



## Teifs AIRTIGHT WALL SYSTEM

SECTION 07240

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### 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.

## **Teifs**

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### Complete Guide Specifications

TeifsAIRTIGHT Wall System  
Section 07240  
Exterior Insulation and Finish System (EIFS)

This guide specification section has been prepared by Teifs, manufacturers of Exterior Insulation and Finish Systems. This section will assist design professionals in the preparation of a specification section on the TeifsAIRTIGHT (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. TeifsAIRTIGHT Wall System: Exterior wall [and soffit] cladding of an air/weather barrier, 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 07270 - Air Barriers
  - 6. Section 07620 - Sheet Metal Flashing and Trim: Perimeter flashings
  - 7. Section 07900 - Joint Sealants
  - 8. Section 09250 - Gypsum Board

### **1.02 SYSTEM DESCRIPTION**

TeifsAIRTIGHT Wall System is an Exterior Insulation and Finish System, Class PB with an air/weather barrier (TeifsWEATHERSEAL), 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 B 117 - Practice for Operating Salt Spray (Fog) Apparatus.
- C. ASTM C 79/C 1396 - Gypsum Sheathing Board.
- 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 Adhesion Properties of Structural Sealants.
- H. ASTM C 1177 - Standard Specification for Glass Mat Gypsum Substrate for use as Sheathing.
- I. ASTM 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. ASTM E 331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- R. ASTM G 23 - Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type), with and without Water for Exposure of Non-metallic Materials.
- S. EIMA 101.01 - Standard Test Method for Freeze-Thaw Resistance of Exterior Insulation and Finish Systems (EIFS), Class PB (Modified ASTM C 67).
- T. EIMA 101.02 - Standard Test Method for Resistance to Water Penetration of Exterior Insulation and Finish Systems (EIFS), Class PB (Modified ASTM E 331).
- U. EIMA 101.86 - Impact Resistance.
- V. EIMA 105.01 - Standard Test Method for Alkali Resistance of GlassFiber Reinforcing Mesh for Use in Exterior Insulation and Finishing Systems (EIFS), Class PB.
- W. TeifsAIRTIGHT Wall System Application Guide.
- X. TeifsAIRTIGHT Wall System Installation guidelines.
- Y. UBC Std. 26-4 – Multi-Story Fire Evaluation of Exterior Non-loadbearing Foam Plastic Insulated Wall System.

### **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.
  5. Conforms to ANSI 99A specification for EIFS.
- 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 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: Contact Teifs for specific wall assembly results.
  3. Resistance to Impact - EIMA 101.86:

Reinforcing Mesh	Test Result		Impact Range	Classification	
	(in-lb.)	[Joules]		(in-lb.)	[Joules]
TeifsMESH	40	[4.52]	Standard/Level 1	25-49	[2.83-5.54]
TeifsMESH 6	52	[5.88]	Intermediate/Level 2	50-89	[2.83-5.54]
TeifsMESH 12	104	[11.75]	High/Level 3	90-150	[10.17-16.95]
TeifsMESH 12/TeifsMESH	148	[16.72]	High/Level 3	90-150	[10.17-16.95]
TeifsMESH 12/TeifsMESH 12	200	[22.6]	Ultra High/Level 4	>150	[>16.95]
TeifsMAT 15	240	[27.12]	Ultra High/Level 4	>150	[>16.95]
Teifs MAT 20	288	[32.54]	Ultra High/Level 4	>150	[>16.95]

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. Manufacturer’s Application Guide for TeifsAIRTIGHT Wall System: Indicate special procedures, perimeter conditions requiring special attention, jointing requirements, and other installation guidelines.
- 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.
  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 5 °C (40 °F) 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 TeifsAIRTIGHT Application Guide for repair and maintenance instructions.

