify technical properties of the Sto Board.

- C. Each board should be clearly marked with the Sto Brand name and the manufacturer quality control number.
- D. All boards are to be wire cut (not cast formed) and the edges are to be square cut.
- E. Make sure the EPS boards have not been damaged in handling.

## 2. Random Sample Tests

- A. Proper bead fusion:  
Break a sample and examine beads; 80% of beads should be split. If beads are broken in round shapes, do not use boards.
- B. Proper Curing:
  - 1. Break and smell for pentane gas (smells like lighter fluid). If smell is present, do not use boards.
  - 2. Hold a match near broken insulation. If there is a blue flash flame, do not use boards.
- C. Proper treatment for fire retardant:  
Test burn a sample. When the flame is removed, the insulation board should not continue to burn.

## 3. Storage

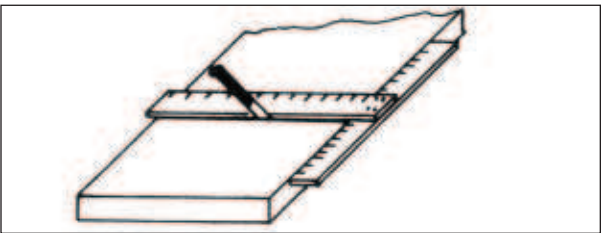
- A. Protect from direct sunlight during storage and after application.
- B. Store flat in a dry area (not on edge).

## Cutting EPS Boards

Commonly, EPS boards are cut with a knife using a square to guide the cut.

Always keep the knife sharp and hold the blade at a low angle (approximately 30° or less ) when cutting the board. The low angle allows the knife to "slice" through the insulation.

EPS boards may also be cut easily and accurately using the following tools: table saw or hot wire machine.



## Adhesive Application

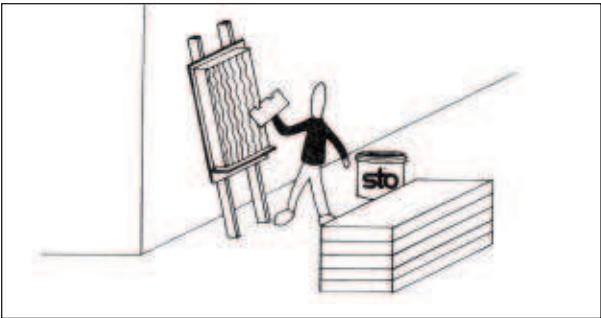
Apply the adhesive to the insulation board using the correct size notched trowel. (See pages 9-10 for correct sizes.)

Always hold the notched trowel at a minimum 30° angle to produce the correct size ribbons. When forming the ribbons, press the trowel firmly (this will prevent excess adhesive from collecting between the ribbons). Keep the trowel clean to prevent any adhesive build-up in the notches.

The ribbons should run vertically (parallel to the short dimension of the board) when the boards are applied to the wall.

To make application easier and quicker, build an "easel" to hold the insulation boards as you apply the adhesive.

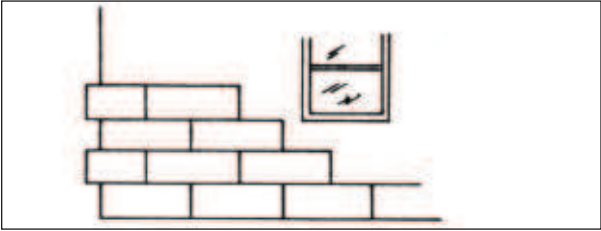
Adhesive may also be applied directly to the wall using the StoSilo



Combo systems. These automated silo/mixer/spray machines will save you time and money and allow you to get to the next job more quickly.

## EPS Board Application

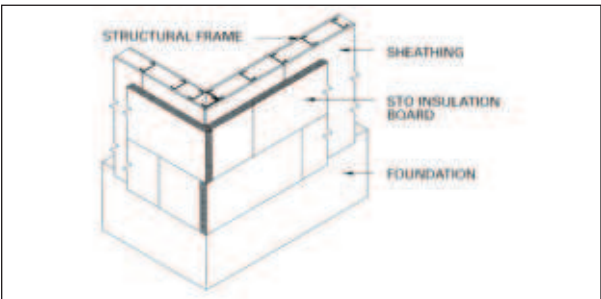
Prior to placing the EPS boards on the wall, be sure to wipe or scrape any excess adhesive from the edges of the boards. Any adhesive collecting between the boards will create "thermal bridges". When applying the boards, butt them tightly together. This will prevent any "thermal breaks" in the system. Gaps between the EPS boards can cause cracking in the EIFS base coat and finish and telegraphing of joints through the finished wall surface.



Always place the boards so all vertical joints are staggered.

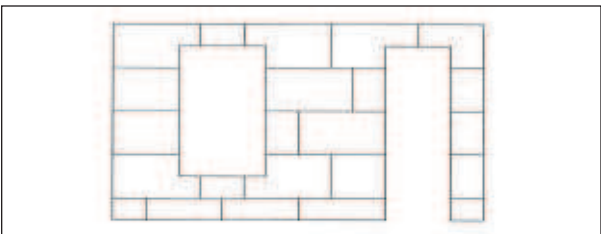
When placing the boards on the wall, always apply the correct amount of pressure for the adhesive to "grab."

- When using Sto Dispersion Adhesive, just press the boards on; the adhesive will do the rest.
- When using other Sto adhesives, press harder or "tamp" the board to ensure a good "grab." To apply uniform pressure over the entire board, use a "Rasping Board" (see page 15) or a large block of similar size.



At all inside and outside corners always stagger or interlock the boards. Offset joints in sheathing by a minimum of 6" (152 mm). This prevents cracking in the EIFS coatings in the event of movement at the sheathing joints.

*Important note: Make sure no adhesive is between the interlocked boards at the outside corner.*

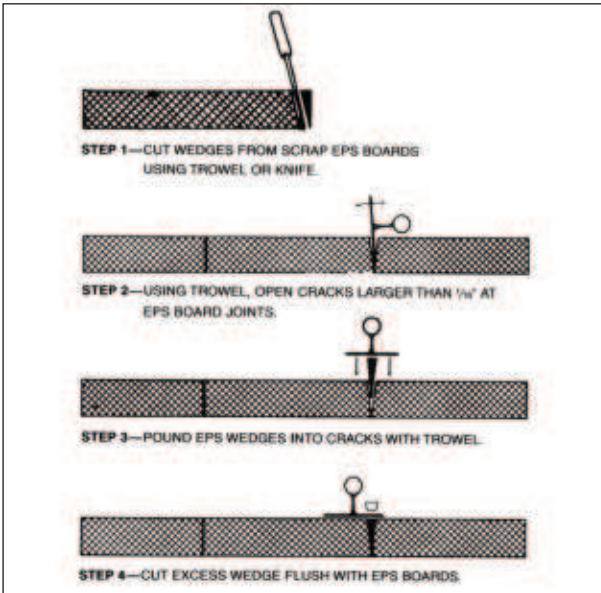


Cut insulation to fit around openings. Do not align board joints with corners of openings.

## Filling EPS Voids

As noted in the previous section, the EPS board should be butted tightly together during application. A thorough inspection should be made for any voids or spaces larger than 1/16" (1.6 mm) between the EPS boards. (If you can slip a credit card into the void, it must be filled.) ALL VOIDS MUST BE FILLED WITH AN INSULATING MATERIAL, either a low expanding polyurethane spray foam or slivers of scrap EPS board. Insulating all open joints between the boards achieves the following important objectives:

- Eliminates thermal breaks so the wall will be properly insulated
- Future problems with the finish due to uneven "vapor diffusion" will be prevented
- Base coat consumption will be reduced.

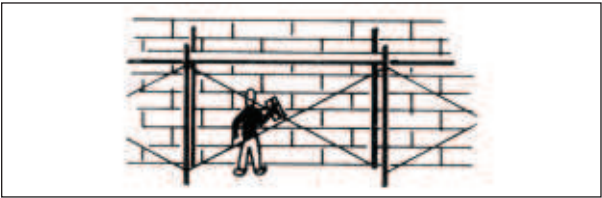


## Rasping

The entire surface of the EPS wall must be level and uniform. EPS boards are very easy to level and shape using a "rasping board." To make a rasping board, simply cut a straight scrap of 1/2" (13 mm) plywood, install a wooden handle on one face, then glue a piece of 12 grit floor sanding paper to the other face of the plywood. Floor sanding paper is approximately 8" x 22" (203 x 559 mm) and should be available at local equipment rental shops.



When rasping the insulation boards level and even, it is important that you rasp the entire surface of the boards, not just the joints or edges. If you rasp just the edges/joints, then the wall will appear to have waves in it during "critical" light.



Rasping boards are also available commercially.

## Base Coat & Mesh Application

After the wall has been prepared or leveled, it must be protected from sun/water damage. If EPS board is exposed to sunlight for extended periods, a powdery film develops on the surface. This film must be removed by rasping. Reinforcement is then added to all the boards for impact protection.

To achieve this, apply the proper Sto base coat and embed appropriate mesh. This procedure is known as the "base coat application."



The most popular Sto base coats are:

**Sto RFP** - A ready-mixed 100% synthetic base coat. Note: Because Sto RFP is non-cementitious and dries by evaporation only, weather conditions will affect drying times; cool or damp conditions lengthen drying times.

**Sto Flexyl** - An acrylic-based, fiber-reinforced, flexible waterproofer combined with equal parts of Portland cement by weight. Sto Flexyl functions as an air and moisture barrier on concrete, masonry or gypsum sheathing surfaces. It also functions as a waterproof base coat in Sto EIFS for use on properly sloped trim or accents and splash areas near grade.

