



**1. Product Name**

- T-Wall Class MD Moisture Drainage Exterior Insulation and Finish System (EIFS)
- T-Wall Class PB Face-Sealed Soft Coat Exterior Insulation and Finish System (EIFS)

**2. Manufacturer**

Total Wall Inc.  
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**3. Product Description**

**BASIC USE**

Total Wall Exterior Insulation and Finish Systems (EIFS) are a non-bearing exterior cladding for commercial and residential structures. Total Wall EIFS are used to weatherproof, beautify and insulate any structure.

**COMPOSITION & MATERIALS**

T-WALL CLASS MD MOISTURE DRAINAGE EIFS  
T-Wall Class MD Moisture Drainage EIFS consists of 6 layers or constituents:

- Substrate
- Moisture barrier/drainage plane
- Attachment
- Rigid foam insulation
- Base coat and reinforcing mesh
- Finish coat

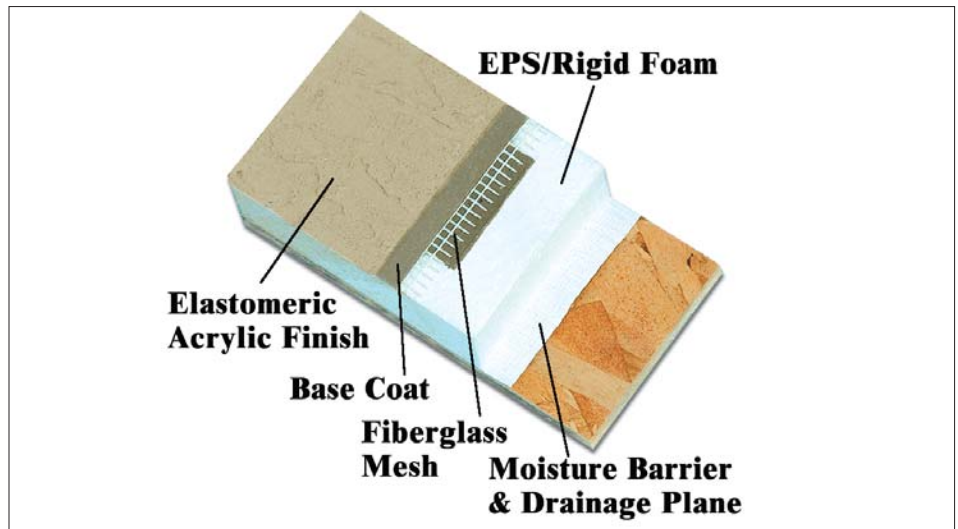
**Layer 1 - Substrate**

Approved substrates for Class MD Moisture Drainage are masonry such as brick, concrete block, concrete or stucco and sheathings such as cement board, siliconized-core gypsum sheathing, plywood, OSB and exterior grade gypsum sheathing.

**Layer 2 - Moisture Barrier/Drainage Plane**

Sheet-applied moisture barrier options:

- Tyvek StuccoWrap® or Greenguard® RainDrop™ HouseWrap (has integral drainage channels)



MD Moisture Drainage Exterior Insulation and Finish Systems

- Grade D building paper (requires grooved rigid foam to create the drainage plane)

**Liquid-Applied Membrane Moisture Barrier**

- Total Stop RA - A premixed, roller-applied membrane moisture barrier. The drainage channel is created using vertical ribbons of base coat adhesive

**Layer 3 - Attachment**

- Over Sheet-Applied Moisture Barrier - Use Total Wall or Wind-Lock® Wind-Devil mechanical fasteners to attach 1 3/4" or 2" (45 or 51 mm) polypropylene plates. Use the type and length of corrosion resistant screw suitable for the substrate, framing and thickness of the EPS rigid foam. Space fasteners at a density of 1 per square foot
- Over Liquid-Applied Moisture Barrier - Using a notched trowel (3/8" x 1/2" x 1 1/2"), apply either Total Wall T-2000 Soft Coat Base

