

PART 1: GENERAL**1.01. DESCRIPTION AND SCOPE**

- A. Requirements contained within Division I (General Requirements) are applicable to the work required of this section. Provide labor, materials, equipment and supervision necessary to complete the exterior wall and finish systems including:
1. Application of liquid applied moisture barrier over the sheathing substrate
 2. Installation of drainage track or optional backwrap termination with sealant weeps
 3. Installation of window and door head flashing and installation of waterproofing tape to bridge transitions between the moisture barrier and other materials
 4. Application of vertical ribbons of adhesive to form drainage channels
 5. Application of a Total Wall base coat and Total Wall reinforcing mesh over the insulation boards
 6. Application of Total Wall acrylic finish coat
 7. Installation of backer rod and caulk sealant
- B. Related work specified elsewhere:
1. Masonry, Division 4
 2. Metals, Division 5
 3. Wood Construction, Division 6
 4. Sheathing, Division 9
 5. Caulking/Sealants, Division 7
 6. Portland Cement Plastering, Division 9
- C. Referenced Documents
1. Standards
 - (1) ASTM A526 Specification for Sheet Steel, Zinc Coated (Galvanized) by Hot-Dip Process, Commercial quality
 - (2) ASTM B69 Specification for Rolled Zinc
 - (3) ASTM B117 Test Method for Salt Spray (Fog) Testing
 - (4) ASTM C67 Mod. Test Method for Saturated Freeze/Thaw
 - (5) ASTM C150 Specification for Portland Cement
 - (6) ASTM C297 Test Method for Tensile Strength of Flat Sandwich Constructions in Flatwise Plane
 - (7) ASTM C578 Specification for Preformed, Cellular Polystyrene Thermal Insulation
 - (8) ASTM C1135 Test Method for Determining Tensile Adhesion Properties of Structural Sealants
 - (9) ASTM D968 Test Method for Abrasion Resistance of Organic Coatings by Falling Abrasive
 - (10) ASTM 1784 Specification for Rigid PVC
 - (11) ASTM D2247 Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
 - (12) ASTM E84 Test Method for Surface Burning Characteristics of Building Materials
 - (13) ASTM E108 Mod. Full Scale Structural Fire Testing of Wall Systems

- (14) ASTM E330 Test Method for Structural Performance by Uniform Static Air Pressure Difference
 - (15) ASTM E331 Test Method for Water Penetration by Uniform Static Air Pressure Difference
 - (16) ASTM E695 Method for Measuring Relative Resistance to Impact Loading
 - (17) ASTM G23/G53 Accelerated Weathering for Exposure of Nonmetallic Materials
 - (18) Fed Mil Spec 810D Test Method for Determining the Resistance to Mold and Fungus Growth
 - (19) NFPA Standard Test Method 268 Radiant Heat Fire Test
 - (20) UBC 26-9 Intermediate Scale Multi-Story Fire Testing
2. Building Code Standards
- (1) National Building Code, Building Officials and Code Administrators (BOCA), Section 1406.0
 - (2) Standard Building Code, Southern Building Code Congress International (SBCCI), Sections 717.4 and 717.5
 - (3) Uniform Building Code, International Conference of Building Officials (ICBO), UBC Standard 26-4
 - (4) International Building Code, International Code Council (ICC), Applicable IBC Standards
 - (5) International Residential Code (IRC)

D. Terms and Definitions

1. **TOTAL STOP MD – A Moisture Drainage System**

A Class of EIFS (Exterior Insulated and Finish System) in which the substrate sheathing is covered by an air/moisture resistive barrier and a drainage channel for water is created over the moisture barrier. Incidental water that enters the system can safely migrate down the drainage channel and exit the system at designed weep points. EPS (Expanded Polystyrene) insulation board is attached over the moisture resistive barrier and drainage plane with vertical ribbons of adhesive, which create the drainage channels. The EPS is covered with a lamina consisting of two layers. The inner layer consists of Total Wall reinforcing mesh embedded into a Total Wall base coat of 1/16" (1.6 mm). (Typically, one layer of base coat and reinforcing mesh are used; however, an additional layer of base and reinforcing mesh may be added to increase the impact resistance of the system.) The Total Wall reinforcing mesh is a woven glass fiber fabric coated with a protective plastic material. The outer layer is a Total Wall synthetic finish coat that provides texture and final color to the system.

2. **Moisture Barrier**

The moisture barrier is a liquid-applied, water and air resistive, vapor permeable layer that is applied directly to the substrate.

