

Class PI Polyiso Foam EIFS

AMERICA'S EIFS AND STUCCO COMPANY!

1. PRODUCT NAME

Total Lite PI

Exterior Insulated and Finish System (EIFS)

2. MANUFACTURER

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3. DESCRIPTION

Total Wall Class PI EIFS is a non-bearing exterior cladding for commercial and residential structures. This system is used to weatherproof, beautify and insulate any structure. The advantages of this exterior cladding system are:

- It provides an effective means for water to escape from the system and protects sheathing and framing from moisture damage.
- It is light weight and will not stress the design structure.
- It does not use interior space.
- It is highly energy efficient.
- The exterior insulation tends to move the dew point toward the outside of the wall.
- Any combination of color or texture can be achieved.
- The structure is easily accessorized with architectural enhancements made of the same materials as the wall system (arches, quoins, etc.).

Limitations:

Total Wall, Inc. products must be applied in temperatures of 40° F or higher. The freshly applied products must be protected from precipitation and the temperature maintained at 40° F or greater for 24 hours. Stored products must be covered and protected from sun and freezing conditions.

TOTAL LITE PI

Class PI EIFS

Framing

Approved Sheathing

Drainage Wrap

Polyiso Foam

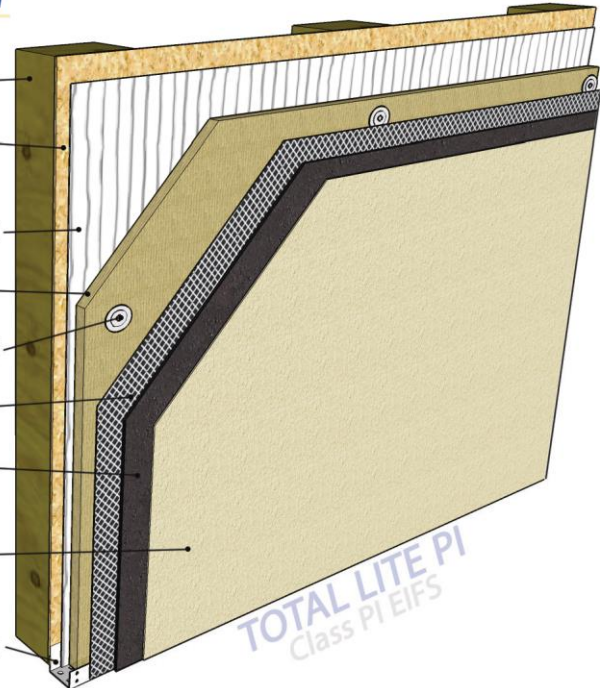
Total Fasteners

Total Mesh
(embedded in base coat)

Total Wall Base Coat

Total Wall Finish Coat

Drainage Track



Total Wall, Inc. products must be installed by certified Total Wall Qualified Applicators. Only registered applicator installations are eligible for a System Materials Warranty.

Total Wall, Inc. reserves the right to use certified inspectors on all phases of any installation.

Materials:

Total Wall Class PI Moisture Drainage EIFS consists of 5 layers or constituents.

1. Substrate
2. Moisture barrier
3. Rigid Insulation
4. Base Coat / Reinforcing mesh
5. Finish coat

Layer 1 Substrate

Approved moisture sensitive substrates are:

- Exterior gypsum
- Exterior grade plywood
- Oriented strand board

Approved non-moisture sensitive substrates are:

- DensGlass
- Cement board
- Masonry

Layer 2 Moisture Barrier

The moisture barrier is required over moisture sensitive sheathing and shall be:

- Tyvek StuccoWrap
- RainDrop HouseWrap
- Weather Trek.

It is used to cover the entire sheathing areas. The moisture barrier is lapped to prevent water from encountering any sheathing. Window and door openings typically receive two layers of barrier.

The corrugations in the Tyvek StuccoWrap provide a continuous drainage channel for water to safely exit the system.

At the bottom system termination, either a PVC Drainage Track or a standard back-wrap detail in lieu of the Drainage Track may be used.

Layer 3 Rigid Insulation

The rigid insulation board must be either Quick-R or Stucco-Shield II. The thickness must be a minimum of 1" and a maximum of 4".