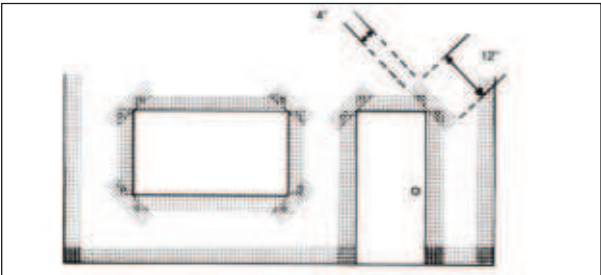
**Sto BTS® Plus** - A polymer-modified, cementitious material. Just add water.

**Sto Primer/Adhesive-B** - A polymer-modified cementitious material. Just add water.

**Sto Primer/Adhesive** - An acrylic base coat to which Portland cement is added at the job site, equal parts by volume.

**Sto BTS® Xtra Base Coat** - A polymer-modified lightweight cementitious material, used as a high-build base coat, up to 1/4" (6 mm). Just add water.

**Sto BTS® Silo** - A polymer-modified cementitious material for use with StoSilo spray equipment.



### Application at Detail Work

Additional protection at doors and windows is achieved by applying "butterflies" or small strips of mesh diagonally at the sills and headers prior to application of field mesh.

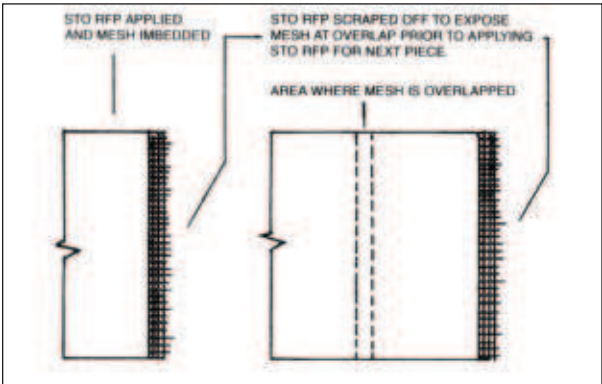
### Application at Corners

All inside and outside corners must have two layers of mesh. This can be achieved in one of two ways:

- Double wrap Sto Mesh minimum 8" (204 mm) in each direction
- Apply Sto Detail Mesh and overlap with Sto Mesh minimum 8" (204 mm) onto adjacent wall

### Application at Wall Areas

Apply the Sto base coat on the insulation boards in a layer approximately 1/8" (3 mm) thick. Work vertically or horizontally in strips of 40" (1016 mm). Immediately imbed the Sto Mesh in the wet base coat. Trowel off any excess base coat from the surface. The mesh must be fully embedded so that no mesh color is visible. Apply additional base coat if mesh color is visible when the base coat is dry. Do not butt mesh strips. Overlap the strip edges a minimum of 2-1/2" (64 mm). If the mesh is butted it will cause cracks in the base and finish coats. Feather the base coat at mesh overlaps.



### Application for Level 1 (Ultra High) Impact Areas

StoTherm EIFS are engineered wall cladding systems and can be enhanced in several ways to accommodate higher impact needs. Where additional impact resistance is required, such as on ground floors, garage areas, and areas accessible to pedestrian traffic, Sto recommends the use of Sto Armor Mat to a minimum height of 6'-0" (1.8 m). First apply a base coat layer and imbed Sto Armor Mat (ultra high impact mesh). When using Sto Armor Mat, the edges must be butted, not overlapped, due to the thickness of the mesh. After this application has dried, apply the base coat with regular Sto Mesh as previously described.

## Drying before Finish Application

*IMPORTANT: All EPS boards are to be covered with the base coat and mesh application and allowed to dry prior to applying any finish.*

## Primer Application (Optional System Component)

Priming with tinted Sto primers is recommended as a color base for Stolit® R finishes, or fine aggregate finishes such as .75 mm or 1 mm finishes. If Sto RFP base coat is tinted to the same shade as the finish, the primer is not necessary. In addition, priming provides uniform substrate absorption, enhances finish color and inhibits efflorescence in cementitious substrates. The primer is applied with a paint roller or brush to the substrate. Certain finishes, including Sto Decocoat, Sto GraniTex®, and StoCreativ® Granite always require the base coat to be primed with Sto primer, tinted to the finish color.

## Finish Application

Plan the finish application so enough workers are available to finish entire sections of wall area at one time without interruption.

Mix the finish with a clean, rust-free mixer. Small amounts of clean water may be added to aid workability. Limit water to amount needed to achieve the finish texture. Use only stainless steel trowels to apply the finish. Work in pairs with the first person applying the finish to the wall, and the second person floating the finish to the proper texture (refer to page 20 for “floating textures”).

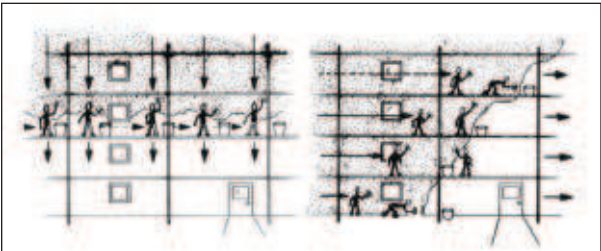


By following the guidelines listed below and shown in the adjacent pictures, problems can be prevented and an aesthetically pleasing wall surface will be the result:

1. Apply finish directly over the base coat (or primed base coat as specified) **ONLY AFTER THE BASE COAT/PRIMER HAS THOROUGHLY DRIED.** 24 hours minimum drying time is recommended. If cool and/or damp conditions exist, allow additional drying time, minimum 72 hours.
2. Avoid application in direct sunlight. This can cause shadow lines from scaffolding.

3. Apply finish in a continuous application, always working a wet edge toward the unfinished area.
4. Aesthetic V-grooves may be designed into the system to accommodate workability on multi-level buildings. However, a minimum of 3/4" (19 mm) insulation board must be left after any grooves are cut. Refer to Sto Detail 1.03 in the Sto Information Manual.
5. "R" (rilled texture) finishes must be floated with a plastic trowel to achieve proper textures and avoid discoloration of the finish.
6. Avoid installing separate batches of finish side-by-side.
7. Interrupt application at natural breaks in construction: expansion joints, changes of plane, system terminations, etc.

*NOTE: Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying and may require adjustments in the scheduling of work to achieve desired results. Cool or damp conditions extend working time and slow down drying and may require added measures of protection against wind, dust, dirt, rain and freezing.*



## Floating or Spraying Textures

There are basically five different floating or spraying procedures using specific Sto finishes to produce five types of textures:

**1. Pebbled Texture:** To achieve this texture, any of these finishes is applied to the wall to approximately the thickness of the aggregate in the finish. The finish is then scraped down to ensure it is no thicker than the largest aggregate size. Next, using a stainless steel trowel in a figure "8" motion, float the finish to disperse the aggregates evenly.

*NOTE: A plastic float may be used to float the finish but the appearance may vary from a stainless steel float.*

**2. Rilled Pattern Texture:** Any of these finishes is applied to the wall to approximately the thickness of the largest aggregate in the finish. The finish is then scraped down to ensure it is no thicker than the largest aggregate size. Next, using a plastic float, float the finish in either a figure "8", horizontal or vertical direction to produce the rills in the finish. When floating you can either float it immediately (wet float) or allow the finish to set a short time and float it (dry float). By allowing the finish to set and dry float, the finish will produce more flat areas (rills).

*NOTE: After applying pebbled or rilled texture finishes, if the plastic or stainless steel float sticks to the finish, then too much finish is on the wall. Remove the excess finish by scraping with a stainless steel trowel down to the largest aggregate size. Then float the finish. This will save material and create a more uniform finish texture.*

**3. Freestyle Stucco Pattern Texture** using Stolit Freeform. This finish is applied to the wall in a uniform thickness and textured using a putty knife, sponge, trowel, brush or roller. Apply to a minimum thickness of 1/16" (1.6mm) and to a maximum thickness of 3/16" (4.8mm).

**4. Limestone Finish Texture** is accomplished by first installing Stolit 1.0 or 1.5, then applying Stolit Freeform or Stolit Lotusan Freeform in a tight coat on top of the dry Stolit with both products tinted to the same color.

**5. Variegated Bead Texture** using Sto Decocoat. This finish is applied to the wall to approximately 1-1/2 times the thickness of the bead in the finish. Next work the trowel in one direction to make the surface smooth. Press down firmly with the trowel held nearly flat. For spray application, spray in a circular motion with proper spray equipment to achieve a smooth, uniform coating. Adjust spray pressure and orifice to achieve desired texture.

**6. Natural Stone Finish** using Sto GraniTex®. This finish is applied to the wall by spray application in two coats. Apply the first coat moving the spray vertically and the second coat moving the spray horizontally to achieve full and uniform coverage to a thickness of not less than 1/8" (3.2 mm). After the finish is dry, a sealer, Sto Clear Coat Sealer, is then applied over the entire surface by roller.

**7. Natural Stone Finish** using StoCreativ® Granite. Applied in a thickness slightly greater than the largest aggregate in the finish. Use a flat trowel method to smooth the finish. If trowel "chatter" marks appear remove them by smoothing along the chatter mark lines.