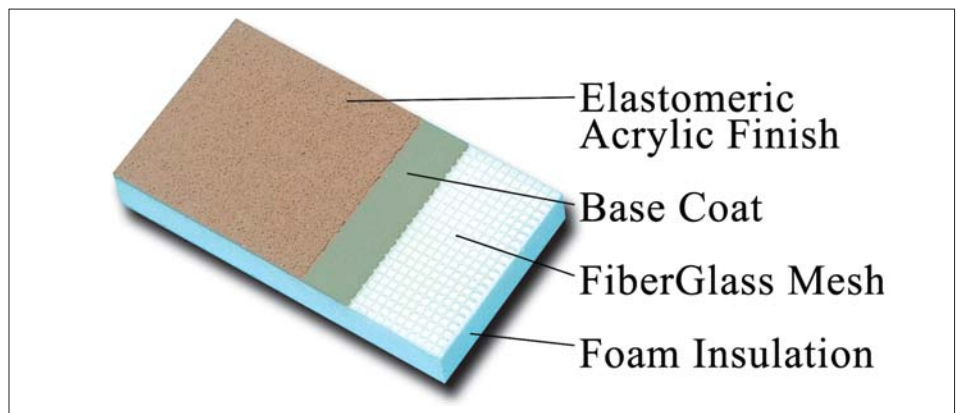
Coat, Total Wall Foam N' Base Coat or Total Wall Journeyman adhesive in 3/8" x 1/2" (9.5 x 12.7 mm) vertical ribbons, spaced 1 1/2" (38 mm) apart

**Layer 4 - Rigid Insulation**

The rigid insulation board shall be 1 pcf (16.02 kg/m<sup>3</sup>) expanded polystyrene (EPS) board manufactured in accordance with Total Wall specifications and meeting ASTM C578 Type I, Class A requirements. EPS board will be fully cured for dimensional stability and have a minimum thickness of 1" (25.4 mm) and a maximum thickness of 4" (102 mm).

**Layer 5 - Base Coat & Reinforcing Mesh**

- T-2000 Soft Base Coat & Journeyman Series Base Coats
- T-2000 Soft Coat Base Coat - This product is a dry powder that contains Portland cement, polymer and specialty aggregate



Class PB Face-Sealed Soft Coat Exterior Insulation and Finish Systems

gates. It is available in 50 lb (23 kg) bags. Mix with water using a Jiffy® mixer blade and drill (or a mortar mixer) until a mortar-like consistency is achieved (about 5 quarts of water per 50 lb bag). Allow to stand 15 minutes and remix

- T-Wall EZ Base NCB (Non-Cement Base Coat) - This ready-to-use, fully synthetic base coat may be thinned by adding 4 - 6 oz (113 - 170 g) of water (per 5 gal (19 L) pail of T-Wall EZ Base NCB) while mixing. Mix with a low speed Jiffy mixer blade on a drill. Before it dries, this product may be removed with soap and water
- T-Wall Foam N' Base Soft Coat Base Coat & Journeyman Series Foam N' Base - This product contains a liquid acrylic polymer and specialty aggregates and modifiers. Mix product at the jobsite in a 1:1 ratio by weight with Type I Portland cement. Add 16 - 32 oz (454 - 909 g) of water to a 5 gal (19 L) pail of mix to adjust to a mortar-like consistency. Allow to stand 5 minutes and then remix

**Reinforcing Meshes**

- Standard mesh - This polymer coated woven fiberglass mesh has an approximate weight of 4 oz/yd and relative impact resistance of 25 - 35 in-lb (2.8 - 4 N x m). Runs of enhanced reinforcing mesh are lapped 2.5" (64 mm)
- Enhanced mesh - This polymer coated woven fiberglass mesh has an approximate weight of 6 oz/yd and a relative impact resistance of 35 - 45 in-lb (4 - 5 N x m). Runs of enhanced reinforcing mesh are lapped 2.5" (64 mm)
- Intermediate mesh - A polymer coated woven fiberglass mesh with an approximate weight of 11 oz/yd and a relative impact resistance of 75 - 95 in-lb (8.5 - 10.7 N x m).