3. **Insulation Board**

A preformed rigid insulating foam plastic that functions to reduce heat flow through a wall and to provide a surface for the base coat and reinforcing mesh. Typically, 2' x 4' (0.61 m by 1.22 m) EPS foam board with an average density of 1 lb. per cubic foot (16.02 g/liter) is used in thicknesses that vary from 1" to 4" (25.4 mm to 101.6 mm). The EPS board must meet specific performance and safety specifications.

4. **Adhesive**

A material that functions to adhere the EPS insulation to the moisture barrier coated substrate. The same material may also function as the base coat.

5. **Base Coat**

A material that is applied to the face of the insulation board and is used to embed the reinforcing mesh and functions as a weather barrier.

6. **Reinforcing Mesh**

An open weave fiberglass fabric that is coated with a protective plastic. It is embedded into a layer of Total Wall base coat to strengthen the system.

7. **Finish Coat**

A premixed, synthetic plaster material. It functions to provide a decorative color and texture coat and additional weather resistance.

8. **Accessories**

Items such as weep bases, corner beads and casing beads that may be utilized in the assembly of the system. Flashing for window and door treatments, decks, roof kick-out areas and dormers are utilized.

9. **Weatherproofing Sealant Tape**

A bitumen-faced flashing tape that is used to bridge transitions between the moisture barrier and an adjacent surface.

10. **Sealant**

A permanently flexible self-sticking compound that is used to seal seams in the system such as the seams occurring between the system and windows and doors.

1.02. DESIGN LIMITATIONS AND DETAILING

- A. The maximum allowable system deflection, normal to the plane of the wall is L/240.
- B. Design wind load must not exceed Total Wall's allowable wind load as stated in Total Wall Code Evaluation Reports.
- C. All details must conform to Total Wall recommendations and must be consistent with the project requirements.

1. General

- (1) At all locations the EPS board must be completely encapsulated by the lamina or terminated with an approved PVC accessory.
- (2) The insulation board must be separated from the interior of the building by 1/2" (12.7 mm) gypsum wallboard or equivalent fire resistive barrier material, which will limit the average temperature rise of the unexposed surface to not more than 250°F (121° C) after 15 minutes of fire exposure, when subjected to the ASTM E-119 time-temperature curve.
- (3) The minimum thickness of EPS must be 1" (25.4 mm); the maximum thickness must be 4" (101.6 mm), with the exception of architectural enhancements.
- (4) The length and slope of inclined surfaces must follow the guidelines listed below:
 - (a) Minimum slope: 6" (152.4 mm) of rise in 12" (304.8 mm) of horizontal projection
 - (b) Inclined surfaces must not be used for areas defined as roofs by building codes.
 - (c) Uses not meeting the above criteria must be approved in writing by Total Wall prior to installation.

2. Substrate System

- (1) Must be engineered to withstand all applicable loads. Including live, dead, positive and suction wind; seismic activity; etc. Bond strength, fastener strength, and connection strength must be analyzed and engineered. Appropriate factors of safety must be used.
- (2) The maximum deflection under positive or suction full designs loads of the substrate system must not exceed L/240.

3. Substrates
 - (1) Application of the system must be to one of the following substrates:
 - (a) Siliconized core gypsum sheathing or exterior grade gypsum sheathing
 - (b) Raw or painted masonry (Note- painted masonry will require a field bond test of the moisture barrier to the painted surface)
 - (c) Oriented strand board or exterior grade plywood
 - (d) Cement Board
 - (2) Substrates other than those listed above must be approved, in writing, by Total Wall, Inc. prior to installation of the system.
 - (3) Sheathing substrates must be oriented with their strong axis perpendicular to the supporting framing.
 - (4) The applicator must verify that the proposed substrate is acceptable to the applicable regulatory authorities prior to the installation of the system.
 - (5) The substrate must not have any planar irregularities greater than 1/4" (6.35 mm) in 10 lineal feet (30.48 m).
4. System Joints
 - (1) Continuous expansion joints must be installed at the following locations:
 - (a) Where expansion joints occur in the substrate
 - (b) Where building expansion joints occur
 - (c) At floor lines in wood-frame construction
 - (d) Where the system abuts other materials
 - (e) Where the substrate changes
 - (f) To limit system runs to 80 lineal feet
 - (g) Where significant structural movement may occur, e.g.
 1. In walls longer or wider than 80 lineal feet
 2. Changes in building shape and structural system
 - (2) Expansion and contraction of the system and adjacent materials must be taken into account in the design of expansion joints, with proper consideration given to sealant properties, installation conditions, temperature range, coefficient of expansion of materials, joint width-to-depth ratios, etc.
 - (3) Isolation joints are required around all wall penetrations, including doors and windows.
5. Details
 - (1) Total Wall's latest published information must be followed for standard detail treatments.
 - (2) Non-standard detail treatments must follow the recommendations of Total Wall.
 - (3) Corners must be reinforced by wrapping reinforcing fabric around the corner from both directions for a minimum of 8" (203.2 mm), or with corner mesh, or approved pvc accessory.
 - (4) Openings must be reinforced using a 9" x 12" (228.6 x 304.8 mm) wide strip of detail mesh placed at a 45° angle to the opening corner.
 - (5) Flashing is detailed at window and door heads, deck ledger boards, roof kick-outs, and roof/wall interfaces. Deck flashing must have end dams. Window sill pan-type flashing is a recommended option.
- D. All areas requiring higher than standard impact resistance must be detailed in the drawings and described in the contract documents.
- E. The use of dark colors must be considered in relation to estimated wall surface temperatures as a function of local climate conditions.