## PART 2: PRODUCTS

### 2.01 MANUFACTURERS

Acceptable Manufacturer: Teifs, 220 Burleson, 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. Air/Weather Barrier:
  - 1. TeifsWeatherseal: A non-cementitious, 100% acrylic trowelable air/weather barrier.
  - 2. Joint Reinforcing Fabric: 4-inch strips of open weave fiberglass mesh tape.
- C. 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.
- D. Insulation Board:
  - 1. TeifsBOARD: 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 24-inches x 48-inches, with thickness as indicated on the Drawings.
    - a. Minimum Thickness: 19-mm (3/4inch).
    - b. Thickness Tolerance: 0.8-mm (1/32-inch) maximum.
    - c. Board Size: Maximum 1200 x 2400 mm (24 x 48 inches).
    - d. Board Size Tolerance: 1.5-mm (1/16-inch) from square and dimension.
    - e. Minimum Density: 0.95 pcf.
- E. 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.
- F. Waterproof Base Coat/Adhesive – Polymer-Based compound mixed with Portland cement for sills and parapets: TeifsBASE STAYDRY.
- G. 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 C. 3. for impact resistance):
  - 1. TeifsMESH: Standard Weight Reinforcing Fabric, not less than 4.8 oz./yd<sup>2</sup>.
  - 2. TeifsMESH 6: Standard Extra Reinforcing Fabric, not less than 6.0 oz./yd<sup>2</sup>.
  - 3. TeifsMESH 12: Intermediate Weight Reinforcing Fabric, not less than 12.0 oz./yd<sup>2</sup>.
  - 4. TeifsMAT 15: Heavy Weight Reinforcing Fabric, not less than 15 oz./yd<sup>2</sup>.
  - 5. TeifsMAT 20: Heavy Weight Reinforcing Fabric, not less than 20 oz./yd<sup>2</sup>.
  - 6. TeifsBAKRAP: Strip Reinforcing Fabric, not less than 4.8 oz./yd<sup>2</sup> for special shapes, backwrapping and detail work.
  - 7. TeifsKORNERRAP: Reinforcing Fabric, not less than 8.0 oz./yd<sup>2</sup> for corners.
- H. 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, manufactured by Teifs.
  - 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 TeifShield Alkali Resistant Primer for cementitious substrates or where finish is applied directly to substrate.
3. Primer: Water-based, pigmented, 100% acrylic, TeifShield Alkali Resistant Primer.
4. Surface Sealer: Water-based 100% acrylic, TeifsSEAL.

### **2.03 ACCESSORIES**

- A. Flashing Tape: A 30 mil SBS modified rubberized asphalt membrane with a polyester top surface.
- B. Flashing Tape Primer: Water-based, flashing tape primer.
- C. Sealant Backer Rod: Closed cell extruded polyethylene foam rod sized to joint configuration.
- D. Bond Breaker Tape: Pressure-sensitive adhesive polyethylene tape, recommended by sealant manufacturer.
- E. Sealant: Dow Corning 790, 791, 795, LM, Pecora 890, Pecora Dynatrol II with compatible primers and bond breaker.

## **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 Teifs Application Guide for TeifsAIRTIGHT Wall System.
- B. Substrates:
  1. Acceptable Substrates:
    - a. Dens-glass Gold Sheathing.
    - b. Exterior Fiber Reinforced Cement Board.
    - c. Water Resistant Exterior Fiber-Reinforced Gypsum Sheathing Panel.
    - d. Unglazed Brick.
    - e. Unit Masonry.
    - f. Concrete which has cured for at least 28 days.
    - g. Portland Cement Plaster which contains no more than 10% lime.
    - h. 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.
    - i. Minimum 7/16 inch thick APA ratio exposure 1 Sheathing with 24/16 span rating according to APA guidelines.
  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 TeifsAIRTIGHT Wall System products according to TeifsAIRTIGHT Application Guide and TeifsAIRTIGHT Installation Guidelines.

2. Install Flashing according to Teifs Window Flashing Technical Bulletin and Teifs Installation guidelines.
3. Install third-party system components to product manufacturers' written instructions.
4. Sealant: Apply at system perimeter and prepared joints to requirements of Section 07900, manufacturer's written instructions and according to Teifs Sealant Application Guide.

**3.04 FIELD QUALITY CONTROL**

- A. 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.

**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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