TeifsWeathertight Wall System Specification

Expanded Language

CSI SECTION 07 24 00

CSI SECTION 07 24 00 – Exterior Insulation & Finish System (EIFS)–Class PB
CSI SECTION 07 24 19 – Water Drainage System-Exterior Insulation & Finish System (EIFS)-Class PB
(TeifsWeathertight Wall System, Class PB)

SYSTEM OVERVIEW

The TeifsWeathertight Wall System is a Class PB EIF System distinguished by installation with drainage. Drainage is accomplished by means of vertical grooves that are cut into the back of the EPS insulation board.

TeifsWeathertight Wall System is qualified for use on combustible and non-combustible construction, residential and non-residential construction.

This system is not qualified for use on wood sheathed walls. Sheathing is limited to Glass Mat Sheathing and cement board. (Refer to Teifs Permadrain and Grade D building paper for wood sheathed residential construction.)

- The system is not qualified for application to OSB (oriented strand board) sheathing.
- Some jurisdictions may require special inspections.
- The system does not contribute structural strength to the wall. It depends on the substrate wall for support andattachment.
- Substrate construction must resist all design loads. Sheathing attachment to framing must resist design negative windloads because it transfers those loads to the framing. Appropriate safety factors must be applied.
- All penetrations and terminations of the system must be made weather-tight, typically by sealants and/or-flashings.

PART 1—GENERAL

1.01 SUMMARY

A. Section Description: Section includes Exterior Insulation and Finish System (EIFS–Class PB).

B. Products Installed But Not Supplied Under This Section:

1. EIFS Joint Sealant: Refer to Division 7 Joint Treatment (Sealant) section. Installation of EIFS joint sealant shall be by EIFS applicator or a separate installer under direct supervision and control of EIFS applicator. EIFS Joint Sealant installer shall be experienced and competent in the installation of elastomeric construction sealants.

C. Related Sections:

1. Division 3–Concrete
2. Division 4–Unit Masonry
3. Division 5–Light Gauge Cold-Formed Steel Framing
4. Division 6–Carpentry for Sheathing
5. Division 7–Flashing
6. Division 7–Joint Sealant
7. Division 9–Portland Cement Plaster
8. Specialty Coatings

1.02 DEFINITIONS

A. Definitions:

1. Backwrapping: Continuation of base coat and fiberglass reinforcing fabric around the edge of insulation board and onto the substrate in back of the insulation.
2. Edgewrapping: Continuation of base-coated fiberglass reinforcing fabric around the edge of the insulation board and onto the rough opening wall framing or masonry.
3. Expansion joint: Sealant, back-up material, and primer manufactured by others, forming a moveable juncture between adjacent materials.

1.03 SYSTEM DESCRIPTION

A. Description of TeifsWeathertight Wall System:

1. TeifsWeathertight Wall System: An Exterior Insulation and Finish System (EIFS) consisting of channeled, expanded polystyrene insulation (EPS) board, non-cementitious adhesive, vented track, cementitious base coat with embedded reinforcing fabric mesh, primer (optional), and finish coat. This system is installed over a secondary water-resistive barrier consisting of Teifs Weatherseal applied over glass mat sheathing to form a water-draining assembly. Teifs Weathertight Wall System complies with code requirements for non-combustible types of construction.

B. Parex EIF System Functional Criteria:

1. General:
   a. Insulation board: At vertical system termination, completely encapsulate insulation board edges by mesh-reinforced base coat. At terminations at system lower edges, enclose insulation board edges with Vented Track. The use and thickness of insulation board shall be in accordance with applicable building codes and ParexLahabra requirements.
   b. Flashing: Flashing shall be continuous and watertight. Flashing shall be designed and installed to prevent water infiltration behind the secondary water-resistive barrier. Refer to Division 7 Flashing section for specified flashing materials.
   c. Design-negative windload shall not exceed 50 psf. (2394 Pa). Contact ParexLahabra for higher design-negative windload.
   d. Inclined surfaces shall follow the guidelines listed below:
      1) Minimum slope: 6 in. (152mm) of vertical rise in 12 in. (305mm) of horizontal run.
      2) For sloped surfaces, run of slope shall be a maximum of 12 in. (305mm).
   e. The building interior shall be separated from the insulation board by 1/2 in. (12.7mm) of gypsum board or equivalent 15-minute thermal barrier.
2. Substrate Systems:

a. Shall be engineered to withstand applicable design loads.
b. Maximum deflection of substrate system under positive or negative design loads shall not exceed 1/240 of span except as otherwise approved in writing by ParexLahabra prior to installation.
c. Substrate dimensional tolerance: Flat within 1/4 in. (6.4mm) in any 4-ft. (122cm) radius.

