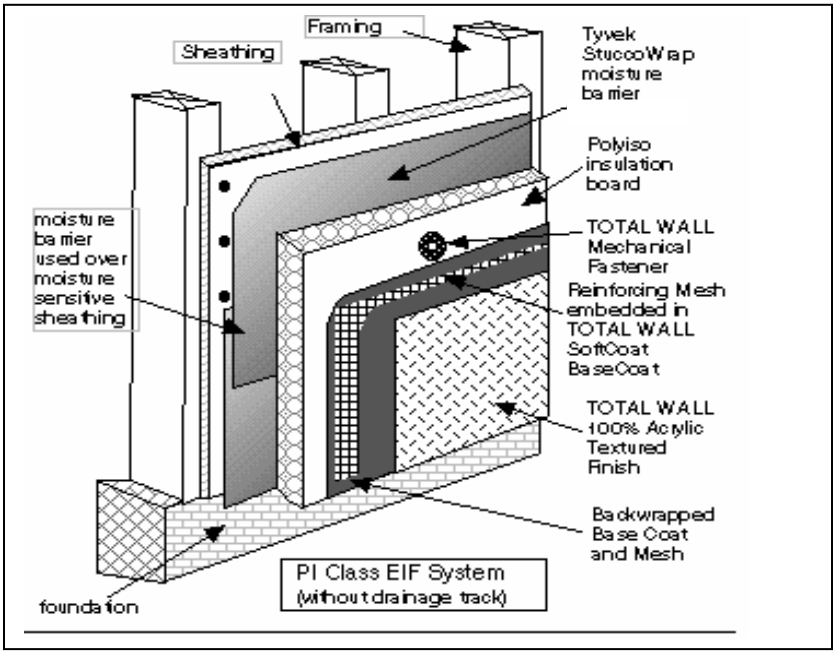
TOTAL WALL

SPECIFICATION

This Specification Data Sheet is designed to conform to a standard industry format used most frequently by Specifiers, Architects, and Registered Design Professionals.

1. PRODUCT NAME
TOTAL WALL Class PI (Polyisocyanate Board) Exterior Insulated and Finish System (EIFS)
2. MANUFACTURER
Total Wall, Inc.
P.O. Box 8098
Madison, WI 53708
Phone 888-702-9915
Fax 888-702-9916

390 Viking Circle
Rio, Wisconsin 539603.
DESCRIPTION
TOTAL WALL Class PI EIFS is a non-bearing exterior cladding for commercial and residential structures. The TOTAL WALL Class PI EIFS is used to weatherproof, beautify and insulate any structure. Among 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, quoines, etc).
Limitations: TOTAL WALL 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 24 hours. Stored



products should be under cover, protected from sun and freezing conditions.
TOTAL WALL products are to be installed by TOTAL WALL Qualified Applicators and hold a Certificate from TOTAL WALL. Their installations are eligible for a System Materials Warranty. TOTAL WALL 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.
Layer 1. Substrate
Approved moisture sensitive substrates are: exterior gypsum, plywood, and OSB. Approved non-moisture sensitive substrates are: DensGlass, cement board, and masonry.
Layer 2.Moisture Barrier
The moisture barrier is required over moisture sensitive sheathing and shall be Tyvek StuccoWrap, RainDrop or Weather Trek. It is used to cover the entire sheathing areas.
The moisture barrier is lapped to prevent water from coming in contact with 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 shall be either Quick-R or Stucco-Shield II. Thickness shall be a minimum of 5/8" and a maximum of 2".
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" fasteners are for wood, Type "S" fasteners are for steel framing, Type "H-L S" fasteners are for light gauge steel framing (20 gauge or thinner), and Type "M" fasteners 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 inch. For masonry, the fastener must penetrate by at least 1". The fastener pattern density is specified by TOTAL WALL to meet wind load criteria and will be at least 1 fastener per square foot on average.