*NOTE: When selecting a finish color always select a color with a lightness value of 20 or greater. The lightness value for each Sto color is printed on the Sto Color Chart. The use of dark color finishes (lightness value less than 20) over EIFS should be avoided because dark colors absorb light energy from the sun and heat up. This can cause EPS board deformation and delamination of the EIFS base coat/mesh from the surface. The surface temperature limit of EPS board is approximately 160°F (71°C).*

## **Sealants**

Wherever the insulation system or the EPS boards meet another material, i.e., door/window frame, roof, pipes, meter boxes, exterior faucets, etc., a minimum 1/2" (13 mm) wide sealant joint must be provided.

To properly install sealant, you need to provide a joint between two materials. Sealant works like a rubber band or a shock absorber bonded between two surfaces, stretching back and forth as the two surfaces move.

There are two important factors to remember when applying sealant.

1. The sealant must bond to only two surfaces such as the coated EPS board edge and a window frame. It should never bond to a third surface such as the substrate. If you bond to the third surface, the "rubber band" will not be able to stretch back and forth and the sealant will crack.
2. There must be enough sealant material (minimum 1/2") (13 mm) to stretch, yet not too much material (maximum 1") (25 mm).

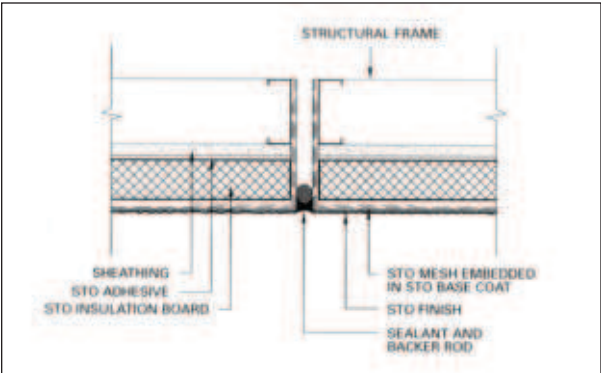
There is an easy way to solve both the above problems: use a closed cell "backer rod" material sized so that it can be pushed into the joint under compression. This will provide a backing to hold the size of the joint correctly and provide a third surface that the sealant will NOT bond to.

*NOTE: In some cases, the two surfaces to be sealed are not deep enough to allow a backer rod to be installed. In such cases "bond breaker" tapes are available that may be used in place of a backer rod.*

## **Sealing Between EPS and Dissimilar Materials**

As you apply the EPS board, whenever you meet a dissimilar material as mentioned above, you should leave a space between the EPS and dissimilar material.

When sealing, the space between the EPS board and the dissimilar material should generally be a minimum of 1/2" (13 mm) but no larger than 1" (25 mm).



*NOTE: All edges to receive sealant must also be encapsulated with base coat and mesh. Whenever possible avoid installing finish in the joint. The preferred surface to seal to is the base coat, not the finish coat.*

## Expansion Joints

Expansion joints are required in StoTherm EIFS at the following locations:

1. Floor lines in multi-level wood frame construction.
2. At dissimilar substrates, materials or construction.
3. Where joints already exist in the substrate or supporting construction.
4. At changes in building height, shape or structural system.
5. At other areas of anticipated movement.
6. Between pre-fabricated panels.

*NOTE: Use appropriate sealant/primer and backer rod following sealant manufacturer's recommendations to prevent water from getting into or behind the EIF system. Do not apply base coat/mesh or finish over the expansion joint. Whenever possible apply sealant to the EIFS base coat, not the finish coat.*

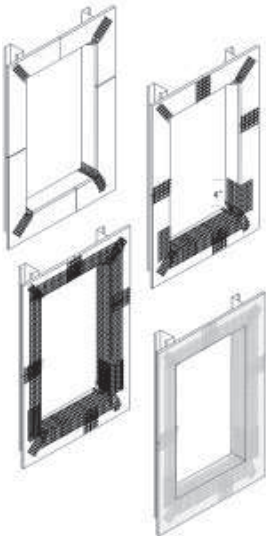
# StoTherm® NExT Installation

StoTherm NExT is the next generation of EIFS. It differs from traditional Class PB EIFS in that it adds a StoGuard® waterproof air barrier component on the substrate.

As a waterproof air barrier StoGuard is one component in the air barrier system and the moisture protection for the structure. Installation of the waterproof air barrier must be integrated with flashing and other air and moisture barrier components to ensure that where water is likely to penetrate the wall assembly, it will be drained to the exterior at the source of the leak. Proper air barrier connections and integration of the moisture barrier with flashing through sequencing of work and coordination of trades is necessary for a complete air barrier system and complete moisture protection (see Moisture Intrusion and Critical Details (page 28).

## To install StoGuard® over Exterior or Exposure 1 Plywood, Gypsum Sheathing in compliance with ASTM C 79, Glass Mat Faced Gypsum Sheathing in compliance with ASTM C 1177 and Fiber Reinforced Gypsum Sheathing Panels in compliance with ASTM C1278:

1. Protect rough openings, joints and parapets: apply joint treatment by trowel over rough openings, sheathing joints, inside and outside corners, and tops of parapets.



Immediately embed reinforcing mesh in the wet joint treatment and trowel smooth. Embed minimum 4 inch (101 mm) wide mesh\* at sheathing joints and minimum 9 inch (229 mm) wide mesh at rough openings, inside and outside corners and tops of parapets (refer to Sto detail 10.23a for detailed information on proper protection of rough openings and sequencing of work at rough openings).

2. Spot fasteners with joint treatment.

\* Use StoGuard Mesh (self-adhesive), Sto Mesh, or Sto Detail Mesh for these applications.



3. Apply Sto Gold Coat® by roller over sheathing surface, including the dry joint treatment, to a uniform wet mil thickness of 10 mils in one coat. Use 1/2 inch (13 mm) nap roller for plywood and gypsum sheathing. Use 3/4 inch (19 mm) nap roller for glass mat faced gypsum sheathing. Protect from weather until dry.

4. Coordinate installation of connecting air barrier components with other trades to provide a continuous air tight membrane.

5. Coordinate installation of flashing and other moisture protection components with other trades to achieve complete moisture protection such that water is directed to the exterior, not into the wall assembly, and drained to the exterior at sources of leaks (windows, doors and similar penetrations through the wall assembly).

### **For Installation over Exposure 1 OSB (Oriented Strand Board) sheathing:**

1. Apply Sto Gold Coat with a 3/4 inch (19 mm) nap roller to sheathing surface to a uniform wet mil thickness of 10 mils. Protect from weather until dry. Then follow steps 1-5 above.

*Note: windows and doors are typically installed immediately following installation of the air/moisture barrier and work should be sequenced accordingly. Consult with window manufacturer for installation requirements to maintain air barrier continuity and for head, jamb, sill flashing and perimeter sealant requirements.*

### **Installation of Starter Track (use starter track with weep holes along the bottom):**

1. Strike a level line at the base of the wall to mark where the top of the starter track terminates.

2. Attach the starter track even with the line into the structure a maximum of 16 inches (406 mm) on center with the proper fastener: Type S-12 corrosion resistant screws for steel framing with minimum 3/8 inch (9 mm) penetration, and galvanized or zinc coated nails for wood framing with minimum 3/4 inch (19 mm) penetration. Attach between studs into sheathing as needed to secure the track flat against the wall surface. For solid sheathing attach directly into sheathing at 12 inches (305 mm) on center maximum.

3. Butt sections of starter track together. Miter cut outside corners and abut. Snip front flange of one inside corner piece (to allow EPS Board to be seated inside of track) and abut.

## **Installation of splice strips for Starter Track and Flashing**

1. Starter Track, Window/Door Head Flashing and Side Wall Step Flashing: install 2 inch (51 mm) wide diagonal splice strips of detail mesh at ends of head flashings. Install minimum 4 inch (100 mm) wide splice strips of detail mesh between back flange of starter track, head flashings and roof/side wall step flashing. Center the mesh so it spans evenly between the back flange of the Starter Track or flashing and the sheathing. Embed the mesh in the wet joint treatment and trowel smooth. Refer to Sto details 10.23a, 10.23b, 10.23c, 10.62a, 10.65a, and 10.70 for detailed illustrations of StoGuard installation.
2. Apply waterproof coating over the splice strip when the joint treatment is dry.
3. Allow waterproof coating to dry and install the StoTherm EIFS with vertical ribbons of adhesive.



## **Failure Prevention**

# Failure Prevention

## Moisture Intrusion and Critical Details

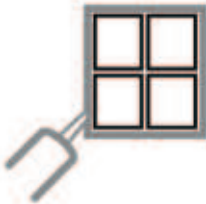
Most moisture intrusion problems do not occur because of material failures. They occur because of poorly designed or constructed details that allow water to enter walls rather than direct water to the exterior. To avoid costly water intrusion problems a few simple principles must be followed in the detailing of the construction. Many of these details rely on flashing to make a leakproof transition between abutting construction elements.



1. Sill flashing beneath window



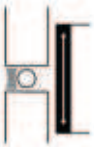
2. Kick-out flashing at lower roof terminations



3. Sealant around windows & doors



4. Sealant at penetrations



5. Expansion joint at floor lines & sealant



6. Finish above grade



7. Head flashing above window



8. Flashing over buildouts



9. Cap flashing over parapets



10. Saddle flashing at lower/higher walls



11. Flashing at decks



12. Protection of rough openings

The following list of NEVERS was prepared from field experience and testing over the past 30 years. Observing these "rules" helps ensure successful, quality installations that are durable.