1.03. QUALITY ASSURANCES

- A. Contractor
The contractor must have a minimum of two years experience in the wall construction trades, be licensed by Total Wall for application of MD systems, demonstrate the ability to install the system based on projects of similar size and complexity, and meet the approval of the architect. The contractor must provide a list of completed projects, equipment, manpower and supervision necessary to install the system in compliance with the project plans and specifications.
- B. Insulation Board Manufacturer
The insulation board manufacturer must be recognized by Total Wall as capable of producing insulation board to meet the system requirements. The insulation board manufacturer must be listed by an approved agency, and the board and packaging must be labeled as required by Total Wall and the applicable building code.

1.04. SUBMITTALS

- A. The contractor must submit a sample panel board of at least 12" x 12" (30 cm x 30 cm) to the architect, demonstrating the texture and color of the finish desired. The architect must review the panel and determine the suitability of the finish presented.
- B. The contractor must submit a list of three projects which have been completed within the last five years, exhibiting the contractor's EIFS installation skills. The list must include project name, location, description of work and date completed.
- C. Total Wall's literature, including application instructions, specifications and details.
- D. The insulation board manufacturer's documentation to show compliance with Total Wall and code requirements.

1.05. PRODUCT DELIVERY AND STORAGE

- A. Delivery
Deliver all materials supplied by Total Wall in original, unopened containers with legible manufacturer's identification.
- B. Storage
 - 1. Store all products off the ground, under cover and protected from dampness and sunlight.
 - 2. Warning: EPS rigid insulation is combustible and may constitute a fire hazard if improperly used or installed. EPS insulation must be adequately protected. Use only as directed by the specific instructions for those products. During shipping, storage, installation or use these materials must not be exposed to open flame or ignition sources. For proper protection of rigid insulation, consult the National Fire Protection Association (NFPA) standard or the authority having jurisdiction. Store EPS under cover, off the ground with full support, stacked horizontally.
 - 3. All liquid products must be stored at 40° F (4.4° C) or above and protected from freezing. Protect from exposure to direct sunlight during storage.

1.06. JOB CONDITIONS

- A. Install all materials in strict accordance with all safety and weather conditions required by the product literature.
- B. Apply all coatings when the ambient temperature is 40° F (4.4° C) and rising. A minimum temperature of 40° F (4.4° C) must be maintained for 24 hours after completion of work. Supplementary heat must be provided if stated temperature conditions do not exist. Do not apply coatings to a frozen surface.
- C. Protect surrounding areas and surfaces during application of the wall system.
- D. Protect system from precipitation during application and for at least 24 hours after application.