Runs of intermediate reinforcing mesh are lapped 2.5" (64 mm)

- High impact mesh - A polymer coated woven fiberglass mesh with an approximate weight of 15 oz/yd and a relative impact resistance of 180 - 220 in-lb (20.3 - 24.9 N x m). Runs of high impact mesh are butted and covered with a layer of standard mesh
- Ultra-high impact mesh - A polymer coated woven fiberglass mesh with an approximate weight of 20 oz/yd and a relative impact resistance of 230 - 240 in-lb (26 - 27.1 N x m). Runs of ultra-high impact mesh are butted and covered with a layer of standard mesh

**Layer 6 - Finish Coat**

The finish coat is the outer coating that gives color and texture to the system and 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 3 series:

- Premium Series - Designed for exceptional movement
- Classic Series - Designed for good movement and workability
- Journeyman Series - Designed for superior workability, good performance and economy

Total Wall finishes, available in the following textures, may be trowel or spray applied:

- Swirl Ultra Coarse - Generates a traditional wormhole appearance at 0.078" (1.98 mm)
- Swirl Coarse - Generates a traditional wormhole appearance at 0.062" (1.6 mm)
- Swirl Fine - Generates a traditional wormhole appearance at 0.049" (1.2 mm)
- ShotBlast Coarse - Generates a coarse limestone appearance at 0.080" (2.03 mm)

- ShotBlast Medium - Generates a coarse limestone appearance at 0.065" (1.7 mm)
- ShotBlast Fine - Generates a very fine limestone appearance at 0.044" (1.1 mm)
- FreeStyle - Generates a variety of hand-applied textures at varying thicknesses
- Gemstone - Generates a variety of marble grain looks using colored aggregates in a clear acrylic base at 0.046" (1.2 mm)

**T-WALL CLASS PB FACE-SEALED EIFS**

T-Wall Class PB Face-Sealed EIFS consists of 5 layers or constituents:

- Substrate
- Attachment
- Rigid foam insulation
- Base coat and reinforcing mesh
- Finish coat

**Layer 1 - Substrate**

Approved substrates for Class PB Face-Sealed EIFS are masonry such as brick, concrete block, concrete, or stucco and sheathings such as cement board and siliconized-core gypsum sheathing.

**Layer 2 - Attachment**

- Apply adhesive using ribbons or dabs of Total Wall Blue Mastic adhesive and cover approximately 1/3 of the insulation board. Blue Mastic is a premixed acrylic adhesive that can be thinned slightly with up to 12 oz (338 g) of water per 5 gal (19 L) pail
- Use Total Wall or Wind-Lock® Wind-Devil mechanical fasteners to attach 1 3/4" or 2" (45 or 51 mm) polypropylene plates. Use the type and length of corrosion resistant screw suitable for the substrate, framing and thickness of the EPS rigid foam. Space fasteners at a density of 1 per square foot

**Layer 3 - Rigid Insulation**

T-Wall Class PB Face-Sealed EIFS use the same rigid insulation board as the Class MD Moisture Drainage EIFS. Refer to the descriptions above.

**Layer 4 - Total Wall Base Coat & Reinforcing Mesh**

Total Wall Class PB Face-Sealed EIFS use the same base coat and reinforcing mesh as the Class MD Moisture Drainage EIFS. Refer to the descriptions above.

**Layer 5 - Finish Coat (Total Wall Premium Finish, Classic Finish & Journeyman Finish Series)**

Total Wall Class PB Face-Sealed EIFS use the same coats as the Class MD Moisture Drainage EIFS. Refer to the descriptions above.