**General:**

1. Never deviate from published specifications.
2. Never apply StoTherm EIFS materials below 40°F (4°C).
3. Never mix additives such as rapid binders, anti-freeze accelerators, etc. to any Sto Materials under any circumstances.
4. Never use any material that has not been specified by Sto.
5. Never use products that have frozen. Never apply products on frozen surfaces.
6. Never apply adhesive (except Sto Flexyl or Sto BTS Silo Adhesive) directly on the substrate. Always apply adhesive to the back of the insulation boards.
7. Never use unapproved accessories.
8. Never apply StoTherm EIFS on horizontal weather exposed surfaces, or on surfaces subject to continuous or intermittent water immersion or hydrostatic pressure. Minimum required slope is 1:2 (27 degrees) and Sto Flexyl with Sto Mesh embedded is required (refer to Sto details 1.04a & b). Protect large projecting EIFS features with flashing with drip edge.
9. Never use StoTherm EIFS on low slope horizontal weather exposed surfaces, as a roof covering, in a pool, pond or other water-immersed condition, as an interior finish, or below grade (unless especially designed for use below grade).
10. Never slope StoTherm EIFS trim or accents less than 27°.
11. Never incorporate a vapor retarder on the inside of walls in warm humid climates.
12. Never direct water from roofs, decks or leaking windows into or behind the StoTherm EIFS. Always direct water to the exterior beyond the face of the StoTherm EIFS through the proper use of flashing.

## **Insulation:**

13. Never allow adhesives or base coats to fill joints between EPS boards. Always fill joints with insulation.
14. Never allow any open joints in the insulated wall system. Always fill voids with insulation.
15. Never penetrate the insulation system with any foreign materials, i.e., screws, nails, etc.
16. Never use EPS board larger than 2' x 4' (610 mm x 1,219 mm) or less than 3/4" (19 mm) thick.
17. Never use insulation board other than Sto specified board.
18. Never store EPS board on edge or in sunlight.
19. Never apply any products over loose EPS boards.
20. Never leave any areas of the insulation system open to penetration of water or moisture. Always protect edges of system with base coat/mesh, then use appropriate sealant.
21. Never rasp just the EPS board joints. Always rasp the entire wall surface.
22. Never allow EPS board joints to be in line with sheathing joints. Always bridge joints by a minimum of 6" (152 mm).
23. Never have less than 3/4" (19 mm) of EPS on the wall, especially when cutting aesthetic grooves.

## **Base Coat/Mesh:**

24. Never leave any areas of EPS boards unprotected without mesh.
25. Never butt Sto Mesh. Always overlap it a minimum of 2-1/2" (64 mm).
26. Never overlap Sto Armor Mat. Butt the edges together.
27. Never allow mesh to protrude through base coat or finish. Always apply sufficient base coat to hide the mesh color.
28. Never apply any materials over a damp or frozen surface.

29. Never use only a single wrap of Sto Mesh on inside and outside corners. Always double wrap these areas.

**Finish Coat:**

30. Never apply Sto Finishes thinner or thicker than recommended.
31. Never apply Sto Finishes in direct sunlight.
32. Never use steel trowels. Always use stainless steel.
33. Never put finish over caulks or sealants.
34. Never put finish on horizontal weather exposed surfaces, below grade, or on surfaces subject to continuous or intermittent water immersion or hydrostatic pressure.
35. Never use dark colors (LV less than 20) as the EIFS finish color.



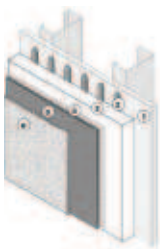




**StoTherm®  
EIFS**

# StoTherm® NExT Systems

## EIFS with Drainage

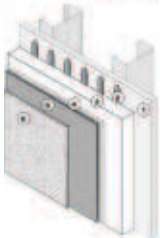


### **StoTherm Essence NExT®**

1. StoGuard
2. Sto Primer/Adhesive-B Adhesive
3. Sto EPS Insulation
4. Sto Mesh
5. Sto Primer/Adhesive-B Base Coat
6. Sto Essence DPR Finish

#### **10 year Warranty**

The adhesive applied in vertical ribbons provides a cavity/drainage plane between the StoGuard protected sheathing and the insulation board.

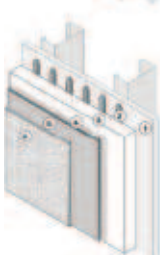


### **StoTherm Classic NExT®**

1. StoGuard
2. Sto BTS® Adhesive
3. Sto EPS Insulation
4. Sto Mesh
5. Sto BTS® Base Coat
6. Stolit® Finish

#### **12 year Warranty**

The adhesive applied in vertical ribbons provides a cavity/drainage plane between the StoGuard protected sheathing and the insulation board.



### **StoTherm Lotusan NExT™**

1. StoGuard
2. Sto BTS® Adhesive
3. Sto EPS Insulation
4. Sto Mesh
5. Sto BTS® Base Coat
6. Stolit® Lotusan® Finish

#### **15 year Warranty**

The adhesive applied in vertical ribbons provides a cavity/drainage plane between the StoGuard protected sheathing and the insulation board.

StoTherm NExT is the next generation of EIFS. It differs from traditional Class PB EIFS in that it adds a waterproof air barrier component on the substrate—StoGuard, which can be added to the StoTherm Essence, Classic and Lotusan EIF Systems. StoGuard consists of two components—joint treatment, Sto Gold Fill, and waterproof coating—Sto Gold Coat. When combined with starter track and vertical ribbons of adhesive, the system is designed to drain incidental moisture, and is classified as an EIFS with drainage.

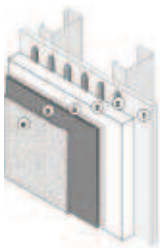
The waterproofing protection provided by StoGuard protects wall sheathing against moisture damage during the construction process and in the event of a breach in the EIFS wall cladding while in service. It is not intended to correct faulty workmanship such as the absence or improper integration of flashing with the EIFS, nor is it intended to correct other defective components of construction such as windows that leak into the wall assembly. Flashing should always be integrated with the cladding to direct water to the exterior, not into the wall assembly, particularly at potential leak sources such as windows (see Moisture Intrusion and Critical Details).

As a component of an air barrier system StoGuard minimizes the risk of condensation within the building envelope by eliminating mass transfer of warm moisture laden interior air to the exterior. Typically an air barrier system is advantageous in cold climates to prevent the passage of moisture through the wall assembly where it can condense. A complete air barrier system consists of individual air barrier components and the connections between

them. The air barrier components must be continuous to become an effective air barrier system. The design/construction professional must take material compatibility and construction sequencing into account when designing an "air tight" assembly to ensure continuity and long term durability. The effects of air tightness on mechanical ventilation should also be included in the overall project evaluation.

An air barrier should not be confused with a vapor retarder which may also be used in the wall assembly to retard water vapor diffusion and reduce the risk of condensation. Generally a vapor retarder is placed on the warm side of the wall. Specifically, it is placed on the interior side in cold climates. A vapor retarder may not be necessary depending on the wall components and the range of temperature/humidity conditions inside and outside. A vapor retarder should not be used on the inside of walls in warm humid climates.

## Traditional or Class PB EIFS

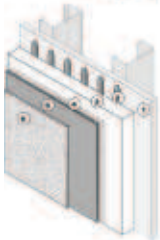


### StoTherm® Essence

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1. Sto Primer/Adhesive-B Adhesive
2. Sto EPS Insulation Board
3. Sto Mesh
4. Sto Primer/Adhesive-B Base Coat
5. Sto Essence DPR Finish

**5 year Warranty**

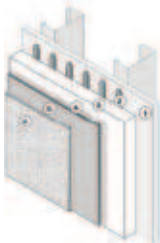


### StoTherm® Classic

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1. Sto BTS® Adhesive
2. Sto EPS Insulation Board
3. Sto Mesh
4. Sto BTS® Base Coat
5. Stolit® Finish

**7 year Warranty**



### StoTherm® Lotusan®

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1. Sto BTS® Adhesive
2. Sto EPS Insulation Board
3. Sto Mesh
4. Sto BTS® Base Coat
5. StoLit® Lotusan® Finish

**10 year Warranty**

The StoTherm Essence, Classic and Lotusan EIFS are five component exterior insulation and finish systems (EIFS) consisting of adhesive, insulation board, base coat, reinforcing mesh and finish coat. These components, when properly integrated with other components of construction, form a barrier wall which is intended to resist water penetration at its outer surface. A barrier wall is not designed to drain or eliminate moisture behind it. The accumulation of moisture behind the StoTherm Essence, Classic or Lotusan EIFS could result in building damage. As with any wall cladding, proper detailing and integration with other components of construction by a qualified design or construction professional, including the proper use of flashing, to prevent the accumulation of moisture within the wall assembly are essential. Sto Corp. assumes no liability for workmanship, design or engineering.

## **StoTherm® EIFS Products**

### **Sto BTS® Xtra**

A one-component, polymer-modified lightweight, cement-based adhesive and high-build base coat for use in StoTherm EIFS. It is self-gauging to help achieve correct base coat thickness in a single coat application and is lightweight, with over 17% recycled content, and buildable to 1/4" (6 mm).

### **Sto BTS® Plus**

A one-component, polymer-modified, cement-based material used as an adhesive and base coat in the StoTherm Classic and StoTherm Lotusan EIFS. It is self-gauging to help achieve correct base coat thickness in a single coat application. It is factory blended to ensure proper mix ratio.

### **Sto BTS® Silo**

A one-component, polymer-modified, cement-based adhesive and base coat engineered for use in StoTherm EIFS with the StoSilo system equipment which mixes, pumps and sprays Sto BTS-Silo. It is self-gauging to help achieve correct base coat thickness in a single coat application.

### **Sto Dispersion Adhesive**

A ready-mixed, acrylic-based adhesive used to attach Sto EPS Insulation Board to prepared sheathing in StoTherm EIFS.