1.07. COORDINATION AND SCHEDULING

- A. Closely coordinate work with related sections and trades.
- B. Protect the tops of walls to prevent water from entering behind the system. Any required cap flashing, overhangs or drip edges must be installed as soon as possible after the finish coat has been applied.
- C. Install all sealants in a timely fashion. Protect open joints from water intrusion with backer rod or other means until the sealant has been installed.
- D. When required by code or job requirements, contract with a certified independent EIFS inspector prior to Total Wall EIFS installation. The inspector must be EDI (Exterior Design Institute) certified or other applicable certifying agency as approved by Total Wall and the local code official. The inspector will make a minimum of three on-site inspections, which will include the following examinations:
 - 1. Material – storage and environmental application conditions
 - 2. Substrate – material(s) and condition
 - 3. Moisture barrier and weatherproofing tape – type and installation
 - 4. Flashings – kick-out, deck, window and door heads
 - 5. Drainage channel material and trim accessories (if applicable)
 - 6. Rigid EPS foam – labeling, dimensions, installation and rasping
 - 7. Fasteners – type, labeling, size and installation
 - 8. Trims and architectural enhancements – configuration and installation
 - 9. Base coat – type, labeling, mixing and application.The inspector must provide a minimum of three interim text reports and one final report, which will include photographs. The inspected items must be compared with job documents and Total Wall specifications and reported accordingly. Report copies must be issued to Total Wall.
- E. If an independent inspector is not specified, a manufacturer's representative must perform a minimum of three on-site documented inspections. Report copies must be issued to Total Wall corporate, the architect, the applicator and the general contractor.

1.08. SYSTEM WARRANTY

- A. A Total Wall warranty application form must be completed prior to the commencement of the installation.
- B. Upon completion of the EIFS installation in accordance with specifications, and payment of all monies due to Total Wall Inc., a system warranty will be issued.

PART 2: PRODUCTS

2.01. MANUFACTURERS

- A. All materials related to EIFS must originate from
Total Wall, Inc.
PO Box 366
Rio, WI 53960
(888) 702-9915

2.02. EXTERIOR INSULATION SYSTEM COMPONENTS

- A. The air/moisture resistive barrier must be the following:
 - 1. Total Stop RA liquid-applied waterproofing membrane barrier.
- B. The drainage starter track must be PVC as manufactured by Plastic Components or Vinyl Corp.
- C. Rigid insulation board must be 2' x 4' (0.61M by 1.22M) Grade 1 EPS, meeting ASTM C578 performance standard, an average density of 1 pound per cubic foot (16.02 g/L), cured for 6 weeks at 68° F (20° C) or equivalent accelerated conditions, labeled with Total Wall and code markings, and with a minimum thickness of 1" (25.4 mm) and a maximum thickness of 4" (101.6 mm) as specified by drawings.
- D. Adhesive must be Total Wall T-2000, a dry polymer modified Portland cement based mixture that is mixed with water at the job site; or Total Wall Foam N' Base Coat, a wet acrylic polymer slurry that is mixed with Portland cement at the job site.
- E. Base coat must be Total Wall T-2000, a dry polymer modified Portland cement based mixture that is mixed with water at the job site; or Total Wall Foam N' Base coat, a wet acrylic polymer slurry that is mixed with Portland cement at the job site; or EZ Base NCB, a pre-mixed ready-to-use base coat. The selected mixture is used to embed the Total Wall reinforcing fabric to the face of the polystyrene board.
- F. Reinforcing mesh must be plastic coated fiberglass reinforcing fabric as required and supplied by Total Wall:
 - 1. 4.3 oz – Standard, 25 – 35 in-lbs (2.8-4.0 Newton-M) impact
 - 2. 6 oz – Standard Plus, 35 – 40 in-lbs. (4.0-4.5 Newton-M) impact
 - 3. 11 oz – Intermediate, 75 – 90 in-lbs (8.5-10.1 Newton-M) impact
 - 4. 15 oz – High, 180 – 220 in-lbs (20-25 Newton M) impact
 - 5. 20 oz – Ultra High, 230 – 240 in-lbs (26-27 Newton M) impact
 - 6. The High and Ultra High meshes require a second layer of Standard 4.3 oz mesh and base coat.
Note: Impact strengths are tested on specimens with nominal base coat thickness with no finish coat and are considered highly conservative values.
- G. Portland cement must be Type I, I-II or II meeting ASTM C150, fresh and free of lumps
- H. Water must be clear, potable and free of foreign matter.
- I. Sealant Systems
 - 1. Must be one of the following:
 - (1) Tremco, Inc.
 - (a) Sealant: "Dymeric"
 - (b) Prime: use manufacturer's recommended primer
 - (c) Backer rod: Dow "Ethafoam"
 - (d) Bond breaker: 3M #226, 481, 710
 - (2) Pecora Corporation
 - (a) Sealant: "Dynatrol II" or 890 Silicone
 - (b) Prime: use manufacturer's recommended primer
 - (c) Backer rod: Dow "Ethafoam"
 - (d) Bond breakers: 3M #480 or Valley Industrial Products #90
 - (3) Dow Corporation
 - (a) Sealant: Dow 790 series sealants (790, 791, 795)
 - (b) Prime: use manufacturer's recommended primer
 - (c) Backer rod: Dow "Ethafoam"