The insulation boards are attached with class PB mechanical fasteners. The mechanical fasteners are required for this system and no adhesive is used to mount the boards to the wall in the primary layer. Adhesive may be used to attach architectural enhancements. Total Wall fasteners use a special design, non-corroding polypropylene head corrosion resistant screws.

- Type "W" is for wood
- Type "S" is for steel
- Type "H-LS" is for light gauge steel
- Type "M" is for masonry

The length of the fastener is determined by the thickness of the EIFS. For steel or wood, the fastener must be able to penetrate the framing members by at least 0.5". For masonry, the fastener must penetrate by at least 1". The fastener pattern density is specified by Total Wall, Inc. to meet wind load criteria and will be at least 1 fastener per ft² on average.

Layer 4 Base Coat and Reinforcing Mesh

Base Coat:

1. Total Wall T-2000 Soft Coat Base

This product is a dry powder that contains Portland cement, polymer and aggregates. It is available in 50 lb. bags. Mix with water using a jiffy mixer blade (or a mortar mixer) until a mortar-like consistency is achieved (about 5 quarts of water per 50 lb. bag). Pot-life will be from 30 to 45 minutes.

2. Total Wall EZ Base NCB (Non-Cement Base Coat)

This product is a ready to use, fully synthetic base coat. Mix before use. Product may be thinned by adding 4 - 6 ounces of water per 5-gallon pail of Total Wall EZ Base while mixing. Mix with a low speed jiffy mixer blade on a drill.

3. Total Wall Foam N' Base Coat ES

This product contains a liquid acrylic polymer plus specialty aggregates and modifiers. Mix in a 1:1 ratio by weight with Type I, II or I-II Portland cement at the job site. Add 16 - 24 ounces of water to a 5-gallon pail of mix to adjust to a mortar-like consistency. Wait 5 minutes then remix. Pot-life will be from 30 to 45 minutes. If the mix stiffens during use, add a few ounces of water and remix.

Reinforcing Mesh:

1. Standard Mesh

A polymer coated woven fiberglass mesh with a weight of ~ 4 ounces per yard and a relative impact resistance of 25-35 in/lbs. Runs of standard reinforcing mesh are lapped 2.5".

2. Enhanced Mesh

A polymer coated woven fiberglass mesh with a weight of ~ 6 ounces per yard and a relative impact resistance of 35-45 in/lbs. Runs of enhanced reinforcing mesh are lapped 2.5".

3. Intermediate Mesh

A polymer coated woven fiberglass mesh with a weight of ~ 11 ounces per yard and a relative impact resistance of 75-95 in/lbs. Runs of intermediate reinforcing mesh are lapped 2.5".

4. High Impact Mesh

A polymer coated woven fiberglass mesh with a weight of ~ 15 ounces per yard and a relative impact resistance of 180-220 in/lbs. Runs of High Impact Mesh are butted and covered with a layer of Standard Mesh.

5. Ultra-High Impact Mesh

A polymer coated woven fiberglass mesh with a weight of ~ 20 ounces per yard and a relative impact resistance of 230-240 in/ lbs.

Runs of Ultra-High Impact Mesh are butted and covered with a layer of Standard Mesh.

Layer 5 Finish Coat

The Finish Coat is the outer coating that gives color and texture to the system. The Finish coat also provides protection against weather, mildew, and pollution. All Total Wall Finishes are 100% acrylic based, giving a superior durability, and are available in two grades:

1. Premier Grade

Premier grade is rich with internally plasticized acrylic polymer, which provides for exceptional movement.

2. Journeyman Grade

Journeyman grade is designed for superior workability and performance.

Total Wall Finishes are available in the following textures and may be trowel or spray applied:

1. Swirl Coarse - generates a traditional wormhole appearance at ~ 0.078".

2. Ultra Coarse - generates a very coarse wormhole appearance at 0.098".

3. Swirl Fine - generates a traditional wormhole appearance at ~ 0.065".

4. ShotBlast Coarse - generates a coarse limestone appearance at ~0.059".

5. Shot Blast Medium - generates a coarse limestone appearance at ~ 0.078".

6. Shot Blast Fine - generates a very fine limestone appearance at ~ 0.044".

7. Freestyle - generates a variety of hand-applied textures at varying thicknesses.

8. Gemstone - generates a variety of marble grain looks using colored aggregates in a clear acrylic base at ~ 0.046".

Applicable Standards:

Total Wall, Inc. has had extensive testing performed on each individual system component and on the assembled system by

certified and code approved independent testing laboratories.

