

TESS™ Thinset Exterior Surfacing System

The Next Generation in Architectural Finishes

TESS Finish in One Coat Stucco Applications Architectural Specification — LF

International Code Council

Division 09 — Finishes, Section: 09220, Portland Cement Plaster

This specification is intended for use by design/construction professionals and any user of TESS products to assist in developing project specifications. It provides guidance on the application of TESS Thinset Exterior Surfacing System to sound, vertical, above grade exterior building walls.

TESS Thinset Exterior Surfacing System functions as a decorative and protective wall cladding. It consists of multiple components which may include primer, one coat stucco, finish coat and sealant. These components, when properly integrated with other components of construction, form a barrier wall which is intended to resist water penetration at its outer surface. Successful construction projects require the proper integration of all components of construction. This specification serves to further that understanding. Most notably for wall claddings, proper use of flashing to redirect water to the building's exterior is essential. Great care has been exercised to provide the best information possible to ensure a quality installation.

Throughout the specification, italicized notes such as this are explanatory and intended to guide the designer/user in the proper selection and use of materials.

This specification should be modified where necessary to accommodate individual project conditions and local building code.

Note to Specifier: This guide specification incorporates CSI MasterFormat™ 2004 Edition Numbers & Titles.

PART 1 — GENERAL

1.01 SUMMARY

- A. Provide TESS Thinset Exterior Surfacing System for vertical above grade concrete, masonry and exterior wall cladding in a one coat stucco-type installation.

EDITOR'S NOTE: DELETE BELOW IF NO SEALANT INSTALLATION IS REQUIRED FOR THE PROJECT.

Products installed but not supplied under this section:

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

1.02 STUCCO BASE DESCRIPTION

EDITOR'S NOTE: MODIFY BELOW TO SUIT PROJECT REQUIREMENTS.

- A. Description of TESS One Coat Stucco: A proprietary mixture of Portland cement, sand, glass fibers, and proprietary ingredients installed over concrete, CMU, wire fabric or metal lath, and TESS Finish as an exterior wall cladding.

B. TESS One Coat Stucco functional criteria:

1. General: Stucco application shall be to vertical substrates or to substrates sloped for positive drainage. Non-vertical surfaces shall have additional protection from weather exposure that might be harmful to finish coat performance.
2. Substrate conditions:
 - a. Substrates shall be sound, dry, and free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
 - b. Substrate dimensional tolerances: Flat within 1/4 in. (6.4mm) inside any 4 ft. (1,219mm) radius.
 - c. Maximum deflection of substrate system under positive or negative design loads shall not exceed 1/360 of span.
3. Expansion and control joints: Continuous expansion and control joints shall be installed at locations in accordance with manufacturer's recommendations.
 - a. Substrate movement and expansion and contraction of TESS One Coat 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 recommended by finish coat manufacturer.
 - b. Wall areas greater than 144 sq. ft. (13.4m²), but not less than 100 sq. ft. (9.30m²), shall have expansion and contraction joints installed in accordance with applicable and local building codes. The distance between joints shall not exceed 18 ft. (5.5m) in either direction or a length-to-width ratio of 2.5 to 1.

1.03 SUBMITTALS

- A. General: Submit samples, evaluation reports and certificates in accordance with Division 1 General Requirements submittal section.
1. Samples: Submit samples for approval. Samples shall be of materials specified and of suitable size as required to accurately represent each color and texture to be used on project. Prepare each sample using the same tools and techniques as for actual project application. Maintain and make available, at job site, approved samples.
 2. Manufacturer's warranty: Submit sample copies of manufacturer's warranty indicating single source responsibility.

1.04 QUALITY ASSURANCE

- A. Qualifications:
1. Manufacturer: Shall have marketed stucco systems in the United States for at least three years; shall have completed at least three projects utilizing this stucco system; shall have completed projects of the same building size and type as this project.
 2. Applicator: Shall be experienced and competent in the installation of stucco-like materials and shall provide evidence of a minimum of three years experience in work similar to that required by this section.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver products in original packaging with manufacturer's identification.
- B. Storage: Protect Portland cement based materials (bag products) from moisture and humidity.

TESS bags shall be placed under cover, off the ground in a dry location. Store TESS products out of direct sunlight.

1.06 PROJECT/SITE CONDITIONS

(Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying and may require adjustments in the scheduling of work to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain and freezing.)

- A. Environmental conditions: Comply with manufacturer's recommendations for environmental conditions affecting product performance.
 - 1. Ambient air temperature for installation: Minimum of 40°F (4°C) and rising, and remaining so for 24 hours thereafter.
 - 2. Substrate temperature: Do not apply TESS One Coat Stucco to substrates whose temperatures are less than 40°F (4°C) or contain frost or ice.
 - 3. Inclement weather: Do not apply TESS One Coat Stucco during inclement weather unless appropriate protection is employed that would negate or neutralize environmental conditions and allow compliance with manufacturer's recommendations for installation.
 - 4. Sunlight exposure: When possible, avoid installation of TESS One Coat Stucco and the finish coat in direct sunlight. Schedule finish coat application at times when wall surfaces are in the shade or not exposed to direct sunlight.
 - 5. TESS One Coat Stucco materials shall not be applied if ambient temperature exceeds 120°F (49°C) or falls below 40°F (4°C) within 24 hours of application. Protect stucco from uneven and excessive evaporation, especially during hot, dry weather.
 - 6. Prior to installation, the wall shall be inspected for surface contamination or other defects that may adversely affect the performance of TESS One Coat Stucco, and shall be free of residual moisture.