- (4) Sonneborn Corporation
 - (a) Sealant: Sonneborn 150 or 150 LM sealant
 - (b) Prime: use manufacturer's recommended primer
 - (c) Backer rod: Dow "Ethafoam"
- (5) Sika
 - (a) Sealant: Sika LM 15
 - (b) Prime: use manufacturer's recommended primer
 - (c) Backer rod: Dow "Ethafoam"
- (6) Alternate sealant as approved in writing by Total Wall.
- 2. Sealant must be bonded to the base coat layer of the system, not to the finish.
- 3. System materials must be dried prior to sealant installation.
- 4. Color must be selected by the architect.
- J. Accessories, if required by Total Wall and job specifications, must be of proper size and configuration for their function and must be manufactured from rigid PVC, solid zinc alloy or galvanized steel.
- K. Finish coat must be a 100% acrylic pre-textured and pre-tinted synthetic finish as manufactured by Total Wall, Inc.
- L. The weatherproofing tape must be a bitumen faced flashing tape such as FortiFlash, ProtectoWrap, DuPont White Weatherproofing tape, Total Flash or equivalent.

2.03. MIXING AND PREPARATION

- A. Total Wall T-2000 Base Coat
 - 1. Obtain a clean container for mixing. Do not use contaminated or dirty containers.
 - 2. Add 5 quarts (4.7 Liters) of fresh, potable water to the container.
 - 3. Open a new 50 lb (22.7 Kg) bag of Total Wall T-2000 Base Coat.
 - 4. Using a low speed mechanical mixer, begin stirring while adding the Total Wall T-2000 Base Coat. After all of the material is added, continue mixing an additional minute. Being sure to scrape the sides and bottom of the mixing container. Add up to 1 quart (.95 Liters) of additional water to adjust the mixture to a creamy, trowel-grade consistency.
 - 5. Allow the mixture to stand for 15 minutes and mix again on low speed for an additional minute.
 - 6. Begin using product immediately.
- B. Total Wall Foam N' Base Coat (an alternative to Total Wall T-2000 Base Coat)
 - 1. Obtain a clean container for weighing and mixing. Do not use contaminated or dirty containers.
 - 2. Open a new pail of Total Wall Foam N' Base Coat and stir with a low speed mechanical mixer for one minute.
 - 3. In separate containers, weight equal quantities of Total Wall Foam N' Base and Portland cement.
 - 4. Using a low speed mechanical mixer, begin stirring the Total Wall Foam N' Base Coat while adding the Portland cement in small increments. Up to 1 quart (.95 Liters) of clean water may be added to enhance workability. After all of the Portland cement is added continue mixing on low speed an additional two minutes, being sure to scrape sides and bottom of the mixing container.
 - 5. Allow the mixture to stand for 15 minutes. Mix again on low speed for an additional minute.
 - 6. Begin using product immediately.
- C. Total Wall EZ Base NCB (an alternative pre-mixed base coat)
 - 1. The Total Wall EZ Base NCB must be stirred for 1 minute with a low speed mixer until a uniform workable consistency is obtained.
 - 2. A small amount of water may be added to adjust workability; maximum water addition not to exceed 6 oz (0.177 Liters) per 5 gallon (18.93 Liter) pail. The water must be clean and potable.

3. No additives or material of any kind, such as rapid binders, antifreeze, accelerators, fillers, pigments, etc. must be added unless specified by Total Wall.
 4. The Total Wall EZ Base NCB must be used immediately after mixing. The container must be kept closed when not in use.
 5. The mixing tool must be cleaned immediately after use.
- D. Total Wall Total Stop RA Liquid applied membrane air/moisture resistive barrier.
1. Open a new pail of Total Stop RA liquid-applied membrane.
 2. Mix with a low speed mixer for one minute. Use neat for joint treatment.
 3. Up to 32 ounces (0.473 Liters) may be added per 5 gallon (18.93 Liter) pail to adjust workability for roller application.
- E. Total Wall Synthetic Textured Finish Coat
1. The Total Wall Finish Coat must be thoroughly stirred with a clean mixer until a uniform workable consistence is obtained.
 2. A small amount of water may be added to adjust workability. Maximum water addition not to exceed 12 oz (.355 Liter) per 5 gallon (18.93 Liter) pail. The water must be clean and potable.
 3. No additives or material of any kind, such as rapid binders, antifreeze, accelerators, fillers, pigments, etc. must be added unless specified by Total Wall.
 4. The Total Wall Finish Coat must be used immediately after mixing. The container must be kept closed when not in use.
 5. The mixing tool must be cleaned immediately after use.