EDITOR NOTE: COORDINATE BELOW IMPACT RESISTANCE CLASSIFICATION REQUIREMENTS RECOMMENDED BY EIMA INDUSTRY MEMBERS ASSOCIATION TEST METHOD AND STANDARD 101.86—"STANDARD TEST METHOD FOR RESISTANCE OF EXTERIOR INSULATION FINISH SYSTEMS TO THE EFFECTS OF RAPID DEFORMATION (IMPACT)."

3. Impact Resistance Classification: Teifs Weathertight Wall System shall be classified in accordance with EIMA EIFS classification and impact ranges as follows:
   a. Standard Impact Resistance 25-49 in-lbs, Intermediate Impact Resistance 50-89 in-lbs, High Impact Resistance 90-150 in-lbs, and Ultra-High Impact Rance >150 impact range.
4. Expansion Joints: Continuous expansion joints shall be installed at the following locations:
   a. Building expansion joints
   b. Substrate expansion joints
   c. Floor lines in wood frame construction
   d. Where Teifs EIF System panels abut one another
   e. Where Teifs EIF System abuts other materials
   f. Where significant structural movement occurs, such as at:
      1) Changes in roof line
      2) Changes in building shape and/or structural system
   g. Where substrate changes (For exceptions to joints at substrate changes, contact ParexLaHabra Technical department.)

EDITOR NOTE: INDICATE JOINT WIDTH ON DRAWINGS FOR MOVEMENT AND EXPANSION AND CONTRACTION CONDITIONS. CONSULT WITH SEALANT MANUFACTURER FOR JOINT DESIGN RECOMMENDATIONS AND WITH EIFS MANUFACTURER FOR COORDINATION OF EIFS MATERIALS.

   h. Substrate movement and expansion and contraction of Teifs EIF System and adjacent materials shall be taken into account in design of expansion joints, with proper consideration given to sealant properties, installation conditions, temperature range, coefficients of expansion of materials, joint width to depth ratios, and other material factors. Minimum width of expansion joints shall be as follows:
      1) 1/2 in. (12.7mm) where EIFS abuts other materials
      2) 3/4 in. (19mm) where EIFS abuts the EIFS
      3) Larger width where indicated on drawings
5. Manufacturer's Details:
   a. Teifs EIF System latest published information shall be followed for standard detail treatments.
   b. Non-standard detail treatments shall be as recommended by ParexLahabra approved by architect and, be part of the contract documents.
6. Building Code Conformance: Teifs EIF System shall be acceptable for use on this project under building code having jurisdiction.

1.04 SUBMITTALS

A. General: Submit samples, reports, certificates, and manufacturer's warranty in accordance with Division 1 General Requirements Submittal section.

Teifs

1.05 QUALITY ASSURANCE

A. Qualifications:

1. EIFS Manufacturer:
   a. Shall have marketed Exterior Insulation and Finish Systems in United States for at least ten years.
   b. Shall have completed projects of same building size and type as these project.
   c. Must be a member of EIMA and AWCI.
   d. Must be ISO 9001 certified.
2. EIFS Applicator:
   a. Shall posses a current certificate of education.
   b. Shall be experienced and competent in installation of plaster-like materials and shall have completed at least five (5) projects of similar size and type of current project.

B. Regulatory Requirements:

1. Insulation Board: Shall be produced and labeled under a third-party quality program as required by applicable building code.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver EIFS materials supplied by Teifs to site location in original unopened containers with labels intact. Upon arrival, materials shall be inspected for damage, and manufacturer notified of any discrepancies. Unsatisfactory materials shall not be used.

