



# Teifs Scratch & Brown Wall Assembly Specification

CSI SECTION 09 24 00

## CSI SECTION 09 24 00 – PORTLAND CEMENT PLASTER

(Teifs<sup>®</sup> Fiber Reinforced Stucco with Optional Krak-Shield)

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. Supply and installation of TeifsScratch and Brown Stucco Assemblies

#### 1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete
- B. Section 04 20 00 - Unit Masonry
- C. Section 06 16 00 - Sheathing
- D. Section 07 25 00 – Water Resistive Barriers
- E. Section 07 62 00 - Sheet Metal Flashing and Trim
- F. Section 07 90 00 - Joint Protection
- G. Section 08 50 00 - Windows
- H. Section 09 21 16 - Gypsum Board Assemblies

#### 1.3 REFERENCES

- A. ASTM C578 - Specification for Preformed, Cellular Polystyrene Thermal Insulation
- B. ASTM C847 - Standard Specification for Metal Lath
- C. ASTM C897 - Standard Specification for Aggregate for Job-Mixed portland Cement-Based Plaster
- D. ASTM C926 - Standard Specification for Application of portland Cement-Based Plaster
- E. ASTM C933 - Standard Specification for Welded Wire Lath
- F. ASTM C1032 - Standard Specification for Woven Wire Plaster Base
- G. ASTM C1063 - Standard Specification for Installation of Lathing and Furring for portland Cement Based Plaster
- H. ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials
- I. ICC Acceptance Criteria 219 - Acceptance Criteria for Exterior Insulation And Finish Systems
- J. UUB 790A - Specification for Building Paper

#### 1.4 ASSEMBLY DESCRIPTION

- A. TeifsScratch and BrownStucco Assembly: A code complying water resistive barrier, wire fabric or metal lath, TeifsScratch and Brown ( $\frac{3}{4}$  in (19 mm)) and either a Teifs acrylic or elastomeric based finish coat.  
-OR-
- A. TeifsScratch and BrownKrak-Shield™ Stucco Assembly: A code complying water resistive barrier, wire fabric or metal lath, TeifsScratch and Brown ( $\frac{3}{4}$  in (19 mm)), Teifs reinforcing mesh embedded in Teifs Stucco Level Coat, and either a Teifs acrylic or elastomeric based finish coat.

## 1.5 SUBMITTALS

- A. General: Submit Samples, Water resistive barrier Evaluation Reports and manufacturers product datasheets in accordance with Division 1 General Requirements Submittal Section.
- B. Samples: Submit samples for approval. Samples shall be of materials specified and of suitable size as required to accurately represent each color and texture used on project. Prepare each sample using same tools and techniques for actual project application. Maintain and make available, at job site, approved samples.
- C. Manufacturer's Warranty: Submit sample copies of Manufacturer's Warranty indicating Single Source Responsibility for Stucco Base coat, finish coat and optional primer, level coat and reinforcing mesh as specified.

## 1.6 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Manufacturer: Shall have marketed stucco assemblies in United States for at least five years and shall have completed projects of same general scope and complexity.
  - 2. Applicator: Shall be experienced and competent in installation of stucco materials, and shall provide evidence of a minimum of 5 years experience in work similar to that required by this section.
- B. Functional Criteria:
  - 1. General: Stucco application shall be to vertical substrates or to substrates sloped for positive drainage according to ASTM C926. Substrates sloped for drainage shall have additional protection from weather exposure that might be harmful to coating performance.
  - 2. Performance Requirements of Coatings applied to Expanded polystyrene features: Must comply with ASTM E 2568 or ICC Acceptance Criteria AC 219 for EIFS.
- C. Substrate Conditions:
  - 1. Substrate materials and construction shall conform to the the building code having jurisdiction.
  - 2. Substrates shall be sound, dry and free of dust, dirt, laitance, efflorescence and other harmful contaminants.
  - 3. Substrate Dimensional Tolerances: Flat with ¼ in (6.4 mm) within any 4 ft (1.22 m) radius.
  - 4. Maximum deflection of substrate system under positive or negative design loads shall not exceed L/360 of span.
- D. Expansion and Control Joints: Continuous expansion and control joints shall be installed at locations in accordance with ASTM C1063 and ASTM C926.
  - 1. Substrate movement, and expansion and contraction of Teifs Scratch and Brown Stucco 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 specified by the designer or shown on the project drawings.
  - 2. In accordance with ASTM C1063, expansion or control joints shall be installed in walls not more than 144 ft<sup>2</sup> (13.4 m<sup>2</sup>) in area, and not more than 100 ft<sup>2</sup> (9.3 m<sup>2</sup>) in area for all non-vertical applications. The distance between joints shall not exceed 18 ft (5.5 m) in either direction or a length-to-width ratio of 2-½ to 1.
  - 3. For direct application to concrete or masonry, stucco joints are required only at control/expansion joints in the underlying concrete or masonry

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver Teifs Stucco Assembly products in original packaging with manufacturer's identification.
- B. Storage: Store Teifs Stucco Assembly products products in dry location, off the ground, protected from moisture.