Residential - Moisture Drainage MD

**LIMITATIONS**

Total Wall products must be applied in temperatures of 40 degrees F (4 degrees C) or higher. Freshly applied products must be protected from precipitation and the temperature maintained at 40 degrees F (4 degrees C) or greater for 24 hours. Stored products should be under cover, protected from sun and freezing conditions.

**4. Technical Data**

**APPLICABLE STANDARDS**

ASTM International

- ASTM B69 Standard Specification for Rolled Zinc
- ASTM B117 Standard Practice for Operating Salt Spray (Fog) Apparatus
- ASTM C67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile

- ASTM C150 Standard Specification for Portland Cement
- ASTM C203 Standard Test Methods for Brecking Load and Flexural Properties of Block-Type Thermal Insulation
- ASTM C209 Standard Test Methods for Cellulosic Fiber Insulating Board
- ASTM C297 Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
- ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
- ASTM C1135 Standard Test Method for Determining Tensile Adhesion Properties of Structural Sealants
- ASTM D968 Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
- ASTM D1784 Standard Specification for Rigid

- Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
- ASTM D2247 Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
- ASTM D2797 Standard Practice for Preparing Coal Samples for Microscopical Analysis by Reflected Light
- ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials
- ASTM E108 Standard Test Methods for Fire Tests of Roof Coverings
- ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

TABLE 1 PHYSICAL/CHEMICAL PROPERTIES OF CLASS MD & CLASS PB TOTAL WALL EIFS

Property and test method	Class PB Face-Sealed Soft Coat EIFS	Class MD Moisture Drainage EIFS
Surface burning characteristics (ASTM E84)	Flamespread 10, smoke developed 35	Flamespread 10, smoke developed 35
Full-scale fire test (ASTM E108)	Pass	Pass
Mildew resistance (Mil Std 810D, Method 508.3)	28 days - no growth	28 days - no growth
Full-scale impact loading (ASTM E695)	No damage	No damage
Sand abrasion, 500 L (ASTM D968)	260 L/ml, no deleterious effects	260 L/ml, no deleterious effects
Water resistance (ASTM D2247)	No deleterious effects	No deleterious effects
Salt spray, 300 hours (ASTM B117)	No deleterious effects	No deleterious effects
Water vapor transmission (ASTM E96)	1.79 perms (102.8 ng/(Pa x s x m <sup>2</sup> ))	1.79 perms (102.8 ng/(Pa x s x m <sup>2</sup> ))
Saturated freeze/thaw, 50 cycles (ASTM C67)	No deleterious effects	No deleterious effects
Tensile adhesion (ASTM C297)	No failure in adhesive, base or finish	No failure in adhesive, base or finish
Negative and positive wind load (ASTM E330)	Positive 102 psf (4.9 kPa) negative 118 psf (5.6 kPa)	Positive 0.079 kg/cm <sup>2</sup> , negative 0.079 kg/cm <sup>2</sup>
Wind driven rain, 5 gal/ft <sup>2</sup> /hr rainfall plus 65 mph (105 kph) wind (ASTM E331)	No penetration	No penetration
Impact resistance (ASTM D2797)	18 in-lb (2 N x m)	2.5 Newton-meters
Accelerated weathering, 2000 hours (ASTM G153)	No deleterious effects	No deleterious effects
Tensile bond (ASTM C209)	26 psi (179 kPa)	26 psi (179 kPa)
Flexural strength (ASTM C203)	5.55 mm deflection at 73.5 kg load	14.1 mm deflection at 33.4 kg load
Radiant heat fire test (NFPA 268)	Pass	Pass
ISMA multistory fire test (UBC 26-9)	Pass	Pass

- ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM E695 Standard Method for Measuring Relative Resistance of Wall, Floor, and Roof Construction to Impact Loading
- ASTM G153 Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
- ASTM G154 Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials

Federal Specifications & Standards - Fed Mil Spec 810D Test Method for Determining the Resistance to Mold and Fungus Growth

National Fire Protection Association (NFPA) - NFPA 268 Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source

**APPROVALS**

National Evaluation Service NER-646

**PHYSICAL/CHEMICAL PROPERTIES**

See Table 1.