B. Storage: Store EIFS materials supplied by Teifs in a cool, dry location, out of sunlight, protected from weather and other harmful environment, and at a temperature above 40°F (4°C) and below 110°F (43°C) in accordance with manufacturer's instructions. Store insulation board flat.

1.07 PROJECT SITE CONDITIONS

A. General: Provide access to electric power and clean potable water at area where Teifs EIFS System materials are installed.

B. Environmental Conditions: In accordance with manufacturer's requirements, comply with:

1. Ambient air temperature: Minimum 40°F (4°C) and rising, and remaining so for 24 hours thereafter.
2. Do not apply Teifs EIFS materials to substrates whose temperature is below 40°F (4°C).
3. Do not apply Teifs EIFS during inclement weather unless appropriate protection is employed.
4. Protect Teifs EIFS materials from weather and other damage.

1.08 WARRANTY

A. Warranty: Upon request, at completion of installation, provide Teifs Weathertight Wall System Commercial Limited Warranty.

1.09 MAINTENANCE

A. Maintenance Instructions: At completion of EIF System installation, provide manufacturer's maintenance instructions for EIF System installed.

1. Refer to Division 1 General Requirements for requirements for submitting maintenance documentation.

PART 2—PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer: Teifs by ParexLahabra Inc., 4125 E. La Palma Ave, Anaheim CA 92807

1. System: Teifs Weathertight Wall System.
   a. Secondary Water-Resistive Barrier:
      1) Teifs Weatherseal, trowel-applied liquid membrane weather barrier.
      2) Sheathing Tape.
      3) Flashing Membrane.
      4) Joint Reinforcing Fabric.
   b. Adhesive: Manufacturer's specified adhesive for the system.
   c. Insulation Board: In compliance with manufacturer's requirements for the system.
   d. Base Coat: TeifsBase, Base DB, Base FR (Cementitious), or Structure Base Coat & Adhesive.

EDITOR NOTE: COORDINATE BELOW WITH PROJECT REQUIREMENTS.

   e. Mesh Reinforcement: Locations to achieve impact strength shall be as follows:
      1) Locations (not otherwise noted): EIMA Impact Classification: Standard.

EDITOR NOTE: RETAIN BELOW AND SPECIFY LOCATIONS TO RECEIVE EIFS WITH HIGHER THAN STANDARD IMPACT RESISTANCE CLASSIFICATION.

      2) Locations: _____ EIMA Impact Classification: _____

EDITOR NOTE: CONSULT WITH TEIFS AND COORDINATE BELOW TRACKS, AND BACKWRAPPING WITH REQUIREMENTS FOR PROJECT CONDITIONS.

   f. Track: Vented Track as required for EIFS.
2. Teifs System Finish:

EDITOR NOTE: SPECIFY BELOW TYPES FROM MANUFACTURER'S TEXTURE FINISHES AND COLORS.

   a. Type: _____
   b. Texture: _____
   c. Color: _____
3. Product Performance Requirements: Refer to Product Performance Sheet as attached herein.

B. Materials:

1. Secondary Water-Resistive Barrier:
   a. Teifs Weatherseal: Vapor-permeable, fluid-applied flexible coating for Glass Mat Gypsum Sheathing to provide a secondary water-resistive barrier.
   b. Teifs Sheathing Tape: Non-woven synthetic fiber tape to reinforce liquid membrane at sheathing board joints.
   c. Teifs Flashing Membrane: Self-sealing, non-woven, mat-backed, rubberized asphalt membrane, 30 mils (0.76mm) thick.
   d. Joint Reinforcing Fabric: 4-inch strips of open weave fiberglass mesh tape.
2. Insulation Board:
   a. Shall be produced by a manufacturer approved by ParexLahabra.
   b. Shall conform to ASTM C-578, Type I and the Teifs specification for molded Expanded Polystyrene insulation board.
   c. Maximum size shall be 2 ft. x 4 ft. (610mm x 1219mm).
   d. Nominal thickness shall be 1-1/2 in. (38mm) minimum.

e. Back of insulation board shall be configured with channels.