1.07 COORDINATION/SCHEDULING

(The work in this section requires close coordination with related sections and trades. Sequence work to provide protection of construction materials from weather deterioration)

- A. Provide site grading such that cladding terminates above finished grade a minimum of 8 inches (203 mm) or as required by code.
- B. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall. Also provide sill flashings throughout.
- C. Install window and door head flashing immediately after windows and doors are installed.
- D. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
- E. Install copings and sealant immediately after installation of the cladding and when coatings are dry.
- F. Attach penetrations through cladding to structural support and provide water tight seal at penetrations.

1.08 WARRANTY

- A. Provide manufacturer's standard limited warranty.
- B. Provide applicator's warranty.

PART 2 — PRODUCTS

2.01 MANUFACTURER

- A. Manufacturer: Formulated Solutions LLC, 25-44 Borough Place, Woodside, NY 11377
1. TESS One Coat Stucco
Stucco base: Polymer-reinforced stucco, factory-blended Portland cement, chopped fiber strands, and proprietary additives.
 2. TESS Primer
Primer coat: polymer-reinforced coating, tinted to match textured finish color.
 3. TESS Finish
 - a. Texture: _____
 - b. Color: _____

2.02 MATERIALS

- A. Stucco materials: Fiber-Reinforced Stucco (Concentrate): TESS One Coat Stucco is a proprietary mixture of Portland cement, glass fibers, and proprietary ingredients. Five to seven gallons (19–27 Liters) of clean, potable water and approximately 225 lb. (102 kg) of sand, complying with ASTM C-144, are to be field-added.
- B. TESS Primer.
- C. TESS Finish. Finish type, texture, and color as selected by architect.

2.03 RELATED MATERIALS

- A. General: Related materials shall conform to the requirements of ICC ES Evaluation Report No. _____ and shall conform to this specification.
- B. Substrate materials:
1. Gypsum sheathing: Gypsum sheathing board: Minimum ½ in. (12.7mm) thick, core-treated, weather-resistant, exterior gypsum sheathing complying with ASTM C 79 or ASTM C 1177 and complying with U.B.C. Standard No. 47-10.
 2. Cement board sheathing conforming to ASTM C 1186.
 3. Fiberboard: Minimum ½ in. (12.7mm) thick fiberboard complying with U.B.C. Standard No. 25-24.
 4. Plywood: Minimum 5/16 in. (7.9mm) thick exterior-grade or exposure 1 plywood for studs spaced 16 in. (406.4mm) o.c. and 3/8 in. (9.5mm) thick exterior-type plywood minimum for studs spaced 24 in. (609.6mm) o.c. Plywood shall comply with U.B.C. Standard No. 25-9.
 5. Oriented Strand Board (OSB): Minimum 7/16 in. (11mm) thick, exposure 1, may be used with framing as for plywood.
 6. Concrete (poured or precast) and masonry.
- C. Water-Resistive Barriers:
1. For non-wood based sheathing shall be:
 - a. DuPont Tyvek Stucco Wrap, see ESR-2375, 1993, 2375 ICC reports.
 - b. Application instructions provided by Dupont in:
 - (i) DuPont Tyvek Weather Barrier, Commercial Installation Guide.

- (ii) DuPont Tyvek Water-Resistive Barriers, Installation Guidelines.
- 2. For wood based sheathing shall be:
 - a. DuPont Tyvek Stucco Wrap, see ESR-2375, 1993, 2375 ICC reports.
 - b. Application instructions provided by Dupont in:
 - (i) DuPont Tyvek Weather Barrier, Commercial Installation Guide.
 - (ii) DuPont Tyvek Water-Resistive Barriers, Installation Guidelines.
- 3. For wood based sheathing with foam plastic insulation installed over the water-resistive barrier shall be:
 - a. DuPont Tyvek Stucco Wrap, see ESR-2375, 1993, 2375 ICC reports.
 - b. Application instructions provided by Dupont in:
 - (i) DuPont Tyvek Weather Barrier, Commercial Installation Guide.
 - (ii) DuPont Tyvek Water-Resistive Barriers, Installation Guidelines.
- D. Air Barrier (Optional):
 - a. DuPont Tyvek Stucco Wrap, see ESR-2375, 1993, 2375 ICC reports.
 - b. Application instructions provided by Dupont in:
 - (i) DuPont Tyvek Weather Barrier, Commercial Installation Guide.
 - (ii) DuPont Tyvek Water-Resistive Barriers, Installation Guidelines.
- E. Lath: Lath and accessories as specified in ASTM C 847 and ASTM C 1063 and Appendix.
- F. Seals, sealants, and bond breakers: Sealants shall conform to ASTM C 920, Grade NS, Class 25, Use NT. Backer rod shall be closed-cell polyethylene foam.