**5. Installation**

**PREPARATORY WORK**

**T-WALL CLASS MD MOISTURE DRAINAGE EIFS**

- Ensure wall is clean and in sound condition. Repair any deteriorated, rotted, damaged or soft areas before proceeding
- The wall should be uniform. Planar irregularities greater than 1/4" (6.4 mm) in 16' (5 m)

- should be addressed prior to installation
- Prior to installation of windows and doors, wrap opening with moisture barrier and ensure that the nailing flange is sealed to the sheathing with sealant
- Install head flashing at windows and doors. Sill pan flashing is recommended
- Install weatherproofing tape to bridge all sheathing terminations between dissimilar materials, such as flashings and window and door openings

**METHODS**

**Liquid-Applied Moisture Barrier**

Using a margin trowel, putty knife or steel trowel, apply a tight skim coat of Total Stop RA directly into the sheathing joints. If the joints are greater than 1/8" (3.2 mm) in width, a 2.5 oz (71 g) reinforcing mesh must be used in addition to the Total Stop RA.

Allow the joint material to take an initial cure (approximately 4 hours). Using a good quality 1/2" nap roller, apply Total Stop RA to the entire sheathing exterior surface in a 15 - 20 mil (0.381 - 0.508 mm) wet coat. Allow the Total Stop RA to dry and inspect the membrane for voids or pinholes.

If voids or pinholes are visible, roll a second coat of Total Stop RA over the first coat at a 8 - 10 mil (0.203 - 0.254 mm) wet thickness. Allow to dry.

Install the PVC drainage track. Ensure that the drainage track extends below the soleplate and onto the concrete foundation. Apply weatherproofing tape over the back of the PVC track and onto the RA coated sheathing.

**Sheet-Applied Moisture Barrier**

Attach moisture barrier to the entire wall sheathing or substrate using staples. Be sure to lap the moisture barrier a minimum of 2" (51 mm) so that water running down the wall will not get behind the paper. When 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" - 2" (25.4 - 51 mm) 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.

**EPS Board Installation**

All insulation boards must meet specific performance criteria, including fire resistance density and dimensional stability. If Grade D building paper is the moisture barrier, the EPS boards must be grooved to create a drainage plane.

Attach the insulation boards to the wall in a horizontal running bond pattern. If attaching over liquid-applied moisture barrier, use Total Wall base coat adhesive applied in vertical ribbons to make the drainage plane.

If attachment is over sheet-applied moisture barrier, use Total Wall or Wind-Lock mechanical fasteners and polypropylene plates. Keep the board joints flush and even.

Backwrap the outside insulation board edges with reinforcing mesh embedded in Total Wall base coat. Backwrapping of board edges must be done at all stops (including the tops of wall sections and windows), unless PVC accessories are being used. Backwrapping is done using a roll of detail reinforcing mesh.

At doors, windows and other protrusions, allow 1/2" (12.7 mm) space for insertion of backer rod and caulk sealant between the EIFS 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, EPS board joints should be offset from the sheathing joints by 3" (76 mm) or more.

Rasp entire board surfaces with a coarse rasping tool. Insert a sliver of foam board or an approved urethane foam, such as EnerFoam® or WindLock® Foam 2 Foam, in any gaps between insulation boards.

