



Teifs FLEX WALL SYSTEM

SECTION 07240

Complete Guide Specifications

Warning:

TEIFS offers a variety of wall systems that include weather barrier and drainage options, to better protect the wall assembly. TEIFS cannot be responsible for deterioration of the substrate, mold, mildew and wood rot due to water intrusion or entrapment from causes such as improperly installed windows; windows that leak at the miter joints, mullions, or through improperly installed glazing; improper flashing, lack of flashing or use of improper flashing materials; use of improper sealants; or inadequate specifications, details or installation of the TEIFS WALL SYSTEM. Sealants and flashing will also deteriorate over time if not maintained. Maintenance of the TEIFS WALL SYSTEM is required.

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Complete Guide Specifications

TeifsFLEX Wall System

Section 07240

Exterior Insulation and Finish System (EIFS)

This guide specification section has been prepared by Teifs Wall Systems, manufacturers of Exterior Insulation and Finish Systems. This section will assist design professionals in the preparation of a specification section on the TeifsFLEX (Class PB) Exterior Insulation and Finish System (EIFS).

This section has been prepared according to principles established in the Manual of Practice published by The Construction Specifications Institute (CSI), including the use of section numbers and titles from 1995 Edition of Master Format.

Inch-pound units are contained within parenthesis after the SI (metric) measurements, e.g.: "6-mm (1/4 inch)." Metric measurements are rationalized units based on the SI system of measurement. Delete either the metric or (inch-pound) units of measure depending on project requirements; do not include both units in a project specification, as conflicting requirements or misinterpretation could result.

This guide specification is available in both hard copy and a variety of electronic softcopy formats to suit the more popular word processing programs and operating systems. Please contact Teifs at 800-358-4785 for copies of product data or for information on different available electronic soft copy formats.

PART 1: GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. TeifsFLEX Wall System: Exterior wall [and soffit] cladding of an adhesive bed, rigid insulation, base coat with reinforcing mesh, and finish coat.
- B. Related Sections:
 - 1. Section 04200 - Unit Masonry
 - 2. Section 03300 - Concrete
 - 3. Section 05400 - Cold Formed Steel Framing
 - 4. Section 06100 - Wood Framing
 - 5. Section 07620 - Sheet Metal Flashing and Trim: Perimeter Flashings
 - 6. Section 07900 - Joint Sealants
 - 7. Section 09250 - Gypsum Board

1.02 SYSTEM DESCRIPTION

TeifsFLEX Wall System is an Exterior Insulation and Finish System, Class PB with an adhesive bed (TeifsBASE), rigid insulation (TeifsBOARD), base coat (TeifsBASE) with reinforcing mesh (TeifsMESH), and finish coat (TeifsFLEX).

1.03 REFERENCES

- A. ANSI/EIMA 99-A -American National Standard for Exterior Insulation and Finish System.
- B. ASTM C 79/C1396 - Standard Specification for Gypsum Board- Gypsum Sheathing Board.
- C. ASTM B 117 - Practice for Operating Salt Spray (Fog) Apparatus.
- D. ASTM C 150 - Portland Cement.
- E. ASTM C 297 - Test Method for Tensile Strength of Flat Sandwich Constructions in Flatwise Plane.
- F. ASTM C 578 - Pre-formed Cellular Polystyrene Thermal Insulation.
- G. ASTM C 1135 - Test Method for Determining Tensile Strength Adhesion Properties of Structural Sealants.
- H. ASTM C 1177 - Standard Specification for Glass Mat Gypsum Substrate for use as Sheathing.
- I. C1278 - Standard Specification for Fiber-Reinforced Gypsum Panel.
- J. ASTM D 968 - Standard Method for Laboratory Compaction Characteristics of Soil using Standard Effort.
- K. ASTM D 2247 - Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
- L. Military Standard 810B - Environmental Test Methods.
- M. ASTM E 84 - Test Method for Surface Burning Characteristics of Building Materials.
- N. ASTM E 96 – Standard Test Methods for Water Vapor Transmission of Materials.
- O. ASTM E 119 - Method for Fire Tests of Building Construction and Materials.
- P. ASTM E 330 - Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- Q. EIMA 101.01 - Standard Test Method for Freeze-Thaw Resistance of Exterior Insulation and Finish Systems (EIFS), Class PB (Modified ASTM C-67).
- R. EIMA 101.02 - Standard Test Method for Resistance to Water Penetration of Exterior Insulation and Finish Systems (EIFS), Class PB (Modified ASTM E-331).
- S. ASTM E 331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- T. EIMA 101.86 - Impact Resistance.
- U. ASTM G 23 - Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type), with and without Water for Exposure of Non-metallic Materials.
- V. TeifsFLEX Wall System Application Guide.
- W. TeifsFLEX Wall System Details.
- X. UBC 26-9 – Intermediate Scale Multi-Story Fire Test.