3. Adhesive:
   a. TeifsBase: 100% acrylic polymer base, requiring the addition of portland cement.
   b. TeifsBase DB: Copolymer based, factory blend of cement and proprietary ingredients.
   c. Teifs Adheez: 100 percent acrylic polymer-based; ready to use, applied without the addition of cement; used as an adhesive to laminate EPS insulation board to appropriate substrates.

EDITOR NOTE: RETAIN BELOW STANDARD MESH FOR TEIFS WEATHERTIGHT WALL SYSTEM FOR STANDARD IMPACT RESISTANCE CLASSIFICATION.

4. Teifs Reinforcing Mesh:
   a. TeifsMESH: Weight 4.8 oz. per yd.2 (163g/m^2); coated for protection against alkali. Standard reinforcement of Teifs EIFS, or for use with TeifsMAT 15 or TeifsMAT 20.
   b. Teifs Bakrap: Reinforcing mesh for backwrapping and details
   c. Self Adhesive Detail Mesh: Reinforcing mesh used for complex details

EDITOR NOTE: RETAIN BELOW MESH REQUIREMENTS AFTER DETERMINATION OF IMPACT RESISTANCE CLASSIFICATION.

   d. TeifsMESH XL: Weight 12 oz per yd.2(408g/m^2) reinforcing mesh used with Teifs Weathertight Wall System to achieve EIMA intermediate impact strength.
   e. TeifsMAT 15: Weight 15 oz. per yd.2(510g/m^2) reinforcing mesh used with Teifs Weathertight Wall System to achieve EIMA high impact strength.
   f. TeifsMAT 20: Weight 20 oz. per yd.2 (679g/m^2) reinforcing mesh used with Teifs Weathertight Wall System to achieve ultra-high impact strength.
   g. KORNERAP: Reinforcing mesh used as a corner reinforcement; required with TeifsMAT 20.
5. Teifs Base Coat:
   a. Teifs Base: 100 percent acrylic polymer base, requiring the addition of portland cement.
   b. Teifs Base DB: Copolymer-based, factory blend of cement and proprietary ingredients.
   c. Teifs Structure: 100 percent acrylic polymer base, ready to use.
6. Teifs Primers:
   a. Teifs Prime: 100 percent acrylic-based coating to prepare surfaces for Teifs finishes.
   b. Teifs Sanded Primer: 100 percent acrylic-based coating to prepare surface for Teifs Earthstone finish.
7. Teifs Finish Coat: Factory-blended, 100 percent acrylic polymer-based finish, integrally colored. Finish type, texture, and color as selected by architect.
8. Teifs Vinyl Track: Exterior-grade PVC extrusion accessory used for base termination of Teifs EIFS at grade; provides straight termination. Vented Track: Vent holes for drainage and perforated front flange to key base coat.
9. Mineral wool strips 4 pounds per ft.3(60kg/m^3) actual density minimum, 4 in. (101mm) wide; same thickness as the EPS.
10. Water: Clean, potable water.
11. Portland Cement: ASTM C 150, Type I.

2.02 RELATED MATERIALS

A. Sheathing:

1. Glass Mat Sheathing conforming to ASTM C1177.
2. Cement Fiber Sheathing conforming to ASTM C 1186.

3. CDX plywood, PS 1 Exposure 1, minimum 7/16 in. (11.11 mm) thick, C veneer facing out, panels gapped 1/8 in. (3.18 mm) at all edges.

B. Poured or precast concrete and/or masonry.

C. Fasteners for concrete, masonry or other irregular substrates:

1. Wind-Lock Wind Devil I Plate with Wind-Lock masonry screw or appropriate screw for other substrates.
2. Buildex Gridmaster Plate with Buildex Concrete Pin.