2.04. PERFORMANCE REQUIREMENTS

The Total Wall system and its components must meet the following performance requirements:

ASTM E84 Surface Burning	FSI = 10, SDI = 35
ASTM E108 mod. Full Scale Fire Test	Pass (no flame spread)
MIL STD 810D Mildew Resistance (Method 508.3)	28 days - no growth
ASTM E695 Full Scale Impact Loading	No damage
ASTM D968 Sand Abrasion 500 liters, 260 L/ml	No deleterious effects
ATM D2247 Water Resistance	No deleterious effects
ASTM B117 Salt Spray (300 hours)	No deleterious effects
ASTM E96 Water Vapor Transmission	1.79 perms
ASTM C67 Mod. Saturated Freeze/Thaw (50 cycles)	No deleterious effects
ASTM C297 Tensile Adhesion	No failure in adhesive, base or finish
ASTM E330 Modified by #72-80 Negative and positive wind load	(Pos. 0.079, Neg. 0.079 Kg/cm ²)

ASTM E331 Wind Drive Rain (5 gal/sq.ft./hr rain fall plus 65 mph wind)	No penetration
ASTM D2797 Impact resistance	2.5 Newton-Meters
ASTM G23 Accelerated Weathering (2000 hours)	No deleterious effects
ASTM C209 Tensile Bond	26 PSI (1.846 Kg/cm ²)
Radiant Heat Fire Test, NFPA 268	Pass
ISMA Multi-story Fire Test UBC 26-9	Pass

PART 3: EXECUTION

3.01. COMPLIANCE

- A. The installation must be performed strictly in accordance with Total Wall's current literature and current job specifications.

3.02. INSPECTION

- A. Examination of substrate
 - 1. Prior to installation of the system, the substrate must be examined by the applicator as follows:
 - (1) The substrate must be a type approved for the system (See Section 1.02.C.3.(1)).
 - (2) The substrate must be examined for soundness, such as tightness of connections, crumbling or looseness of surface voids and projections.
 - (3) The substrate must be examined for dimensional correctness.
 - 2. The architect and general contractor must be advised of all discrepancies. Work must not proceed until satisfactory conditions are addressed.

3.03. FRAMING AND SHEATING

- A. Requirements of Framing
 - 1. The framing assembly components must be constructed to meet local code requirements and framing manufacturer requirements and framing manufacturer requirements.
 - 2. Wood and steel framing must be a maximum of 16" (40.6 cm) oc, designed not to exceed L/240 deflection based on stud properties only. Steel framing must be minimum 20 gauge and have a corrosion resistance equal to or better than G60 hot dipped galvanized coating.

3.04. INSTALLATION

- A. Mixing

All materials requiring preparation must be labeled accordingly; the contractor must follow all instructions.
- B. System Terminations

At all system terminations, the system must be terminated with the proper PVC accessory or proper backwrapping.