1.04 PERFORMANCE REQUIREMENTS

- A. Individual materials and the assembly of materials to provide:
 - 1. Secure bond to structure and substrate.

2. Allowance for thermal movement caused by changing environment conditions.
 3. Continuity of thermal barrier at building enclosure elements.
 4. Weather tightness, resistance to wind, suction, and seismic loads identified by code.
- B. Physical Properties:
1. Accelerated Weathering (5500 hours) - ASTM G 23: No deterioration or color change.
 2. Moisture Resistance - ASTM D 2247: No deleterious effects after 14-day exposure.
 3. Abrasion Resistance - ASTM D 968: 500 liters of sand, no deleterious effects.
 4. Water Vapor Transmission - ASTM E 96: Permeable to water vapor.
 5. Salt Spray Resistance - ASTM B 117: 300 hours, no deleterious effects.
 6. Water Penetration - ASTM E 331: No water occurred on the inner face of the specimen when tested to 12.0 psf.
- C. Fire Performance:
1. Flame Spread - ASTM E 84: Flame spread index 5, smoke development 5.
 2. One Hour Fire Rating – ASTM E 119.
 3. BOCA Radiant Heat Exposure Test: Pass, no ignition.
 4. UBC 26-9 Intermediate Scale Multi-Story Fire Test: Pass.
- D. Structural Performance of the Assembly:
1. Freeze Thaw Stability: 60 cycles, no cracking, checking or splitting.
 2. Wind Load Resistance - ASTM E 330: See applicable Building Code Reports or contact Teifs for the results for a specific wall assemblies.
 3. Resistance to Impact - EIMA 101.86:

Reinforcing Mesh	Test Result (in-lb.)	Classification	Impact Range (in-lb.)
TeifsMESH	40	Standard	25-49
TeifsMESH 6	52	Standard	25-49
TeifsMESH 12	104	High	90-150
TeifsMESH 12/TeifsMESH	148	High	90-150
TeifsMESH12/TeifsMESH 12	200	Ultra High	>150
TeifsMAT 15	240	Ultra High	>150
TeifsMAT 20	288	Ultra High	>150

4. Adhesive Strength - ASTM C 297: Minimum of 15 psi (failed within the insulation thickness, not the adhesive).

1.05 SUBMITTALS

- A. Product Data: Provide data on system materials, product characteristics, performance criteria and limitations.
- B. Samples: Submit two samples, 203-mm x 300-mm (8-inch x 12-inch) in size illustrating coating color and texture range for selection.
- C. Manufacturers' Application Guide for TeifsFLEX Wall System: Indicate special procedures, perimeter conditions requiring special attention, jointing requirements, and other details.
- D. Test Reports: Submit copies of test reports verifying performance requirements as requested by owner/architect.

1.06 QUALITY ASSURANCE

- A. Qualifications:
 1. System Manufacturer: Teifs Wall Systems.
 2. Materials shall be third-party certified by the Teifs' Manufacturers Verification Program to ensure that the manufactured materials are the same composition as tested materials.
 3. Applicator: Company specializing in performing the Work of this Section approved by EIFS system manufacturer.

4. Insulation Board Manufacturer: Shall subscribe to the Teifs Third Party Certification and Quality Assurance Program.
- B. Regulatory Requirements:
 1. Insulation board shall be separated from the interior of the building by a minimum 15 minute thermal barrier.
 2. Insulation board thickness and use shall be in accordance with the applicable building codes.
- C. Mock-Up:
 1. Construct mock-up, 1.22-m x 1.22-m (4-ft. x 4-ft.), to represent:
 - a. Substrate, insulation board, finish, color, and surface texture.
 - b. Method of attachment and joints.
 2. Mock-up shall be maintained at the job site.

1.07 PROJECT CONDITIONS

- A. Materials shall be applied when ambient temperature is 40 °F (5 °C) and rising.
- B. Do not install materials in inclement weather without adequate protection.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Teifs' materials shall be delivered to the job site in original, unopened containers with labels intact. Unsatisfactory materials shall not be used.
- B. Storage: Store Teifs materials in a cool, dry location, out of sunlight and protected from weather and other damage, at a minimum temperature of 5 °C (40 °F).
- C. Protect adhesives and finish materials from freezing.

1.09 MAINTENANCE

- A. Follow Teifs Maintenance Guide and TeifsFLEX Application Guide for repair and maintenance instruction.