D. Flashing: Refer to Division 7 Flashing section for flashing materials.

E. Sealant System:

1. Sealant for expansion joints between panelized Teifs EIFS sections shall be ultra-low modulus designed for minimum 100 percent elongation and minimum 50 percent compression and as selected by architect.
2. Sealant for perimeter seals around window and door frames and other wall penetrations shall be low modulus, designed for minimum 50 percent elongation and minimum 25 percent compression, and as selected by architect.
3. Sealants shall conform to ASTM C 920, grade NS.
4. Expansion joints between sections of Teifs EIF System shall have a minimum width of 3/4 in. (19mm).
5. Perimeter seal joints shall be a minimum width of 1/2 in. (12.7mm).
6. Sealant backer rod shall be closed-cell polyethylene foam.
7. Apply sealant to tracks or base coat of Teifs EIF System.
8. Color shall be as selected by architect.
9. Joint design, surface preparation, and sealant primer shall be based on sealant manufacturer's recommendations and project conditions.

EDITOR NOTE: PART 3 EXECUTION BELOW INVOLVES ONSITE WORK AND SHOULD INCLUDE PROVISIONS FOR INCORPORATING MATERIALS AND PRODUCTS INTO PROJECT. TYPICALLY, "CONDITIONS OF THE CONTRACT" ESTABLISH RESPONSIBILITY FOR "MEANS, METHODS, TECHNIQUES, AND SAFETY" REQUIREMENTS OF CONSTRUCTION WITH CONTRACTOR. SPECIFICATIONS SHOULD AVOID CONFLICTS WITH THIS CONTRACTUAL PRINCIPLE.

PART 3—EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's instructions for installation of exterior insulation & finish system.

REMINDER: TEIFS WEATHERTIGHT WALL SYSTEM IS A DRAINABLE WATER-RESISTIVE BARRIER ASSEMBLY. SYSTEM PERFORMANCE, DEPENDENT UPON, AMONG OTHER FACTORS, PROPER FLASHING AND JOINT SEALING, AND ATTENTION TO PROPER FLASHING AND JOINT SEALANT DETAILS INDICATED ON DRAWINGS.

3.02 EXAMINATION

A. Examination of Substrate:

1. Prior to installation of Teifs EIF System, examine substrate as follows:
   a. Substrate shall be of a type approved by ParexLahabra.
   b. Substrate shall be examined for soundness, such as tightness of connections, crumbling or looseness of surface, voids and projections, spacing of panels, and other conditions.
   c. Substrate shall be examined for dimensional tolerances per this specification.

d. Substrate surface shall be free of foreign materials such as oil, dust, dirt, form release agents, paint, wax, water, frost, and other harmful materials.
e. Concrete and/or masonry substrates shall be free from any projections that would adversely affect the ability of the Insulation Board from laying flat on the substrate.

2. Advise contractor of discrepancies preventing installation of a manufacturer's warranty EIFS. Do not proceed with EIFS work until unsatisfactory conditions are corrected.
3. Correction of unsatisfactory conditions of substrates installed by other trades shall be responsibility of contractor.

3.03 PROTECTION AND COORDINATION

A. Protection: Protect surrounding material surfaces and areas during installation of Teifs EIF System. Protect Teifs EIF System from weather and other damage immediately after installation and until installation of sealants and flashing.

B. Coordination:

1. Coordinate installation of Teifs EIF System with other construction trades.
2. Ensure a continuous EIFS operation, free of cold joints, scaffolding lines, texture variations, and other non-complying installation procedures.
3. Promptly flash and/or seal system terminations to prevent water infiltration. Use temporary cover when permanent flashing or sealant installation is delayed.
4. Immediately cover tops of walls to prevent water infiltration.
5. Upon full cure of Teifs EIF System, promptly install sealant to surfaces to be sealed.