### **Sto Primer/Adhesive-B**

A one-component, polymer-modified, cementitious adhesive and base coat material that is factory blended to ensure proper mix ratio. It is used to attach Sto EPS Insulation Board to prepared sheathing, concrete or masonry substrates and as a base coat in StoTherm Essence.

### **Sto Primer/Adhesive**

An acrylic-based adhesive and base coat material that is mixed at the jobsite with Portland cement in equal parts by volume and used to attach Sto EPS Insulation Board to prepared sheathing, concrete or masonry substrates and as a base coat in StoTherm Essence.

### **Sto RFP**

A ready-mixed, acrylic-based material used as a base coat in Sto EIFS. It may be used as an alternative base coat to Sto BTS Plus in StoTherm Classic and Lotusan. Eliminates risk of efflorescence.

### **Sto Flexyl**

An acrylic-based, fiber-reinforced, flexible waterproofer combined with equal parts of Portland cement by weight. Sto Flexyl functions as an air and moisture barrier on concrete, masonry or gypsum based sheathing surfaces. It also functions as a waterproof base coat in StoTherm EIFS for use on properly sloped trim or accents and splash areas near grade. (Sto Watertight Coat is a suitable substitute for Sto Flexyl)

## **Sto Primer**

A ready-mixed, tinted acrylic primer for use as an undercoat with all Sto finishes to enhance color consistency, finish coverage, and finish coat adhesion, and to reduce the chance of efflorescence. Recommended beneath Stolit R, Sto Swirl, Stolit .75, Stolit 1.0, and Sto Fine Sand Finishes. Required beneath Sto Decocoat, Sto GraniTex®, and StoCreativ Granite. In most cases, Sto Primer is an optional component for use with StoTherm EIFS. The benefits of using Sto Primer far outweigh the small additional cost. Benefits of using Sto Primer include:

- Promotes uniform substrate absorption
- Improves finish coat adhesion
- Improves finish coat coverage
- Improves water resistance
- Reduces the chance of efflorescence
- Tinted to the same color as the finish to improve color uniformity

## **Finishes**

**Stolit®:** A ready-mixed, acrylic-based integrally-colored textured wall coating used as a finish in StoTherm Classic. Available in a wide variety of textures and in popular and custom colors, Stolit provides a versatile decorative and protective outer layer. Enhanced by the addition of Optilink advanced polymer technology, Stolit exceeds the performance of competitor's top-line finish products for higher levels of weather, fade, mildew and dirt pick-up resistance!

**Sto Essence DPR Finish:** A ready-mixed, acrylic-based, integrally colored textured wall coating used as a finish in StoTherm Essence. This attractive finish provides a versatile decorative and protective outerlayer and meets industry performance standards. Sto Essence Finish comes in popular and custom colors, and in three textures: Swirl, Medium Sand and Fine Sand.

**Stolit® Lotusan®:** A ready-mixed, acrylic-based, Lotus-Effect™, integrally-colored, textured wall coating used as finish coat in StoTherm Lotusan. Replicating the lotus plants ability to send rain drops falling gently off its leaves, Stolit Lotusan resists dirt pickup while keeping walls clean and attractive. Simply put, Stolit Lotusan walls are cleansed by rainfall.

**Sto Limestone** provides the look of smooth cut natural limestone in an acrylic finish. It is a two-step application of two separate Stolit finishes, either Stolit 1.0 or 1.5 as the first application, then a tight coat of Stolit Freeform or Stolit Lotusan Freeform to achieve the smooth look.

**Sto Decocoat, Sto GraniTex<sup>®</sup>, and StoCreativ<sup>®</sup> Granite** are natural-aggregate finishes in a clear acrylic matrix that provide classic looks of natural stone in a lightweight finish.

**StoCreativ<sup>®</sup> Brick** is a lightweight wall finish that can be used with StoTherm<sup>®</sup> to achieve the look of brick without the added expense and design limitations.

**Optilink<sup>®</sup>:** Stolit<sup>®</sup> finishes are improved even further with the addition of Sto Optilink<sup>®</sup>, a remarkable polymer technology development by Sto that improves the curing and film formation process that occurs as these premium finishes dry. It works by forming intermolecular associations among key finish ingredients such as polymer, fillers, biocide, aggregates and pigments. Optilink acts as a sort of “coordinator” to help arrange, or link these primary components into a very ordered structure.

The addition of Optilink allows these Sto finishes to go beyond the performance levels of standard acrylic finishes. Film integrity and key performance properties like dirt pickup resistance, mildew and algae resistance, and color, stability are optimized.

Sto, optimizing and linking > > Optilink<sup>®</sup>

With Optilink, the ingredients that are critical to the performance of the finish are distributed more evenly throughout the finish, to allow them to perform their individual functions in better harmony and with better results.

### **StoSilco<sup>®</sup> Products**

StoSilco products ensure a better-looking, better-protected building with less need for cleaning and recoating. And with costs comparable to those of high-quality non-silicone acrylics, StoSilco products promise unprecedented long-term value.

- Superior weather resistance, water-repellent
- Superior vapor permeability, breathability
- Superior resistance to dirt pick-up, mildew and algae
- Superior UV resistance
- Superior durability; less deterioration

## Average Coverages for StoTherm® EIFS Products

<b>CONDITIONERS</b>	<b>PACKAGE</b>	<b>SMOOTH SURFACE</b>	<b>TEXTURED SURFACE</b>
Sto Primer	5 gal. pail	1050-1100 ft <sup>2</sup>	750-850 ft <sup>2</sup> depending upon application technique
Sto Plex W	5 gal. pail	1150-1200 ft <sup>2</sup>	850-950 ft <sup>2</sup> depending upon application technique
Sto Leveler	60 lb. bag	N/A	50-60 ft <sup>2</sup> @ 1/8"

<b>ADHESIVES</b>	<b>PACKAGE</b>	<b>SHEATHING OR SMOOTH CONCRETE</b>	<b>IRREGULAR BLOCK, CONCRETE, BRICK</b>
Sto BTS®	38-47 lb. bag	120-135 ft <sup>2</sup> (1/2" Trowel)	95-105 ft <sup>2</sup> (5/8" Trowel)
Sto Primer/Adhesive-B	50 lb. bag	115-125 ft <sup>2</sup> (1/2" Trowel)	90-100 ft <sup>2</sup> (5/8" Trowel)
Sto Dispersion Adhesive	5 gal. pail	350-385 ft <sup>2</sup> (3/16" Trowel)	Not Recommended
Sto Primer/Adhesive	5 gal. pail	240-250 ft <sup>2</sup> (1/2" Trowel)	220-230 ft <sup>2</sup> (5/8" Trowel)
Sto BTS® <i>Silo</i>	60 lb. bag	150-170 ft <sup>2</sup> (1/2" Trowel)	120-130 ft <sup>2</sup> (5/8" Trowel)
Sto Flexyl	5 gal. pail	100-110 ft <sup>2</sup> (Flat Trowel)	80-90 ft <sup>2</sup> (Flat Trowel)

<b>MESHES</b>	<b>OVERLAP 2.5"</b>	<b>WEIGHT</b>	<b>ROLL SIZE</b>
Sto Mesh	Yes	4.5 oz./yd <sup>2</sup>	150' x 38"/475 ft <sup>2</sup>
Sto Detail Mesh	Yes	4.2 oz./yd <sup>2</sup>	150' x 9-1/2" 119 ft <sup>2</sup>
Sto Armor Mat	No	15 oz./yd <sup>2</sup>	75' x 38"/238 ft <sup>2</sup>
Sto Intermediate Mesh	Yes	11 oz./yd <sup>2</sup>	75' x 38"/238 ft <sup>2</sup>
Sto Armor Mat XX	No	20 oz./yd <sup>2</sup>	75' x 38"/238 ft <sup>2</sup>

<b>BASE COATS</b>	<b>PACKAGE</b>	<b>EPS SURFACE WITH STANDARD MESH</b>	<b>SHEATHING OR MASONRY</b>
Sto RFP	5 gal. pail	120-130 ft <sup>2</sup>	110-120 ft <sup>2</sup>
Sto Primer/Adhesive-B	50 lb. bag	105-115 ft <sup>2</sup>	100-110 ft <sup>2</sup>
Sto Primer/Adhesive	5 gal. pail	200-210 ft <sup>2</sup>	180-190 ft <sup>2</sup>
Sto Flexyl	5 gal. pail	170-180 ft <sup>2</sup>	150-160 ft <sup>2</sup>

<b>BASE COATS REC.ASTM 1/16"</b>	<b>PACKAGE</b>	<b>EPS SURFACE WITH STANDARD MESH</b>	<b>SHEATHING OR MASONRY</b>
Sto BTS®	38-47 lb. bag	110-125 ft <sup>2</sup>	95-110 ft <sup>2</sup>
Sto RFP	5 gal. pail	85-100 ft <sup>2</sup>	85-100 ft <sup>2</sup>
Sto Primer/Adhesive-B	50 lb. bag	95-110 ft <sup>2</sup>	80-95 ft <sup>2</sup>
Sto Primer/Adhesive	5 gal. pail	165-175 ft <sup>2</sup>	145-155 ft <sup>2</sup>
Sto BTS® <i>Silo</i>	60 lb. bag	140-160 ft <sup>2</sup>	120-140 ft <sup>2</sup>

<b>ADH/BASE COAT</b>	<b>PACKAGE</b>	<b>SHEATHING OR MASONRY</b>
Sto BTS®	38-47 lb. bag	55-70 ft <sup>2</sup>
Sto BTS® <i>FastSet</i>	60 lb. bag	65-85 ft <sup>2</sup>
Sto Primer/Adhesive-B	50 lb. bag	55-70 ft <sup>2</sup>
Sto Primer/Adhesive	5 gal. pail	95-115 ft <sup>2</sup>
Sto BTS® <i>Silo</i>	60 lb. bag	65-85 ft <sup>2</sup>