- International Code Council (ICC)
- International Building Code (IBC)
- National Evaluation Services (NES)
- Uniform Building Code
- National Building Code
- Standard Building Code
- International Residential Code

Professional Affiliations:

Total Wall, Inc. maintains memberships and involvement with these organizations:

- Exterior Design Institute (EDI)
- American Society for Testing and Materials (ASTM)
- Federation of Societies for Coatings and Technology (FSCT)
- Association of the Wall and Ceiling Industries (AWCI)
- Northwest Walls and Ceilings Bureau (NWCB)

4. TECHNICAL DATA

R-VALUE	~ R 6 per inch
Perm Rating	< 1.5 at 1"
Weight	~ 0.8 - 0.9 lb. per ft ² at 1.0"
Impact Rating	~ see mesh ratings

5. INSTALLATION

A. Substrate Preparation

- ✓ The wall must be clean and in sound condition. Any deteriorated, rotted, damaged or soft areas must be repaired before proceeding.
- ✓ The wall must be uniform. Planar irregularities greater than 1/4" in 10' must be addressed prior to installation.
- ✓ If the windows and doors have not been installed, wrap the window and door openings with a layer of moisture barrier and sealant tape. Be sure the nailing flange is sealed to the moisture barrier with sealant.
- ✓ Install head flashing at windows and doors.

B. Minimum Tools and Equipment

- ✓ Drill mixer 1/2" and jiffy mix-blade
- ✓ Drill and appropriate bits and tips (for mechanical fasteners)
- ✓ Razor knife
- ✓ Tape measure
- ✓ Level
- ✓ Rasp
- ✓ Bucket brush
- ✓ Chalk-line
- ✓ Stainless steel trowel
- ✓ Margin trowel
- ✓ Appropriate float
- ✓ Staple gun and staples
- ✓ Hot knife tool or fine-toothed saw for cutting foam boards

C. Mounting the Moisture Barrier,

A moisture barrier should be used over wood sheathing and exterior gypsum sheathing. Attach the moisture barrier to the entire wall sheathing. Be sure to lap the moisture barrier so water running down the wall will not get behind the paper. If you are using a PVC Drainage Track, lap the moisture barrier over the back vertical edge of the track. The moisture barrier should start a minimum of 1" below the sheathing. At the windowsills, tuck the second layer of moisture barrier under the first layer that was already wrapped into the window opening. Lap the moisture barrier over the back edge of any drainage track.

D. Mounting the Polyiso Board to the Wall

- a)** All insulation boards must meet specific performance criteria. These criteria include fire resistance, density minimums, and dimensional stability. Any discolored or warped boards should be set aside and used as cut trim pieces.
- b)** Fasten the insulation boards to the wall in a horizontal running bond pattern. Use the proper Total Wall, Inc. fastener at a minimum density of 1 fastener per ft² surface area. The fastener heads should be very slightly countersunk relative to the surface of the Polyiso boards. Keep the board joints as flush and even as possible. Back-wrap the outside insulation board edges with reinforcing mesh embedded in base coat. Back-wrapping of

board edges must be done at all stops (including the bottoms and tops of wall sections), openings (including doors and windows), abutments and protrusions. Back-wrapping is done using a short roll of standard reinforcing mesh. The short roll of mesh is called a starter or detail roll typically 9.5" wide. Embed the detail mesh with base coat. Start at the back side of the board and embed at least two inches of the detail mesh. Wrap the remainder of the detail mesh over the edge of the board and onto the board face and embed all the mesh with base coat.

Once the insulation board is placed, the detail mesh is then wrapped around to the face of the board and is embedded with base coat.

PVC accessories designed for the Class PB and MD systems may be used with the class PI system as well.

At doors, windows and other protrusions, be sure to leave room (1/2" minimum) for insertion of backer-rod and caulk sealant between the EIF System and the edge of the door, window, or other protrusion in the wall. At doors and windows, avoid having the board joints line up at the corners. In the main wall areas, avoid having Polyiso board joints line up with sheathing joints. These joints must be offset by 3" or more.