1.10 WARRANTY

- A. Limited Materials Warranty: Furnish written Limited Warranty on materials from Teifs for a period of 5 years, commencing on date of Substantial Completion.
- B. Limited Labor Warranty: Furnish written Limited Warranty against defects in workmanship from the Licensed Teifs Applicator, for a period of 5 years, commencing on date of Substantial Completion.

PART 2: PRODUCTS

2.01 MANUFACTURERS

Acceptable Manufacturer: Teifs Wall Systems, 220 Burluson, San Antonio, Texas, 78202, 1-800-358-4785, www.teifs.com.

2.02 MATERIALS

- A. Cement: Portland Cement Type I-II, ASTM C 150, white or gray, fresh, no lumps.
- B. Insulation Board Adhesive: Used to adhere the insulation board to the substrate.
 1. Cementitious Adhesive - 100% acrylic-based compound formulated for field mixing with Portland Cement 1:1 by weight:
 - a. TeifsBASE.
 - b. TeifsBASE FR (fiber reinforced).
 2. Non-cementitious Adhesive - flexible, acrylic copolymer adhesive: TeifsAdheez.
- C. Insulation Board: TeifsBoard should meet Teifs specifications and shall be molded expanded polystyrene (EPS), conforming to ASTM C 578, Type I aged, in minimum sheet sizes of 1200 x 2400 mm (24 x 48 inches) with thickness as indicated on the Drawings.
 1. Minimum Thickness: 19-mm (3/4inch).
 2. Thickness Tolerance: 0.8-mm (1/32-inch) maximum.
 3. Board Size: Maximum 1200 x 2400 mm (24 x 48 inches).
 4. Board Size Tolerance: 1.5-mm (1/16-inch) from square and dimension.
 5. Minimum Density: 0.95 pcf.

- D. Teifs Base Coats:
 - 1. Cementitious Base Coat - 100% acrylic-based compound formulated for field mixing with Portland cement 1:1 by weight:
 - a. TeifsBASE.
 - b. TeifsBASE FR (fiber reinforced).
 - 2. Cementitious, dry powder to be field mixed with water: TeifsBASE DB.
 - 3. Non-cementitious acrylic-based Base Coat: TeifsSTRUCTURE.
- E. Waterproof Base Coat/Adhesive – Polymer-Based compound mixed with Portland cement for sills and parapets: TeifsBase Staydry.
- F. Teifs Reinforcing Mesh - Balanced alkali-resistant treated, open-weave glass fiber fabric, compatible with system materials, conforming to ASTM D 578 and the following weight requirements (see Section 1.04 D. 3. for impact resistance):
 - 1. TeifsMESH: Standard Weight Reinforcing Fabric, not less than 4.8 oz./yd².
 - 2. TeifsMESH 6: Standard Extra Reinforcing Fabric, not less than 6.0 oz./yd².
 - 3. TeifsMESH 12: Intermediate Weight Reinforcing Fabric, not less than 12.0 oz./yd².
 - 4. TeifsMAT 15: Heavy Weight Reinforcing Fabric, not less than 15 oz./yd².
 - 5. TeifsMAT 20: Heavy Weight Reinforcing Fabric, not less than 20 oz./yd².
 - 6. TeifsBAKRAP: Strip Reinforcing Fabric, not less than 4.8 oz./yd² for special shapes, backwrapping and detail work.
 - 7. TeifsKORNERAP: Reinforcing Fabric, not less than 8.0 oz./yd² for corners.
- G. Finish Coat: 100% acrylic-based, factory mixed, integral color and texture. Coating Color, Finish and Texture: as selected by architect.
 - 1. Standard Finish: 100% water-based acrylic, resin-based, factory mixed, integral homogenous coloring and texture, by Teifs Wall Systems.
 - a. TeifsFLEX Cuarzo: Variable textured pattern.
 - b. TeifsFLEX Tejas: Creamy sand texture using marble aggregate.
 - c. TeifsFLEX Tejas Fine: Light sand texture using marble aggregate.
 - d. TeifsFLEX Freedom: Allows for almost any ornamental trowel texture.
 - e. TeifsFLEX Piedra Grande: Produces a stucco - like sand texture.
 - 2. Specialty Finish:
 - a. TeifsTUFFSTONE: Colored ceramic beads in clear 100% acrylic binder with increased durability.
 - b. TeifsEARTHSTONE: Natural stone and ceramic beads in a 100% acrylic binder with increased durability.

Specify TeifsPRIME for cementitious substrates or where finish is applied directly to substrate.
 - 3. Primer: Water-based, pigmented, 100% acrylic, TeifsPRIME.
 - 4. Surface Sealer: Water-based 100% acrylic, TeifsSEAL.