<b>1/2 TIME PRODUCTS</b>	<b>PACKAGE</b>	<b>VARIOUS COVERAGE INFORMATION</b>
Sto BTS® <i>FastSet</i>	60 lb. bag	65-85 ft <sup>2</sup> as combined adhesive/base coat

<b>FINISHES</b>	<b>PACKAGE</b>	<b>RFP OR PRIMED SURFACE</b>	<b>UNPRIMED SMOOTH SURFACE</b>
Stolit® 1.0	5 gal. pail	155-165 ft <sup>2</sup>	140-155 ft <sup>2</sup>
Stolit® 1.5	5 gal. pail	135-145 ft <sup>2</sup>	120-130 ft <sup>2</sup>
Stolit R1.5	5 gal. pail	145-155 ft <sup>2</sup>	135-145 ft <sup>2</sup>
Stolit <i>Freeform</i>	5 gal. pail	130 ft <sup>2</sup> @ 1/16" 65 ft <sup>2</sup> @ 1/8" 40 ft <sup>2</sup> @ 3/16"	Approx. 10% less Approx. 10% less Approx. 10% less
Sto Swirl Finish	5 gal. pail	130-140 ft <sup>2</sup>	120-130 ft <sup>2</sup>
Sto Medium Sand Finish	5 gal. pail	120-130 ft <sup>2</sup>	110-120 ft <sup>2</sup>
Sto Fine Sand Finish	5 gal. pail	150-160 ft <sup>2</sup>	140-150 ft <sup>2</sup>
Stolit® Lotusan® 1.0	5 gal. pail	155-165 ft <sup>2</sup>	145-155 ft <sup>2</sup>
Stolit® Lotusan® 1.5	5 gal. pail	135-145 ft <sup>2</sup>	120-130 ft <sup>2</sup>
Stolit® Lotusan® <i>Freeform</i>	5 gal. pail	130 ft <sup>2</sup> @ 1/16" 65 ft <sup>2</sup> @ 1/8" 40 ft <sup>2</sup> @ 3/16"	Approx. 10% less Approx. 10% less Approx. 10% less

<b>FINISHES</b>	<b>PACKAGE</b>	<b>RFP OR PRIMED SURFACE</b>	<b>UNPRIMED SMOOTH SURFACE</b>
Sto Decocoat	5 gal. pail	125 ft <sup>2</sup> sprayed 135 ft <sup>2</sup> troweled	Not Recommended
Sto GraniTex®	5 gal. pail	60-80 ft <sup>2</sup>	Not Recommended
StoCreativ Granite	5 gal. pail	75-85 ft <sup>2</sup>	Not Recommended
Stolit 2.0	5 gal. pail	90-100 ft <sup>2</sup>	75-85 ft <sup>2</sup>
Stolit 3.0	5 gal. pail	60-70 ft <sup>2</sup>	55-65 ft <sup>2</sup>
Stolit R2.0	5 gal. pail	90-100 ft <sup>2</sup>	85-95 ft <sup>2</sup>
Stolit R3.0	5 gal. pail	60-70 ft <sup>2</sup>	55-65 ft <sup>2</sup>
Stolit .75	5 gal. pail	180-190 ft <sup>2</sup>	170-180 ft <sup>2</sup>

NOTE: Sto Limestone finish is achieved in a two step application - first a finish coat of Stolit 1.0, then a finish coat of Stolit *Freeform*, installed "tight" over the dried Stolit 1.0

<b>COATINGS</b>	<b>PACKAGE</b>	<b>RECOATING</b>	<b>MASONRY</b>
StoSilco Lastic	5 gal. pail	250-300 ft <sup>2</sup> -2 coats	250-300 ft <sup>2</sup> -2 coats
Stolastic Smooth	5 gal. pail	250-300 ft <sup>2</sup> -2 coats	250-300 ft <sup>2</sup> -2 coats
StoCoat Acryl	5 gal. pail	500-550 ft <sup>2</sup> -2 coats	400-450 ft <sup>2</sup> -2 coats
StoCoat Acryl Plus	5 gal. pail	400-450 ft <sup>2</sup> -2 coats	350-400 ft <sup>2</sup> -2 coats
StoCoat Lotusan	5 gal. pail	500-600 ft <sup>2</sup> -2 coats	400-500 ft <sup>2</sup> -2 coats



STOGUARD®	PACKAGE	COVERAGE
Sto Gold Fill	5 gal. pail	175-250 linear feet (53-76 m)
Sto Gold Coat	5 gal. pail	Dens-Glass® Gold: 425-525 ft <sup>2</sup> (39-49m <sup>2</sup> ) Exterior Gypsum: 550-650 ft <sup>2</sup> (51-60 m <sup>2</sup> ) Plywood: 550-650 ft <sup>2</sup> (51-60 m <sup>2</sup> )
StoGuardMesh 4.25"	150' Roll	150 linear feet
StoGuardMesh 9.5"	150' Roll	150 linear feet; 118 ft <sup>2</sup>

\*Dens-Glass Gold is a registered trademark of G-P Gypsum Corp.

*Note: Coverage rates are based upon actual field experience and are believed to be reliable. Please be advised that coverage rates can vary based upon the type of application methods employed and level of craftsmanship. Sto Corp. hereby disclaims any and all liability for rates of coverage which may differ from those published herein.*

## EIFS Industry Adhesives Coverage

PRODUCT	LBS/ PAIL	TROWEL NOTCH WIDTH	TROWEL NOTCH HEIGHT	SPACE BETWEEN NOTCHES	SF/PAIL
<b>Sto Dispersion Adhesive</b>	<b>64</b>	3/16"	3/8"	1-3/4"	<b>350</b>
Dryvit ADEPS	60	3/8"	1/2"	1-1/2"	160
Senergy Senerquick	50	3/16"	3/16"	3/16"	275
Parex 3.03	55	5/16"	5/16"	3/4"	270

### Metric Conversions

ft. to m, multiply by 0.3048

in. to mm, multiply by 25.4

gal. to liters (L), multiply by 3.78541

lbs. to kg, multiply by 0.453592

ft<sup>2</sup> to m<sup>2</sup>, multiply by 0.09290304

### Where to find help:

- Visit Sto's Web site: [www.stocorp.com](http://www.stocorp.com)
- Technical Service Hotline: 1-800-221-2397
- Your local Sto Distributor
- Your Sto Sales Representative





## **StoMachine Technology**

# StoSilo

The StoSilo System was introduced in Europe in the mid 1990's. In that short time, it has revolutionized the application of EIFS adhesives and base coats. Now the StoMachine Technology Program is bringing this unique technology to North America, giving customers a competitive edge by shortening the length of time on jobs and reducing labor costs.

## The StoSilo Combo

The StoSilo Combo consists of a dry material hopper, an integral continuous mixer, and variable speed pump. The remote control pump allows the person at the spray nozzle to be in full control of the machine up to 210 feet (64 m) away. No one is needed to attend the machine or hand mix pails of material.

The StoSilo Combo comes in two sizes: 1.0 m<sup>3</sup> and 3.0 m<sup>3</sup>. The 1.0 m<sup>3</sup> StoSilo holds approximately, 40 x 60-lb (27 kg) bags of Sto BTS Silo, while the 3.0 m<sup>3</sup> StoSilo holds approximately, 120 x 60-lb (27 kg) bags of material. Sto BTS Silo is a specially engineered material developed for use with the StoSilo System.

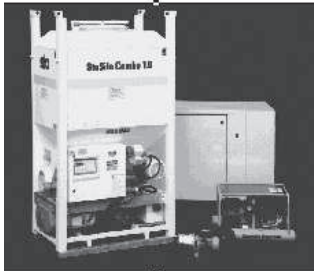
<b>Features</b>	<b>Benefits</b>
One self-contained system	Easy to handle; saves time and space in loading
Large dry storage capacity	Reduces need to handle or move bags
Weathertight, secure storage container	Reduces material loss due to weather conditions or theft
Totally automated system	Reduces labor costs; enhances quality control
Spray application of adhesive and base coat	Increases productivity
Adhesive/base coat formulated and tested for StoMachine Technology	Optimum material consistency for spraying
Variable speed settings	Provides flexibility for specific job conditions
Continuously controlled water addition	Consistent mix every time
Single source supply for equipment	Streamlines set-up and production; no need to deal with multiple organizations
Quick change components	Reduces down-time for part changes

# Three StoSilo Packages Available

The StoMachine Technology Program offers short-term and long-term leases on three different StoSilo packages to fit your specific job site needs. If problems do occur, call the StoMachine Technology Helpline: (888)-522-0184 available 8 a.m. - 5 p.m. (EDT) for operational assistance by a StoMachine Technology technician. If there is no answer, leave a message and calls will be returned within one hour during hours of operation or normal business hours.



**StoSilo System**  
Includes the StoSilo Combo, air compressor and water pump.



**StoSilo Power**  
Includes the StoSilo Combo, air compressor and water pump.



**StoSilo Mobile**  
Includes the StoSilo Combo, air compressor, water pump and generator mounted on a truck with one ton (907 kg) of towing capacity TO 3/4 ton or larger truck with a Class III towing package equipped with electric brakes; a 2-15/16" ball is required.