- c)** Use low expanding urethane foam such as EnerFoam or Wind-Lock Foam To Foam, to fill gaps between board joints. Cut away excess foam after it has cured.

E. Applying Base Coat and Mesh

- a)** Using a steel trowel, apply the base coat mix to the entire surface of the foam insulation boards in a 1/8" skim coat. Dab all fastener heads with base coat and allow to dry thoroughly before applying base coat to the remainder of the surface area.
- b)** Immediately embed the reinforcing mesh into the freshly applied base coat. Using a trowel, press the mesh into the base coat by starting at the center and working toward the edges. Press out the air voids and wrinkles to produce a smooth

base coat. Overlap mesh layers and edges by a minimum of 2.5". Overlay a 9" by 12" section of detail mesh placed at a 45° angle at each window corner and door corner to reinforce these natural stress points. Apply additional base coat as necessary to completely cover the mesh so that the fabric pattern is no longer visible.

c) Allow base coat to cure for a minimum of 18 hours while protecting from freezing and precipitation.

d) Remove any trowel marks by rubbing a pumice stone over the surface.

e) An optional layer of Total Wall primer may be applied to the base coat to assure finish coat color consistency. It is highly recommended to apply a primer before applying any vibrant finish color.

F. Applying the Finish

a) Apply the Total Wall Finish of choice directly out of the bucket onto the cured base coat using a stainless steel trowel.

b) Texture or float the finish to achieve the desired result.

c) Allow the finish to cure by protecting from freezing and precipitation for 24 hours.

G. Installing Sealant

Except for aesthetic joints, all isolation joints must be a minimum width of 1/2" and all expansion joints must be a minimum of 3/4" or 4 times the expected movement, whichever is greater.

Joint depth minimums are established by the sealant manufacturer and can be obtained from their literature or by calling Total Wall Technical Services.

All insulation board edges must be back-wrapped with mesh and base coat.

Apply a primer when recommended by the sealant manufacturer.

Insert a proper diameter backer rod to allow for its compression into the joint at a uniform depth. The depth is to allow for the desired thickness caulk bead.

The backer rod must be a closed cell polyethylene material or an extruded polyolefin with a non-absorbing skin.

Prepare the sealant according to the manufacturer's instructions.

Apply the sealant with a pressure gun and properly sized nozzle.

Fill the surface of the prepared joint with a smooth, solid, even bead of sealant. The bead must be free of sags, voids and wrinkles. Tool the joint to eliminate air pockets and force contact with the joint surfaces.

H. Architectural Enhancements

Architectural shapes such as quoins, corners, arches, and cornices can be added after the base coat has cured. Foam shapes can be mounted using Total Wall Blue Mastic Adhesive or EnerFoam and temporary or permanent mechanical attachment as applicable. These shapes are then base coated and finished to match the flat wall application described above.

Alternatively, finished shapes which match or accent the flat wall system can be mounted to the base coated or finished system. The quoins may be made at the job site, or ordered, along with any architectural enhancement, from Total Wall, Inc.

Architectural enhancements are prefabricated and ready to mount to the wall.

I. Precautions

When using a moisture barrier, this system will safely release water that inadvertently gets behind the EIFS. However, it is designed to be constructed to prevent water intrusion. Therefore, all details must be properly constructed. These details include all caulking details, kick out diverters, flashings, terminations, and utility penetrations.

6. AVAILABILITY

Total Wall, Inc. materials are manufactured in Wisconsin, and are purchased by Registered

Applicators through Total Wall Distributors. Contact your local distributor for a list of Registered Applicators or call Total Wall, Inc. (888-702-9915) customer service for assistance.

7. WARRANTY

Total Wall, Inc. warrants its system against delamination or material defects when properly installed by a Registered Total Wall Applicator according to current Total Wall, Inc. and job specifications in force at the time of installation.

No warranty stated herein must be effective until the goods and labor subject to said warranty have been paid for in full. Total Wall, Inc. makes no other express warranty or warranty of merchantability. Further, Total Wall, Inc. makes no warranty that the products of its manufacture are fit for any particular purpose.

Defects caused by misuse, improper storage, mishandling or improper application must not be warranted. Total Wall, Inc. is not responsible for damage or injury for materials not manufactured by Total Wall, Inc., acts of God, structural movement, or defective materials or their application on the warranted structure.