2.03 ACCESSORIES

- A. Mechanical Fasteners: To be used as a secondary means of adhering the insulation board to the substrate as necessary. Consult with Teifs for suggestions and determinations.
 - 1. Steel Framing: Self-tapping steel drill screws, ASTM C954.
 - 2. Light gauge Steel Framing: Self-tapping drill screws, ASTM C1002.
 - 3. Wood Framing: Self-tapping drill screws, ASTM C1002.
 - 4. Masonry/Concrete: Nylon fasteners, sized to fit insulation thickness indicated and penetrate substrate to depth required to secure anchorage, 1 7/8 inch in diameter.
- B. Sealant Backer Rod: Closed cell extruded polyethylene foam rod sized to joint configuration.
- C. Bond Breaker Tape: Pressure-sensitive adhesive polyethylene tape, recommended by sealant manufacturer.
- D. Sealant: Dow Corning 790, 795, GE SilPruf LM, Pecora 890 or Pecora Dynatrol IIP with compatible primer and bond breaker.
- E. Galvanized minimum 2.5 lb./yd² metal lath. Can be used as an alternative insulation board attachment method. Contact Teifs for specific installation instructions.

PART 3: GENERAL

3.01 SUMMARY

A. General:

1. Verify that surfaces and wall openings are ready to receive work.
2. Correct unsatisfactory conditions prior to installation.
3. Architect or General Contractor shall ensure that all needed flashings and other water proofing details have been installed correctly.
4. Follow Teifs Check List Prior to Installation located in TeifsFLEX Application Guide for TeifsFLEX Wall System.

B. Substrates:

1. Acceptable Substrates:
 - a. Dens-Glass Gold Sheathing, manufactured by Georgia Pacific.
 - b. Exterior Grade Gypsum Sheathing with Regular or Type X core.
 - c. GlassRoc Gypsum Sheathing, manufactured by BPB America.
 - d. Exterior Fiber Reinforced Cement Board.
 - e. Water Resistant Exterior Fiber-Reinforced Gypsum Sheathing Panel.
 - f. Unglazed Brick.
 - g. Unit Masonry.
 - h. Concrete which has cured for at least 28 days.
 - i. Portland Cement Plaster which contains no more than 10% lime.
 - j. Minimum 1/2 inch 4-ply, APA Exposure 1, Grade C-D or better plywood, with the C side or better, facing the exterior. The plywood shall be installed according to APA guidelines and shall be plane to within a 1/4 inch over a 4-ft. radius.
2. Verify that substrate and adjacent materials are dry and sound, free of foreign substances that will impair bond or successful installation. Ensure that the substrate is not frozen.
3. Verify substrate surface is flat and free of surface irregularities: Maximum 6-mm (1/4 inch) measured within any 1.22-m (4-foot) radius.

3.02 PREPARATION

- A. Report discrepancies materially different from Contract Documents to architect prior to commencement of installation.
- B. Protect adjacent work areas from moisture, deterioration, and soiling resulting from system installation. Provide temporary coverings and other measures to protect other work.

3.03 INSTALLATION

A. General:

1. Install TeifsFLEX Wall System products according to TeifsFLEX Application Guide and TeifsFLEX Details.
2. Install Flashing according to Teifs Window Flashing Technical Bulletin and TeifsFLEX Details.
3. All windows and large openings must be flashed.
4. Install third-party system components to product manufacturers' written instructions.
5. Sealant: Apply at system perimeter and prepared joints to requirements of Section 07900 and manufacturers' written instructions.

3.04 FIELD QUALITY CONTROL

Repair or replace defective materials to eliminate blisters, buckles, excessive crazing, cracking, and other areas where bond to the substrate has failed.

3.05 CLEANING AND PROTECTION OF FINISHED WORK

- A. Remove temporary covers and barriers protecting adjacent construction after installation.
- B. Do not permit finish surface to become soiled or damaged.

[January, 2004] • EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

WARNING:

This product is a component part of a complete TEIFS WALL SYSTEM. Specifications require that only approved, trained or otherwise knowledgeable applicators install such systems. TEIFS cannot be responsible for deterioration of the substrate, mold, mildew and wood rot due to water intrusion from causes such as improperly installed windows; windows that leak at the miter joints, mullions, or through improperly installed glazing; improper flashing, lack of flashing or use of improper flashing materials; use of improper sealants; or inadequate specifications, details or installation of the TEIFS WALL SYSTEM. Sealants and flashing will also deteriorate over time if not maintained. Maintenance of the TEIFS WALL SYSTEM is required. No exterior insulation finish system should be installed on a residential project, (or any other projects as required by the applicable model code), without providing for a secondary weather resistant barrier.



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