The StoSilo Finish Hopper is a galvanized aluminum hopper that may be used with the StoSilo pump to spray various Sto "bucket" products (see product equipment matrix for specific products). The StoSilo Finish Hopper is attached to the StoSilo pump drawer and allows spraying of some products up to 210 feet.

# StoSilo Comparative Job Data

	Project #1		Project #2		Compare YOUR numbers	
<b>Project Type:</b>	<b>Church Building</b>		<b>Hotel</b>			
<b>Project Description:</b>	L-shaped two story church building with partial one-story elevation. Medallions around windows and doors.		28' tall L-shaped hotel with windows and seven 150 ft <sup>2</sup> gables			
<b>Project Location:</b>	Shawnee, Kansas		Chicago, Illinois			
<b>Project Size (SF):</b>	20,000 (SF)		27,500 (SF)			
<b>Conventional/StoSilo</b>	<b>Conv. Appl.</b>	<b>StoSilo System Tech</b>	<b>Conv. Appl.</b>	<b>StoSilo System Tech</b>	<b>Conv. Appl.</b>	<b>StoSilo System Tech</b>
<b>Crew Size:</b>	6	5	4	4		
<b>Adhesive</b>						
Square feet (ft <sup>2</sup> ) per man per day	450	1,000	400	1,000		
Production per day (crew size * ft <sup>2</sup> /man/day)	2,700	5,000	1,600	4,000		
Number of production days (project size / daily prod)	7	4	17	7		
<b>Base Coat</b>						
Square feet (ft <sup>2</sup> ) per man per day	450	1,000	400	1,000		
Production per day (ft <sup>2</sup> ) (crew size * ft <sup>2</sup> /man/day)	2,700	5,000	1,600	4,000		
Number of production days (project size/daily production)	7	4	17	7		
<b>Adhesive + Basecoat Totals</b>						
Adhesive Production Days	7	4	17	7		
Base Coat Production Days	7	4	17	7		
Total BC + ADH Production Days	14	8	34	14		
Total BC + ADH Man Hours (crew size * prod days * 8 hrs)	672	320	1,088	448		
Average Man Cost Per Hour (wages, benefits, comp, etc)	\$35	\$35	\$48	\$48		
Total Labor Costs (Total Man Hours * Man Cost Per Hour)	\$23,520	\$11,200	\$52,224	\$21,504		
<b>LABOR SAVINGS</b>	<b>\$12,320</b>		<b>\$33,720</b>			

# Portable Equipment

## Sto M-8 Spray Pump

The Sto M-8 Spray Pump reduces the amount of labor required to hand-apply basecoats, adhesives, primers, coatings and finishes. Additionally, the Sto M-8 contains a technologically advanced and patented peristaltic pump. The advantage: rhythmic, wavelike motion of the pressure disc allows for the pumping of low- and high-viscosity materials. Its lightweight and portable frame can be moved quickly and used on interior and exterior applications.



### Features

- Versatile, spray application of most Sto products
- Portable and lightweight
- Optional mobile cart
- Operates on 110V power
- Reversible pump
- Low maintenance
- Remote control On/Off at nozzle
- Various hose lengths
- Interchangeable accessory parts with the StoSilo
- Multiple accessory kits available; various tips and hose sizes
- Power Roller optional attachment
- Easy clean-up

### Benefits

- Reduces labor; one pump for many products
- Use interior and exterior
- Additional ease of movement around job sites
- Variable pressure setting
- Reduces pressure in hose safely when needed
- Little to no downtime
- Eliminates need to tend the pump
- Configure hose as needed; eliminates staging on scaffolding
- StoSilo users stock one set of parts for both
- Versatile for different job and product applications
- Roll smooth coatings with continuous material flow
- Reduces time and labor

## StoMachine Technology Product Reference Equipment for Mixing and Spraying Sto Products

The following chart provides general guidance for selection of spraying equipment to be used with Sto products. Because all spray application projects are different, we cannot recommend a specific orifice size or pressure setting for each material. Test areas are always recommended to be sure of desired results.

Mixing and Spraying Equipment							
Product A	Airless Sprayer	Hopper Sprayer	Bottom-Feed Pistol	Pressure Pot	StoM-8 Spray Pump	S-25 Mixer	StoSilo Combo
<b>CONDITIONERS</b>							
Sto Plex WY	Yes	NR	Yes	Yes	Yes, w/ Power Roller	NR	NR
Sto Leveler	NR	Yes	NR	NR	NR	Yes	<b>Recommended</b>
Sto Primer Sand	Requires Filter Removal	Yes	Yes	NR	<b>Recommended</b>	NR	Yes w/Hopper Attachment
Sto Primer Smooth	Yes	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes w/Hopper Attachment
<b>ADHESIVES</b>							
Sto BTS® Silo	NR	Yes	NR	NR	Yes	<b>Recommended</b>	<b>Recommended</b>
Sto BTS®	NR	Yes	NR	NR	Yes	<b>Recommended</b>	NR
Sto Primer/Adhesive-B	NR	Yes	NR	NR	Yes	<b>Recommended</b>	NR
Sto Primer/Adhesive	NR	Yes	NR	NR	Yes	NR	NR
Sto Flexyl	NR	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes
<b>BASE COATS</b>							
Sto BTS® Silo	NR	Yes	NR	NR	Yes	<b>Recommended</b>	<b>Recommended</b>
Sto BTS®	NR	Yes	NR	NR	Yes	<b>Recommended</b>	NR
Sto Primer/Adhesive-B	NR	Yes	NR	NR	Yes	<b>Recommended</b>	NR
Sto Primer/Adhesive	NR	Yes	NR	NR	Yes	NR	NR
Sto RFP	NR	Yes	NR	NR	<b>Recommended</b>	NR	Yes w/Hopper Attachment
Sto Flexyl	NR	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes
<b>FINISHES</b>							
Sto Finishes (all; see also coatings)	NR	Yes	Limited by Aggregate Size	NR	<b>Recommended</b>	NR	Yes w/Hopper Attachment



# StoMachine Technology Product Reference

## Equipment for Mixing and Spraying Sto Products

<b>Mixing and Spraying Equipment</b>							
Product	Airless Sprayer	Hopper Sprayer	Bottom-Feed Pistol	Pressure Pot	StoM-8 Spray Pump	S-25 Mixer	StoSilo Combo
<b>COATINGS</b>							
StoCoat Acryl	Yes	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes w/Hopper Attachment
StoSilco® Shield	Yes	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes w/Hopper Attachment
Stolastic	Yes	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes w/Hopper Attachment
StoSilco® Lastic	Yes	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes w/Hopper Attachment
Sto Decocoat	NR	Yes	NR	NR	<b>Recommended</b>	NR	NR
Sto GraniTex®	NR	<b>Recommended</b>	NR	NR	NR	NR	NR
StoCoat Acryl Plus	Yes	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes w/Hopper Attachment
StoCoat™ Color Sand	NR	Yes	Limited by Aggregate Size	NR	<b>Recommended</b>	NR	Yes w/Hopper Attachment
<b>WATERPROOFING/ AIR BARRIERS</b>							
Sto Gold Coat®	NR	Yes	Yes	NR	<b>Recommended</b>	NR	Yes w/Hopper Attachment
Sto Gold Fill®	NR	NR	NR	NR	<b>Recommended</b>	NR	Yes w/Hopper Attachment

# StoMachine Technology Product Reference

## Equipment for Mixing and Spraying Sto Products

Mixing and Spraying Equipment								
Product	Airless Sprayer	Hopper Sprayer	Bottom-Feed Pistol	Pressure Pot	StoM-8 Spray Pump	S-25 Mixer	StoSilo Combo	
<b>CONCRETE FAÇADE &amp; EXTERIOR REPAIR</b>								
Sto Bonding and Anti-corrosion agent	NR	<b>Recommended</b>	NR	NR	NR	NR	NR	NR
Sto Clear Coat Sealer	Yes	NR	Yes	Yes	Yes, w/ Power Roller	NR	NR	NR
Sto Full Depth Repair Mortar CI	NR	NR	NR	NR	NR	<b>Recommended</b>	NR	NR
Sto Trowel Grade Mortar	NR	NR	NR	NR	NR	NR	NR	NR
Sto Skim Coat	NR	Yes	NR	NR	NR	Yes	<b>Recommended</b>	
Sto Watertight Coat*	NR	Yes	Yes	Yes	<b>Recommended</b>	NR	Yes	

\*Call the StoMachine Technology Hotline at (888) 522-0184 for special instructions for spraying Sto Watertight Coat.

### Notes:

- 1) If the Sto product that interests you does not appear above, it is not currently recommended for mixing or spraying applications.
- 2) "Yes" – mixing and/or spraying the subject product with this type of equipment is possible.  
"Recommended" - this equipment is the best choice for mixing and/or spraying the product.  
"NR" – this equipment is not recommended for mixing and/or spraying this product.
- 3) We cannot recommend specific orifice sizes and pressure settings because they will vary with the equipment being used and the desired finished appearance. We suggest preparing a test area for review using the equipment, materials and methods proposed for the job.
- 4) Specific questions about use of the Sto M-8 Spray Pump, the Sto S-25 Continuous Mixer and the StoSilo Combo should be directed to the StoMachine Technology group at (888) 522-0184.