## 1.8 SITE / ENVIRONMENTAL CONDITIONS

- A. Substrate Temperature: Do not apply Teifs Stucco Assembly products to substrates whose temperature are below 40° F (4° C) or contain frost or ice.

- B. Inclement Weather: Do not apply TeifsScratch and Brown Stucco Base during inclement weather, unless appropriate protection is employed.
- C. Sunlight Exposure: Avoid, when possible, installation of the TeifsScratch and Brown in direct sunlight. Application of Teifs Finishes in direct sunlight in hot weather may adversely affect aesthetics.
- D. Do not apply stucco base coats or finishes if ambient temperature falls below 40° F (4 ° C) within 24 hours of application. Protect stucco from uneven and excessive evaporation during dry weather and strong blasts of dry air.
- E. Prior to installation, the wall shall be inspected for surface contamination, or other conditions that may adversely affect the performance of the TeifsScratch and Brown Stucco Assembly, and shall be free of residual moisture.

#### **1.9 COORDINATION AND SCHEDULING:**

- A. Coordination: Coordinate TeifsScratch and Brown Stucco Assembly installation with other construction operations.

#### **1.10 WARRANTY**

- A. Warranty: Upon request, at completion of installation, provide Teifs Standard Limited Stucco Warranty.

EDITOR NOTE: SEE TEIFS'S WARRANTY SCHEDULE FOR AVAILABLE TEIFSSCRATCH AND BROWN ASSEMBLY WARRANTIES.

### **PART 2 - PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. Manufacturer: Parex USA, Inc., 4125 E. La Palma Ave., Suite 250, Anaheim, CA 92807
- B. Components: Obtain components manufactured by Parex USA of TeifsScratch and Brown Stucco Assembly from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from Parex USA for this project.

#### **2.2 MATERIALS**

- A. Stucco Materials:
  1. TeifsScratch and Brown Stucco
    - a. TeifsScratch and Brown: Fiber-reinforced factory blended portland cement, hydrated lime and proprietary ingredients, cement scratch and brown coat conforming to ASTM C926.

EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE OPTIONAL TEIFS ADMIX & BONDING AGENT FOR ENHANCED PERFORMANCE

- B. Teifs Admix & Bonding Agent: 100 percent acrylic emulsion additive for portland cement based products, to enhance curing, adhesion, freeze-thaw resistance and workability and as an acrylic polymer bonding agent.

EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE LEVELING AND REINFORCING COAT FOR ENHANCED CRACK RESISTANCE PERFORMANCE.

- C. Teifs Leveling and Reinforcing Coat (TeifsOne Coat Krak-Shield Stucco Assembly):
  1. Teifs Stucco Level Coat™: Copolymer based, factory blend of cement and proprietary ingredients requiring addition of water.
  2. TeifsBase: 100% acrylic polymer base, requiring the addition of portland cement.
  3. TeifsBase DB: Copolymer based, factory blend of cement and proprietary ingredients requiring addition of water.
  4. Teifs Reinforcing Meshes:
    - a. TeifsMesh: Weight 4.8 oz. per sq. yd. (162 g/m<sup>2</sup>) reinforcing mesh.
    - b. TeifsBakrap: Reinforcing mesh used for backwrapping and details, and to embed in any Teifs Base Coat.

STUCCO LEVEL COAT SHALL NOT BE USED AS AN ADHESIVE OR BASE COAT FOR EXPANDED POLYSTYRENE INSULATION BOARD SHAPES OR FEATURES

D. Expanded Polystyrene Features over TeifsScratch and Brown Stucco

1. Adhesive and Base Coat
  - a. TeifsBase: 100% acrylic polymer base, requiring the addition of portland cement.
  - b. TeifsBase DB: Copolymer based, factory blend of cement and proprietary ingredients requiring addition of water.
2. Insulation Board
  - a. In compliance with manufacturer's requirements for Standard System EIFS.
  - b. Produced and labeled under a third party quality program as required by applicable building code; and produced by a manufacturer approved by Parex USA.
  - c. Shall conform to ASTM C578, ASTM E 2430 Type I and the Parex USA specification for Molded Expanded Polystyrene Insulation board.
3. Reinforcing Mesh
  - a. TeifsMesh: Weight 4.8 oz/yd<sup>2</sup> (162 g/m<sup>2</sup>) reinforcing mesh.
  - b. TeifsMesh 12: Weight 12.0 oz/yd<sup>2</sup> (405 g/m<sup>2</sup>) reinforcing mesh.
  - c. TeifsBakrap: Reinforcing mesh used for backwrapping and details.

EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE TEIFS PRIMER FOR ENHANCED PERFORMANCE AND WARRANTY.

E. Teifs Primers:

1. TeifsSheild Alkali Resistant Primer: 100% acrylic based coating to prepare surfaces for Teifs finishes.

EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE ONE FINISH TYPE CHOOSE TEIFS OPTIMUM OR E-LASTIC FINISH FOR DIFFERENT LEVELS OF ENHANCED WARRANTY.

F. Teifs Finish:

1. TeifsLastic® Finish: Factory blended, 100 % acrylic polymer based elastomeric textured finish, integrally colored.
    - a. Finish texture and color as selected by Project Designer
- OR-
1. Teifs Flex Finish™: Factory blended, 100% acrylic polymer based finish, integrally colored..
    - a. Finish texture and color as selected by Project Designer
- OR-
1. Teifs DRP Finish™: Factory blended, 100% acrylic polymer based finish, integrally colored.
    - a. Finish texture and color as selected by Project Designer.

**2.3 RELATED MATERIALS AND ACCESSORIES**

- A. General: TeifsScratch and Brown Stucco Assembly and its related materials shall conform to ASTM C926, this specification and Teifs Product Data Sheets.
- B. Substrate Materials:
  1. Substrate shall be gypsum sheathing, cement board, fiberboard, plywood, OSB, concrete, concrete masonry or other sheathing allowed by the application building code.
  2. The sheathing shall be in compliance with the building code having jurisdiction.
  3. Refer to Related Sections for project requirements.
- C. Water-Resistive Barriers:
  1. For non-wood based sheathing shall be either:
    - a. 1 layer asphalt-saturated felt complying with ASTM D226 Type I or UUB 790a

- b. Lath with appropriate paper backing.
  - c. Other recognized equivalent.
2. For wood based sheathing shall be either:
    - a. 2 layers of Grade D asphalt saturated Kraft building paper, or 1 layer of the Kraft building paper plus paper backed lath.
    - b. Other recognized equivalent.
  3. For solid sheathing with foam plastic insulation installed over the water-resistive barrier shall be either:
    - a. Dupont Tyvek®, Stuccowrap® or DrainWrap™
    - b. Other sheet good Water resistive barrier, incorporating in itself a means of drainage, and maintaining a current ICC Evaluation Report
  4. Open Framing:
    - a. 1 layer Grade D asphalt saturated Kraft building paper.
    - b. 1 layer asphalt-saturated felt complying with ASTM D226 Type I.
    - c. Other recognized equivalent.
- D. Polystyrene Insulation(Type V Construction Only):
1. Over open framing: Tongue and Groove Expanded (EPS), or Extruded (XPS), having a minimum density of 1.5 lb/ft<sup>3</sup> (21 kg/m<sup>3</sup>), thickness of 1 -1.5 in (25.4 - 38mm).
  2. Over sheathing: Expanded (EPS), or Extruded (XPS), having a nominal density of 1 lb/ft<sup>3</sup> (14 kg/m<sup>3</sup>).

EDITOR NOTE: THE SELECTION OF AN APPROPRIATE TYPE OF MATERIAL FOR ACCESSORIES SHALL BE DETERMINED BY APPLICABLE SURROUNDING CLIMATIC AND ENVIRONMENTAL CONDITIONS SPECIFIC TO THE PROJECT LOCATION, SUCH AS SALT AIR, INDUSTRIAL POLLUTION, HIGH MOISTURE, OR HUMIDITY.

- E. Lath and Accessories: Conform to ASTM C847, ASTM C933, ASTM C1032 and ASTM C1063 and Appendix
1. Accessories: Manufacturer's standard steel products with minimum G60 galvanizing unless otherwise indicated as rigid polyvinyl chloride (PVC plastic) or zinc alloy

EDITOR NOTE: SELECT LATH TYPE AND WEIGHT.