1. Weep starter track can be installed at lower terminations, at flat window and door heads and at roof/wall intersections. Attach track to the framing through non-screwable sheathing using corrosion resistant nails or screws. Butt sections of track together and miter inside and outside corners.
 2. With the exception of terminations using a PVC accessory, the insulation boards must be backwrapped with reinforcing mesh and base coat
 - (1) Reinforcing mesh and base coat must be applied so that it will encapsulate the terminated edge of the insulation board. The backwrapping must extend a minimum of 2.5" (63.5 mm) on the face and the back of the insulation board.
 - (2) The encapsulated edge of the insulation board may be completed either prior to board attachment or after board attachment, by first attaching the reinforcing mesh to the substrate.
 - (3) System details may also be terminated with approved system accessories.
- C. Installation of Weather Resistive Air/Moisture Barrier
1. Total Stop RA Liquid-Applied Membrane
 - (1) Using a spatula or trowel, apply a tight skin coat of Total Stop RA to all sheathing joints. Be sure to press the Total Stop RA into the joint space. Allow a minimum of 4 hours to cure before proceeding.
 - (2) Joint reinforcement with mesh is strongly recommended. If the joint is 1/8" (.238 cm) or greater in width, meshing is required. Apply 4.3 oz Total Wall reinforcing mesh in minimum 6" (15.2 cm) wide strips over the Total Stop RA treated sheathing joints. Overlap edges of reinforcing mesh 2.5" (6.37 cm). Self-stick mesh or standard mesh may be used for joint reinforcement.
 - (3) Cover the entire sheathing exterior surface with minimum of 1 roller applied coat of Total Stop RA in a 15 – 20 mil wet coat. Two coats of Total Stop RA are recommended. For wood sheathing, two coats of Total Stop RA are mandatory. When possible, apply the Total Stop RA moisture barrier back into window and door openings. Allow the Total Stop RA to dry.
 - (4) All PVC accessories must be installed after the Total Stop RA has been applied and allowed to dry.
 - (5) Use FortiFlash, ProtectoWrap or other approved weatherproofing tape to bridge and seal the start weep base accessory flange to the cured Total Stop RA membrane. The weatherproofing tape can be used to bridge termination joints at windows, doors and other penetrations.
 - (6) Total Flash in combination with reinforcing mesh may be used in place of the weatherproofing tape in most instances.
- D. Installation of Rigid Insulation
1. Grade 1 EPS
 - (1) Grade 1 EPS must be applied to the substrate surface starting from the bottom.
 - (2) The Grade 1 EPS must be applied with the long edge oriented horizontally; with its joints offset with respect to the sheathing joints; using a running bond pattern; and with interlocking insulation boards at inside and outside corners.
 - (3) Grade 1 EPS pieces must be precut to fit openings, corners, and projections prior to application of the backwrapping and Total Wall adhesive as applicable.
 - (4) EPS board joints must be offset from sheathing joints by a minimum of 4" (10 cm).
 - (5) EPS boards must be "L" cut (drywall cut) at window corners and door corners.

2. Attaching foam over liquid-applied moisture barrier
 - (1) Use a Total Wall soft coat base coat as the adhesive
 - (2) Apply adhesive to the dry Total Stop RA membrane using a notched trowel to create vertical ribbons or apply the adhesive across the short dimension of the EPS board so the ribbons will be vertical on the wall. The ribbons of adhesive create the drainage channels. Use a notched trowel with a minimum 3/8" (.0952 cm) depth notches spaced between 1.5" (3.81 cm) and 2" (5.08 cm) apart.
 - (3) Immediately press the EPS board to the wall and apply firm even pressure to level and secure the board. Allow 24 hours to cure before proceeding.
 - (4) It is important that the ribbons of adhesive are not flattened too tightly when the EPS board is placed into the drainage track. This could potentially block the drainage channels. Use a slightly wider drainage track (for example: use a 1.25" (3.175 cm) track to receive 1" (2.54 cm) EPS), or rasp off the lower back corner of the EPS to a height greater than the back flange of the drainage track to create the extra .25" (0.635 cm) width for the channels.
 3. If gaps in the Grade 1 EPS board occur, slivers of Grade 1 EPS must be cut and shaped to fit the gaps and inserted without using any adhesive or filler between EPS boards. As an alternative, gaps may be filled with EnerFoam or equivalent low expanding urethane foam and rasped off after curing.
 4. Once the Total Wall adhesive has taken a set, all surfaces of the Grade 1 EPS boards must be sanded or rasped until flush. Low areas must not be filled with base coating to produce a level surface.
 5. Aesthetic reveals, which may be required as a design feature, must be routed into the outside surface of the Grade 1 EPS using a high speed router, hot groove or hot knife and proper blade. The remaining thickness of the Grade 1 EPS at any point in the routed groove or feature must not be less than .75" (19 mm).
 6. Foam shapes of Grade 1 EPS, if used, must be applied to the surface of the system's EPS layer, either before or after applying the base coat and reinforcing mesh.
 7. Total Wall's latest published detailed instructions and special instructions for this project must be followed regarding installation of the Grade 1 EPS.
- E. Total Wall Base Coat
1. The surface of the Grade 1 EPS must be inspected as follows:
 - (1) For flatness, use a straight edge. High areas and out of plane Grade 1 EPS joints must be rasped flat. Low areas must not be built up with base coating to form a flat surface.
 - (2) If any mechanical fasteners are used, fastener heads will be skimmed with the Total Wall base coat and allowed to dry for a minimum of 24 hours before proceeding.
 2. Damaged areas and foreign materials must be addressed prior to application of the base coat or finish.
 3. For deterioration due to weathering or any other cause, refinish the EPS surface by sanding while maintaining the flatness of the surface.
 4. Using a stainless steel trowel, apply the Total Wall base coat to the surface of the Grade 1 EPS to a uniform thickness of approximately 1/16" (1.5875 mm).
 5. The reinforcing mesh must be embedded immediately into the wet base coating using the steel trowel. Working from the center to the edges while smoothing out wrinkles, the surface of the base coating must be smoothed with the trowel until the reinforcing mesh is fully embedded. Apply additional Total Wall base coat as necessary so that the color or pattern of the reinforcing mesh is not readily visible beneath the surface of the base coating.
 6. The reinforcing fabric pieces must be lapped a minimum of 2.5" (63.5 mm) on all sides.