**Base Coat & Reinforcing Mesh Application**

- Using a steel trowel, apply Soft Coat Base Coat mix to the surface of the foam insulation boards in a 1/8" (3.2 mm) skim coat
- Immediately embed the reinforcing mesh into the freshly applied base coat. Using a



Commercial - T-Wall Class PB Soft Coat

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 a minimum of 2 1/2" (64 mm). Overlay a 12" (305 mm) section of detail mesh. Place it at a 45 degree angle at each window/door corner to reinforce the natural stress points. Apply additional base coat as necessary until the fabric pattern is no longer visible

- Protect base coat from moisture and freezing temperatures. It must cure for a minimum of 18 hours
- Remove any trowel marks by rubbing a pumice stone over the surface

#### Finish Application

- Apply the finish of choice directly out of the bucket onto the cured base coat using a stainless steel trowel
- Texture or float the finish to achieve the desired result
- Protect finish from moisture and freezing temperatures. It must cure for a minimum of 24 hours

#### Sealant Application

Excluding aesthetic joints, or where fillet beads are to be used, all isolation joints should be a minimum width of 1/2" (12.7 mm), and all expansion joints should be a minimum of 3/4" (19.1 mm), or 4 times the expected movement, whichever is greater.

Contact the sealant manufacturer or Total Wall Technical Services for complete sealant installation guidelines.

#### PREPARATORY WORK

##### T-WALL CLASS PB FACE-SEALED EIFS

- Ensure wall is clean and in sound condition. Repair any deteriorated, rotted, damaged or soft areas before proceeding
- The wall should be uniform. Planar irregularities greater than 1/4" (6.4 mm) in 16' (5 m) spans should be addressed prior to installation
- If windows and doors have not been installed, wrap window and door openings with a layer or moisture barrier. Ensure the nailing flange is sealed to the moisture barrier with sealant
- Install head flashing at windows and doors

#### METHODS

- Attach Tyvek StuccoWrap moisture barrier to the entire wall sheathing or substrate. Lap the moisture barrier so that water running down the wall will not get behind the StuccoWrap. The

moisture barrier should extend approximately 1" - 2" (25.4 - 51 mm) below the sheathing at the lower termination

- Fasten the insulation boards to the wall in a horizontal running bond pattern. Use the proper Total Wall fastener at a minimum average density of 1 fastener per square foot of surface area. Keep the board joints as flush and even as possible
- Backwrap the outside board edges with reinforcing mesh embedded in base coat
- Embed the detail mesh with base coat
- Rasp entire board surfaces with a coarse rasping tool
- Using a steel trowel, apply Soft Coat Base Coat mix to the surface of the foam insulation boards in a 1/8" (3.2 mm) skim coat
- Immediately embed the reinforcing mesh into the freshly applied base coat. Overlap mesh layers and edges by a minimum of 2.5" (64 mm). Apply additional base coat as necessary to completely cover the mesh so that the fabric pattern is no longer visible
- Allow base coat to cure for a minimum of 18 hours while protecting from freezing and precipitation
- Apply Total Wall finish directly out of the bucket onto the cured base coat using a stainless steel trowel
- Texture or float the finish to achieve the desired result
- Allow the finish to cure by protecting from freezing and precipitation for 24 hours

#### 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 that 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 jobsite or ordered completely prefabricated and ready to mount to the wall.

Prefabricated quoins are available from American Prefab at (888) 702-9918.

#### PRECAUTIONS

Although both systems will safely release water that inadvertently gets behind the EIFS, they are designed to be constructed to prevent water intrusion. Therefore, all details, including all caulking details, kickouts, flashings, terminations and utility penetrations, must be properly constructed.

#### 6. Availability & Cost

##### AVAILABILITY

Total Wall materials are manufactured in Wisconsin and purchased by approved applicators through Total Wall distributors. Contact local distributor for a list of approved or certified applicators or call (888) 702-9915 for assistance.

##### COST

Budget installed cost information may be obtained from the manufacturer upon request.

#### 7. Warranty

Total Wall offers a 5 year material warranty and a 10 year material and labor warranty. Contact manufacturer for detailed warranty information.

#### 8. Maintenance

Contact manufacturer for specific maintenance details.

#### 9. Technical Services

A staff of factory trained service personnel offers design assistance and technical support. For technical assistance, contact Total Wall Inc.

#### 10. Filing Systems

- Reed First Source
- MASTERSPEC®
- Additional product information is available from the manufacturer.