3.04 INSTALLATION

A. General: Installation shall conform to this specification and Teifs EIFS written instructions and drawing details.

1. Install tracks, back-wrap mesh, or edge-wrap mesh at system terminations.
2. Apply Flashing Membrane at rough openings and tracks to provide continuity of water shedding.
3. Where the building code requires the construction to be a non-combustible type, install mineral wool strips at the terminations of the system above wall openings such as windows, doors, louvers, etc.
4. Treat all glass mat sheathing, cement board sheathing and plywood joints with Teifs Weatherseal and embed Sheathing Tape to provide continuity of water shedding.
5. Apply Teifs Weatherseal to entire surface of substrate to form a continuous, monolithic, water-resistive barrier.
6. Apply adhesive to backs of insulation boards with a notched trowel.
7. Rasp irregularities of insulation board after adhesive has dried.
8. Apply base coat and fully embed mesh in base coat; include diagonal mesh patches at corners of openings and reinforcing mesh patches at joints of track sections. Apply multiple layers of base coat and mesh where required for specified impact resistance classification.
9. Apply primer to base coat after drying. Primer may be omitted if it is not required by the manufacturer's primer and base coat product data sheets for the specified finish coat.
10. Apply finish coat to match specified finish type, texture, and color. Apply finish except at base coat areas to receive sealant.

3.05 CLEANUP

A. General: Remove excess and waste EIFS materials from job site.

1. Clean EIFS surfaces and work area of foreign materials resulting from EIFS operations.

END OF SECTION

Disclaimer Statement

This guide specification is intended for use by a qualified designer. The guide specification is not intended to be used verbatim as an actual specification without appropriate modifications for the specific use intended. The guide specification must be integrated into and coordinated with the procedures of each design firm, and the requirements of a specific project.

REINFORCING MESH	TEST RESULTS (IN-LB)	CLASSIFICATION	IMPACT RANGE (IN-LB)
TeifsMesh	40	Standard	25-49
TeifsMesh 6	52	Medium	50-89
TeifsMesh 12	104	High	90-150
TeifsMesh 12 w/TeifsMesh	148	High	90-150
TeifsMesh 12 w/TeifsMesh 12	200	Ultra-High	>150
TeifsMesh 15	240	Ultra-High	>150
Teifs Mesh 20	288	Ultra-High	>150

FIRE PERFORMANCE

TEST	METHOD	TEIFS WEATHERTIGHT WALL SYSTEM
Intermediate-Scale Multi-Story Test Apparatus	UBC STANDARD 26-9	Pass
Surface Burning Characteristics of Coatings & Adhesives	ASTM E 84	Flame Spread: 0 - 15 Smoke Developed: 0 - 15
Radiant Heat Exposure	NFPA 268	Pass: 1-1/2 to 4 in. EPS
Fire Resistance	ASTM E 119 1 hour assembly	Standard fire-resistive assembly rating maintained

STRENGTH

TEST	METHOD	TEIFS WEATHERTIGHT WALL SYSTEM
Transverse Wind Load Resistance	ASTM E 330	Contact ParexLahabra Technical Group for specific Windload results
Tensile Bond Strength	ASTM C 297	Greater than 15 psi for all substrates
Water Vapor Transmission	ASTM E 2134 (E 96)	Permeable to water vapor

ENVIRONMENTAL DURABILITY

TEST	METHOD	TEIFS WEATHERTIGHT WALL SYSTEM
Accelerated Weathering	ASTM G 23	5500 hours: no deleterious effect
Wind-Driven Rain	F.S. TT-C-555B	24 hours; no penetration of water
Water Penetration	ASTM E 331 Section 1403.2 Exception 2, of the IBC	Pass No water occurred on the inner face of the specimen when tested to 12.0 psf
Freeze-Thaw Resistance	ASTM E 2485	60 cycles: no deterioration 10 cycles: pass
Salt Fog Resistance	ASTM B 117	600 hours: no deterioration
Moisture Resistance	ASTM D 2247	28 days: no deleterious effect
Abrasion Resistance	ASTM D 968	600 liters: no deleterious effect
Mildew Resistance	ASTM D 3273	35 days: no growth

DRAINAGE PERFORMANCE

TEST	METHOD	COMMERCIAL DB
Drain Efficiency	ICBO ES AC 24	Pass: Efficiency > 90%

Where several tests on different materials are summarized, a range of values is shown. This summary has been prepared to provide quick but partial information on how certain combinations of Teifs products perform during certain tests. It is not a complete description of the test procedures or of the results thereof. ParexLahabra will mail copies of original test reports at no charge on request. Please contact ParexLahabra if further information is required.

TeifsWeathertight Wall System

Specification

Expanded Language

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