2. Metal Plaster Bases: Minimum 17 gauge self-furred stucco netting, minimum 2.5 lb/yd<sup>2</sup> (1.4 kg/m<sup>2</sup>) or 3.4 lb/yd<sup>2</sup> (1.8 kg/m<sup>2</sup>) expanded metal diamond lath, or welded wire lath in accordance with applicable codes and standards.
3. Weep Screeds: Foundation weep screed with minimum 3-1/2 inch vertical attachment flange.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verify project site conditions under provisions of Section 01 00 00.
- B. Compliance: Comply with manufacturer's instructions for installation of TeifsScratch and Brown Stucco Assembly.

REMINDER: TEIFSSCRATCH AND BROWN STUCCO ASSEMBLY MUST INSTALLED OVER A CODE COMPLYING WATER RESISTIVE BARRIER OR SOLID SURFACE OD MASONRY OR CONCRTE. WALL PERFORMANCE IS DEPENDENT UPON, AMONG OTHER FACTORS, PROPER FLASHING AND JOINT SEALING, AND ATTENTION TO PROPER FLASHING AND JOINT SEALANT DETAILS INDICATED ON DRAWINGS.

- C. Substrate Examination: Examine prior to TeifsScratch and Brown Stucco Base installation as follows:
  1. OSB substrates shall be gapped 1/8 in (3.2 mm) at all edges.
  2. Substrate shall be examined for soundness, and other harmful conditions.
  3. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.

4. Substrate construction in accordance with substrate material manufacturer's specifications and applicable building codes.
- D. Advise Contractor of discrepancies preventing installation of the TeifsScratch and Brown Stucco Assembly Stucco Assembly. Do not proceed with the TeifsScratch and Brown Stucco Assembly work until unsatisfactory conditions are corrected.
- E. Ensure that flashing has been installed per Specification Section 07 60 00 - Flashing and Sheet Metal.

### **3.2 PREPARATION**

- A. Water Resistive Barrier:
  1. The water-resistive barrier is placed over all substrates except concrete or unpainted masonry. Painted (coated) CMU is to use a bond breaker such as asphalt paper and lath if the paint or coating cannot be removed.
  2. Installed according to manufacturers instructions.
- B. Expanded Polystyrene:
  1. Assemblies incorporating EPS must specify the Water resistive barrier in Section 2.3 C. 3.
  2. The boards described in Section 2.3 D. 1. are placed horizontally, with tongues faced upward, and are temporarily held in place with galvanized staples or roofing nails, on wood framing, and with self-tapping screws, on metal framing. Vertical butt joints must be staggered a minimum of one stud space from adjacent courses, and must occur directly over studs.
  3. Insulation Boards installed over a solid sheathing should be fastened to allow temporary placement until the lath is installed.
  4. The lath is applied tightly over the insulation board and fastened through the insulation board to wood studs or structural sheathing, Care must be taken to avoid overdriving fasteners.
- C. Wire Fabric Lath and Metal Lath: Install according to ASTM C1063 and Appendix and the Building Code.
- D. Concrete (Cast-in-Place): Provide a surface that is slightly scarified, water absorbent, straight and true to line and plane. Remove form ties and trim projecting concrete so it is even with the plane of the wall. Remove form release agents.
- E. Concrete Masonry Units: Remove projecting joint mortar so it is flush with the plane of the wall. Remove surface contaminants such as efflorescence, existing paint or any other bond inhibiting material by sandblasting, waterblasting, wire brushing, chipping or other appropriate means. Pre-moisten the surface with water just prior to placement of stucco, or apply one uniform coat of bonding agent by brush or roller.

### **3.3 MIXING**

- A. Mix Teifs proprietary products in accordance with manufacturer's instructions, including the applicable TeifsScratch and Brown Stucco Assembly Product Data Sheets.
- B. Admix - Teifs Admix & Bonding Agent
  1. Mix up to 1 gal (3.8 L) per 1 bag of TeifsScratch and Brown™. Add after dry components and the majority of the water has been mixed. Mix no longer than required to provide a uniform mixture. DO NOT OVER-MIX. Overmixing entrains excessive amounts of air which weaken the material. Do not re-temper mixes over 20 minutes old.

### **3.4 APPLICATION**

- A. General: TeifsScratch and Brown Stucco Assembly and its related materials shall conform to ASTM C926, this specification and Teifs Product Data Sheets.
- B. Bonding Agent -Teifs Admix and Bonding Agent
  1. Apply at the rate of 250 sq. ft. per gallon using a low-pressure sprayer brush- or roller. (application in direct sunlight may cause the product to dry too quickly)
  2. Stucco finishes or other cement products should be applied after 290 Adacryl Bonding Agent becomes tacky up to 72 hours after application, but not while wet.