Layer 4. Base Coat and Reinforcing Mesh

Base Coats:

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 Soft Coat Base Coat

This product contains a liquid acrylic polymer plus specialty aggregates and modifiers. Mix in a 1:1 ratio by weight with Type I 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 Meshes:

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

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 which gives them superior durability. TOTAL WALL Finishes are available in three grades: 1.Classic Grade - this is an equal or better to the EIFS industry standard finishes;
2. Premier Grade - this grade is rich in internally plasticized acrylic polymer, this elastomeric or stretchable property provides for exceptional movement and crack resistance.
3. Journeyman Grade - a siliconized finish designed for durability and to enhance applicator performance. TOTAL WALL Finishes are available in the following textures and may be trowel applied or spray applied:
1. Swirl Ultra Coarse- generates a traditional wormhole appearance at ~ 0.078";
2. Swirl Coarse- generates a traditional wormhole appearance at ~ 0.062";
3. Swirl Fine- generates a traditional worm hole appearance at ~ 0.049";
4. ShotBlast Medium - generates a moderate roughness limestone appearance at ~ 0.065";
5. ShotBlast Coarse- generates a coarse limestone appearance at ~ 0.080";
6. ShotBlast 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 has had extensive testing performed on our system components and on the assembled system by certified and code approved testing laboratories.
International Code Council International Building Code (IBC), applicable sections
National Evaluation Services Uniform Building Code (UBC); Standard Building Code, the National Building Code, and the IRC.
Professional Affiliations:

TOTAL WALL maintains memberships and involvement with these organizations:

EDI (Exterior Design Institute)

ASTM (American Society for Testing and Materials)

FSCT (Federation of Societies for Coatings and Technology)

AWCI (Association of the Walls and Ceilings Industries)

NWCB (Northwest Walls and Ceilings Bureau)

4. TECHNICAL DATA

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

5. INSTALLATION
A. Substrate Preparation
) The wall should be clean and in sound condition. Any deteriorated, rotted, damaged or soft areas must be repaired before proceeding.
) The wall should be uniform. Planar irregularities greater than 1 inch in 16 feet should be addressed prior to installation.
) If the windows and doors have not been installed, wrap the window and door openings with a layer or 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

) A mixer for the base and finish coats (1/2" drill and jiffy mix-blade or mortar mixer)
) A drill and appropriate bits and tips (for mechanical fasteners)
) A razor knife, tape measure, level, rasp, bucket brush and chalk-line
) A hot knife tool or fine-toothed saw for cutting foam boards
) A stainless steel trowel, a margin trowel, and appropriate float
) A staple gun and staples.

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 that 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 1inches below the sheathing. At the window sills, 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 fastener at a minimum density of 1 fastener per square foot 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 9-1/2 inches 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 of 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 should 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 a skim coat of Soft Coat Base Coat mix to the fastener heads and allow to dry. Next, apply Base Coat mix to the surface of the foam insulation boards in a 1/8" skim coat.
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. Lap mesh layers and edges by a minimum of 2.5 inches. Overlay a 12 inch section of detail mesh placed at a 45^{o} 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.
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
With the exception of esthetic joints or where fillet beads are to be used, all isolation joints should be a minimum width of 1/2" and all expansion joints should 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 shall 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 should 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 pressure gun and properly sized nozzle. Fill the surface of the prepared join 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 during the middle or latter phases of the installation process. Foam shapes can be mounted directly to the substrate or over the existing base coated system as applicable. These shapes are then base coated and finished to match the flat wall application described above. Alternatively, completely finished shapes which match or accent the flat wall system can be mounted to the base coated or finished system. An example of an architectural enhancement is placing quoins (corner reveals) on the building corners. The quoins can be made at the job site or, they can be ordered (from American Prefab 888-702-9918)

completely 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-outs, flashings, terminations, and utility penetrations.

6. AVAILABILITY
TOTAL WALL materials are manufactured in Rio, WI and are purchased by Approved Applicators or Certified Applicators through TOTAL WALL Distributors. Contact your local Distributor or call 888-702-9915 for assistance.

7. WARRANTY
a) 5 System Warranty

TOTAL WALL, Inc. warrants its system against delamination, fading*, or material defects when properly installed by a Qualified TOTAL WALL Applicator according to current TOTAL WALL and job specifications in force at the time of installation. The Warranty must be requested before system installation and a properly completed and signed inspection check list must be submitted at the job completion prior to issuance of any Warranty. TOTAL WALL reserves the right to review any claim and make the final determination as to the validity of the claim and the cause of the claim. At no time shall the value of the Warranty exceed the original purchase price of the materials. Should TOTAL WALL receive a valid claim, TOTAL WALL, at its option, will either repair the damage, replace materials, or refund in US dollars for the amount of damaged TOTAL WALL materials.

* Fading is defined as a DE of 2.0 or greater on an ACS colorimeter. Base 4 (accent) colors are not Warranted against fading.

End of Specification
06-2006