7. A period of 18 hours must elapse to allow the Total Wall base coat to cure. The base coat must be protected from damage and weather while curing.
 8. Details of the installation of the base coat at the ends of walls, windows, insulation board edges, corners, etc., must be in accordance with Total Wall's latest detailed installation instructions and current job drawings.
- F. High Impact or Ultra High Impact Mesh (Optional – see drawing for areas required)
1. Using a steel trowel, the Total Wall base coat must be applied to the surface of the Grade 1 EPS to a uniform thickness of 3/32" (2.38 mm).
 2. The high impact mesh must immediately be embedded into the wet base coating using a stainless steel trowel. The surface of the wet base coating must be smoothed with the trowel until the high impact mesh is fully embedded. The pattern of the high impact mesh must not be visible beneath the surface of the base coating.
 3. Ends of adjacent high impact mesh pieces must be tightly abutted. High impact mesh pieces must not be lapped. High impact mesh sections must be worked into the wet base coating from the center to the edges while smoothing out wrinkles.
 4. A period of 18 hours must elapse to allow the first layer of high impact mesh and base coat to form a positive bond and must be protected from damage and weather while curing.
 5. The surface of the first layer must be examined after curing for projections, loose strands of mesh, etc., and corrected to produce a flat surface.
 6. A second layer consisting of Total Wall base coat and standard reinforcing mesh must be applied over the first layer per Section 3.03.E.4-8 above.
 7. Details of the installation of the high impact mesh and base coat at the ends of walls, windows, panel edges, corners, etc., must be in accordance with Total Wall's latest published detail installation instructions.
- G. Finish
1. The Total Wall Textured Synthetic Finish Coat must be applied continuously and in one operation to the entire wall surface or to a logical break point. A wet edge must be maintained. The Total Wall finish coat must not be allowed to set up in a distinct area. Sufficient manpower, scaffolding, and equipment must be employed to insure a continuous operation and a uniform appearance. In some instances, a primer may be used over the base coat ahead of the finish coat. The primer may be Total Prime or other material only as approved by Total Wall in writing.
 2. Work must proceed toward natural wall stops and corners.
 3. A clean stainless steel trowel must be used.
 4. Apply the Total Wall finish to the dry base coat or dry primer maintaining a wet edge at all times. The thickness of the Total Wall finish coat must be in accordance with Total Wall specifications and job requirements to achieve the desired result.
 5. Immediately texture the finish with the appropriate float, trowel or other tool required to achieve the specified texture and appearance. All mechanics must use the same design tool, equipment, timing and technique to achieve uniformity.
 6. Certain finishes may be spray applied. Total Wall must be contacted for specific information for a project if a spray application is indicated
 7. The finish must be protected from contamination, weather and damage for a minimum of 24 hours.
 8. Do not wrap the finish into expansion joints or isolation joints. The primer and sealant must be bonded directly to the base coat in the joint, not to the finish coat.

H. Sealant

Insure that proper backer rod, primer and sealant are installed at all required locations, such as expansion joints and isolation joints, in accordance with Total Wall details and the sealant manufacturer's specifications. In instances where a backwrap termination is used rather than a vented starter track, weeps must be placed in the sealant bead approximately every 12" (182.9 cm). The sealant weeps are made using short lengths of PVC or polyethylene tubing between 5/16" (0.793 cm) and 5/8" (1.587 cm) diameter.

3.05. JOB SITE CLEANUP

- A. All excess Total Wall system material must be removed from job site by the applicator
- B. All surrounding areas where Total Wall EIFS has been applied must be left free of debris and foreign substances.

3.06. INSPECTION

- A. The Total Wall applicator, a representative of the property owner's team and a Total Wall representative must inspect the EIFS installation and prepare an inspection summary with a copy to Total Wall.
- B. If an independent EIFS inspector is used, a copy of the final report must be submitted to Total Wall.

END OF SPECIFICATION