C. TeifsScratch and Brown Stucco Assembly:

1. Scratch Coat:
  - a. Apply scratch coat to a minimum thickness of  $\frac{3}{8}$  in (10 mm), using sufficient trowel pressure to key stucco into lath or to create bond to substrates as applicable.
  - b. Prior to initial set, scratch horizontally to provide key for bond of brown coat.
  - c. Moist cure scratch coat with clean potable water for at least 48 hours in accordance with ASTM C926 and the building codes following initial application (unless brown coat is applied as soon as the scratch coat has achieved sufficient rigidity to support the brown coat).
2. Brown Coat:
  - a. Apply brown coat to a minimum thickness of  $\frac{3}{8}$  in (10 mm), using sufficient trowel pressure to key stucco into scratch coat.
  - b. Rod surface to true plane and float to densify.
  - c. Trowel to smooth and uniform surface to receive acrylic polymer finish coat
  - d. Moist cure brown coat with clean potable water for at least 48 hours, in accordance with ASTM C926 and the building codes.

EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE LEVELING AND REINFORCING COAT FOR ENHANCED CRACK RESISTANCE PERFORMANCE

D. Leveling and Reinforcing Coat (TeifsScratch and Brown Stucco Assembly Krak-Shield Stucco Assembly):

1. Allow Scratch and Brown Stucco Base to dry and moist cure a minimum of 48 hours before applying the leveling and reinforcing coat.
2. Using a stainless steel trowel, apply the Teifs Stucco Level Coat over the Scratch and Brown Stucco Base at a thickness of  $\frac{1}{16} - \frac{3}{32}$  in. (1.6 – 2.4 mm).
3. Fully embed the Teifs reinforcing mesh, either 355 Standard Mesh or 358.10 Intermediate Mesh, into the wet Stucco Level Coat including diagonal strips at corners of openings and trowel smooth. If 355 Standard Mesh is used, seams are overlapped 2- $\frac{1}{2}$  in (63 mm), and if the 358.10 Intermediate Mesh is used, seams are butted and covered by strips of Teifs Detail mesh 356..
4. The Teifs acrylic primers and finishes can be applied as soon as the Teifs Stucco Level Coat has cured, typically after 24 hours.

E. Teifs Primer and Finish:

1. Remove surface contaminants such as dust or dirt without damaging the substrate.
2. Ambient and surface temperature must be 40°F (4°C) or higher during application and drying time. Supplemental heat and protection from precipitation must be provided as needed.
3. Use only on surfaces that are sound, clean, dry, unpainted, and free from any residue that might affect the ability of the finish to bond to the surface.

EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE ONE #4

4. TeifsScratch and Brown Krak-Shield Stucco Assembly
  - a. Before the application of the finish, the base coat must have cured a minimum of 24 hours or longer as required by conditions. Examine the cured base coat for any irregularities.
  - b. Correct these irregularities to produce a flat surface.

-OR-

4. TeifsScratch and Brown Stucco Assembly
  - a. After Moist curing, allow the TeifsScratch and Brown Stucco Base to air dry.
    - (1) Minimum of 3 days if applying a Teifs Primer

-OR-

- (1) Minimum of 7 days before application of a Teifs Acrylic or Elastomeric based Finish Coat
5. Apply exterior wall finish in number of coats thickness recommended by manufacturer to achieve texture indicated, using sufficient trowel pressure or spray velocity to bond finish to base coat.
6. Protect Teifs Finish Coats from inclement weather until completely dry.



# Teifs Scratch & Brown Wall Assembly Specification

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### F. Curing

1. TeifsScratch and Brown: Moist Cure in accordance with ASTM C926 and the building codes.
2. Air cure acrylic based and elastomeric finish coats only, do not wet cure.

### 3.5 CLEAN-UP

- A. Removal: Remove and legally dispose of TeifsScratch and Brown Stucco component debris material from job site.

### 3.6 PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed stucco from dust, dirt, precipitation, and freezing during installation.
- C. Provide protection of installed finish from dust, dirt, precipitation, freezing and continuous high humidity until fully cured and dry.
- D. Clean exposed surfaces using materials and methods recommended by the manufacturer of the material or product being cleaned. Remove and replace work that cannot be cleaned to the satisfaction of the Project Designer/Owner.

### END OF SECTION

Disclaimer: 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.



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