PART 3 — EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's instructions for installation of one-coat stucco.

REMINDER: THOUGH TESS ONE COAT STUCCO IS INSTALLED OVER A WATER-RESISTIVE BARRIER (DuPont Tyvek StuccoWrap), THE PERFORMANCE OF EVERY INSTALLATION IS DEPENDENT UPON THE ATTENTION GIVEN TO PROPER FLASHING AND JOINT SEALANT DETAILS AS NOTED ON THE JOB DRAWINGS.
- B. Substrate examination: Examine prior to TESS One Coat Stucco installation for compliance as follows:
 - 1. Substrate shall be of a type approved by Formulated Solutions LLC. Plywood and OSB substrates shall be gapped 1/8 in. (3mm) between panels, except that the 4 ft. edges of OSB panels shall be gapped 1/4 in. (6.4mm).
 - 2. Substrate shall be examined for soundness and other unacceptable conditions.
 - 3. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
- C. Advise contractor of discrepancies preventing the installation of the TESS One Coat Stucco. Do not proceed with the one-coat stucco work until unsatisfactory conditions are corrected.
- D. Correction of unsatisfactory conditions of substrates installed by other trades shall be the responsibility of the contractor.

3.02 RELATED MATERIALS INSTALLATION

- A. General: Installation of related materials shall conform to this specification.
- B. Substrate materials:
 - 1. Substrate construction in accordance with substrate material manufacturer's specifications and applicable building codes.
 - 2. Maximum deflection of the substrate shall be limited to 1/360.
- C. Water-resistive barrier: The water-resistive barrier is placed over all substrates except concrete or masonry.
- D. Lath and accessories: Install in accordance with ASTM C 1063 and applicable building codes.
- E. Sealants and backer rod: To be installed, where required, in accordance with the sealant manufacturer's specifications and published literature, and using the sealant manufacturer's recommended primers.

3.03 PREPARATION

Field mixing: Mix TESS proprietary products in accordance with manufacturer's instructions, including TESS One Coat Stucco product data sheet.

3.04 INSTALLATION

- A. General: TESS One Coat Stucco installation shall conform to this specification and to TESS product data sheets.
- B. Stucco:
 - 1. The TESS One Coat Stucco mixture shall be applied in one or two coats to a minimum thickness of 3/8 in. (9.5mm) by hand troweling or machine spraying the mixture to the wire lath in accordance with TESS One Coat Stucco product data sheet. The maximum thickness applied in one pass should not exceed 1/2 in. (12.7 mm).
 - 2. Keep TESS One Coat Stucco moist for at least 24 hours (longer in dry weather) by lightly fogging walls. Start continuous light fogging after initial set of 1–2 hours.
 - 3. Allow TESS One Coat Stucco to dry thoroughly before applying TESS Primer.
- C. Primer: TESS Primer shall be rolled onto the one coat stucco prior to finish according to product data sheet.
- D. Finish: Apply according to TESS Finish product data sheet.

3.05 CLEAN-UP

Removal: Remove and legally dispose of TESS One Coat Stucco installation debris from job site.

ATTENTION

Formulated Solutions LLC (FS) products are intended for use by qualified professional contractors, not D-I-Y consumers or handymen. TESS systems and components must be specified by a qualified design professional, general contractor or builder as an element of a larger construction project. It must be installed in accordance with FS's instructions, the designer's specifications and local building code. Improper use of FS products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to this product, and to the structure of the building or its components.

FS disclaims all, and assumes no, liability for

- Products improperly applied by unqualified persons or entities
- An improperly designed or constructed building
- The nonperformance of adjacent building components or assemblies
- Other construction activities beyond FS's control
- On-site inspections

FS has provided the enclosed Instructions and Recommendations [I/R] to assist the USER in the application of this product. These I/Rs are not warranted to be comprehensive, complete, thorough or conclusive as regards any specific installation. It is the USER'S obligation to ensure that the product is suitable for its intended use and that it is compatible with existing conditions or applications of other coincident or adjoining materials. The liability of the SELLER and MANUFACTURER, whether express or implied, whether in contract or in tort, arising out of warranties, representations, instructions or defects from any cause shall be limited exclusively to replacing the product, provided the same is proved defective, or refunding the purchase price upon return of the unused product. In no event will SELLER or MANUFACTURER be liable for consequential damages, including but not limited to loss of materials, costs of labor, loss of profits, costs of replacement goods, or other commercial loss. The USER accepts the product AS IS, and without warranties express or implied.

Subject to FS approval, certain installations of TESS may be eligible for a limited warranty provided by FS. For further information, please contact your Distributor.

For the most current and complete information on proper application, clean-up, mixing, specifications, warranties, cautions and disclaimers, please refer to the company manual or our website at www.TESSFinishes.com.

Formulated Solutions LLC | 25-44 Borough Place | Woodside, NY 11377
Tel 1 718 267 6380 | Fax 1 718 204 6013 | www.TESSFinishes.com

~~~