# Sto Jet Mixer Technology Provides Fast Delivery of Finishes

Most Sto Distributors now have the Sto Jet Mixer Technology Program:

- On-site color mixing for finishes
- Pre-programmed with Sto color formulations for exact pigment dispensing
- Patented mixing cups produce smooth, even blend
- Internet tint formula access
- Better system than competitors' mixing systems
- Result – faster delivery, more accurate color

## Features

Over 85,000 color formulas immediately available for point of sale tinting via Distributor Internet Tint Formula Access

Half gallon sample program

Custom color formulas

Utilization of Sto Corp. Distributor Tinting Application

Centralized automated color lab

## Benefits

Correct color when you need it

Fast point of sale sample production

Developed and furnished same or next day

An easy-to-use custom computer program developed to manage point of sale color (via the internet)

Over 60 years of combined color formulation experience







## Estimating

# Average Labor Production

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**Sto Product:**

**Production  
(1 man per 8 hr. day)**

## Adhesives/Fasteners

- Sto BTS w/EPS boards 400 sq. ft. (37.2 sq. m)
- Sto Dispersion Adhesive w/EPS Boards 700 sq. ft. (65.0 sq. m)
- Sto Flexyl w/Extruded Boards 500 sq. ft. (46.5 sq. m)

## Base Coat:

- Sto Base Coat: Sto RFP and Sto Mesh 500 sq. ft. (46.5 sq. m)
- Sto Base Coat: Sto BTS and Sto Mesh 400 sq. ft. (37.2 sq. m)
- Sto Base Coat: Sto RFP and Sto Armor Mat 400 sq. ft. (37.2 sq. m)
- Sto Base Coat: Sto BTS and Sto Armor Mat 350 sq. ft. (32.5 sq. m)

## Finishes

- Stolit 1.0, Stolit Lotusan 1.0, Sto Fine Sand 900 sq. ft. (83.6 sq. m)
- Stolit 1.5, Stolit Lotusan 1.5, Sto Medium Sand 800 sq. ft. (74.3 sq. m)
- Stolit R 1.5, Sto Swirl 800 sq. ft. (74.3 sq. m)
- Stolit 2.0 700 sq. ft. (65.0 sq. m)
- Stolit R2 600 sq. ft. (55.7 sq. m)
- Stolit *Freeform*, Stolit Lotusan *Freeform* 600 sq. ft. (55.7 sq. m)
- Sto Decocoat 800 sq. ft. (74.3 sq. m)

## Miscellaneous

- Roller applied paints, primers, sealers 1600 sq. ft. (148.6 sq. m)
- Fill & rasping 900 sq. ft. (83.6 sq. m)

# Estimator Checklist

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Job \_\_\_\_\_ Date \_\_\_\_\_

Estimator \_\_\_\_\_

- \_\_\_\_\_ Removal of trees, shrubs, etc.
- \_\_\_\_\_ Ground coverings
- \_\_\_\_\_ Excavation/leveling of terrain
- \_\_\_\_\_ Scaffolding & Setup
- \_\_\_\_\_ Demolition
- \_\_\_\_\_ Chipping or scraping substrate
- \_\_\_\_\_ Sandblasting
- \_\_\_\_\_ Cleaning
- \_\_\_\_\_ Masking
- \_\_\_\_\_ Tenting
- \_\_\_\_\_ Heating
- \_\_\_\_\_ Sto Plex W
- \_\_\_\_\_ Leveling w/ \_\_\_\_\_
- \_\_\_\_\_ Moisture Protection
- \_\_\_\_\_ Backwrapping
- \_\_\_\_\_ Fastening w/ \_\_\_\_\_
- \_\_\_\_\_ Insulation
- \_\_\_\_\_ Fill & Rasp
- \_\_\_\_\_ Rout Grooves
- \_\_\_\_\_ Sto Base Coat w/
- \_\_\_\_\_ Sto Armor Mat
- \_\_\_\_\_ Sto Mesh
- \_\_\_\_\_ Sto Primer
- \_\_\_\_\_ Caulking (Dissimilar Mat.)
- \_\_\_\_\_ Sto Finish
- \_\_\_\_\_ Expansion Joints
- \_\_\_\_\_ Windowsill Flashing
- \_\_\_\_\_ Parapet Top Flashing
- \_\_\_\_\_ Cleanup
- \_\_\_\_\_ Shipping







## General Information

# StoTherm® EIFS Installation Inspection Checklists

Job Name \_\_\_\_\_

Location \_\_\_\_\_

No.	Inspection Item Description	Conformance	
		Yes	No
	<b>Pre-Construction</b> <ul style="list-style-type: none"> <li>• Verify roles and responsibilities</li> <li>• Verify sequencing of work</li> <li>• Verify conformance of details</li> <li>• Verify dew point analysis and location of vapor retarder (if needed)</li> </ul>		
1	Terminations at grade		
2	Ultra-High impact resistance		
3	Window and door sill flashing		
4	Window and door head flashing		
5	Roof/Wall diverter flashing		
6	Saddle Flashing		
7	Location of expansion joints		
8	Slope and thickness of trim and features		
9	Parapet or eave condition		
10	Expansion joints with sealant and sealant at all penetrations and attachments through system		
	<b>Site Conditions</b>		
1	Material Storage—verify adequacy of material storage areas and that materials are properly stored.		
2	Substrate—verify that the substrate is correct , substrate condition is clean, dry, free from defects, in plane, and verify substrate installation and attachment in conformance with manufacturer’s recommendations.		
	<b>Moisture Protection</b> <ul style="list-style-type: none"> <li>• Barrier EIFS</li> </ul>		
3a	Verify protection of rough openings in conformance with Sto Details 1.23a and 1.24a.		
	<ul style="list-style-type: none"> <li>• EIFS with Drainage</li> </ul>		
3b	StoGuard®—verify protection of rough openings in conformance with Sto Detail 10.23a. Note if any areas of sheathing are not covered with Sto Gold Coat®.		
3c	Building Paper—verify protection of rough openings in conformance with Sto Details 8.23 or 9.23.		
3d	House Wrap—verify protection of rough openings in conformance with Sto Details 8.23 or 9.23. Verify installation of house wrap in conformance with manufacturer’s instructions.		
4	Flashing—note critical flashing locations on the structure and verify that flashing is present. Verify that flashing end dams are incorporated into the flashing material beneath windows and doors.		

No.	Inspection Item Description	Conformance	
		Yes	No
	<b>EIFS Installation</b>		
1	Backwrapping—verify the presence and attachment of backwrap reinforcing mesh (Sto Detail Mesh) at system terminations prior to the application of EPS board.		
	<b>Adhesive Installation</b>		
2	Verify application of adhesive in the proper direction with proper size notched trowel.		
	<b>EPS Board Installation</b>		
3	Verify minimum 6" overlap of sheathing joints.		
4	Verify EPS board joints tightly abutted.		
5	Verify EPS board joints staggered.		
6	Verify EPS boards interlocked at inside and outside corners.		
7	Verify "L" cut of EPS board around openings.		
8	Verify adequate attachment of EPS board by pulling freshly applied board and checking for roughly equal amount of adhesive on substrate and on EPS board.		
9	Verify termination of EPS board with proper gap at abutting elements such as windows, doors, other penetrations, and at expansion joints.		
10	Verify proper thickness of EPS board at reveals (minimum 3/4") and projecting features (maximum 4") and proper slope (minimum 27°).		
	<b>Rasping and Slivering of EPS Board</b>		
11	Identify areas of EPS board joints that must be slivered or filled with spray foam.		
12	Verify that entire EPS board surface has been rasped.		
	<b>Base Coat and Mesh Installation</b>		
13	Verify full embedment of backwrap reinforcing mesh along edges - no voids, or mesh color visible.		
14	Verify installation of diagonal mesh strips at corners of all openings.		
15	Verify installation of Sto Armor Mat with butt joints at areas indicated on drawings.		
16	Verify reveals reinforced with mesh and no excess base coat.		
17	Verify mesh overlaps of minimum 2-1/2".		
18	Verify double mesh reinforcement at corners.		
19	Verify no mesh color visible in the completed base coat application.		
	<b>Primer Application</b>		
20	Verify complete coverage of base coat with primer.		
	<b>Finish Application</b>		
21	Verify finish application in advance of direct sunlight exposure, working a wet edge toward unfinished area.		
22	Verify consistency of texture and color with sample or mock-up.		
23	Verify finish not installed into or over construction joints.		

No.	Inspection Item Description	Conformance	
		Yes	No
	<b>Sealants</b>		
1	Verify priming (if required) of joint surfaces.		
2	Verify properly sized backer rod installed to proper depth in joint.		
3	Verify installation of sealant to EIFS base coat and tooling of sealant.		
	<b>Final Inspection</b>		
1	Verify flashings extend beyond the outer face of the wall.		
2	Verify sealants are in place at system terminations and are fully adhered to joint surfaces.		
3	Verify uniform appearance of finished wall surface.		
4	Note dirt accumulation or physical damage that may have occurred during construction.		
5	Verify that at least one pail of finish is on hand or stored for touch-up and color matching in the event of future repairs or additions.		
6	Verify removal of construction materials and equipment, and waste material.		

Notes:

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# Technical Support

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To better serve the industry with technical assistance in design and application, Sto Corp. has set up a network of technicians experienced and trained in all aspects of Sto Products and systems. These technicians are employed by Sto Corp. and are available to assist you. For the number of the technician in your area, contact your local Sto Distributor or call **1-800-221-2397** (Atlanta, Georgia).

## www.stocorp.com Features

An easy to use reference source for the building professional to view, download and print:

- System guide specifications
- Guide detail drawings
- Building Code Approvals
- Product bulletins
- Tech Hotlines
- Material Safety Data Sheets (MSDS)
- Distributor locations
- Company information
- Color selection charts

## Sto Electronic Submittal System (ESS)

- Prepare a complete submittal package  
Including systems and product information;  
Optional inclusion of Specification, Warranty Schedule, Sample Warranty



**Notes:**

**Notes:**

**Sto Corp.**

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