



SECTION 035416

HYDRAULIC CEMENT UNDERLAYMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. TEC® PerfectFinish™ Skim Coat, Fast-Setting Cement-Based Underlayment or CHAPCO® SmoothFinish™ Skim Coat and Leveler
- B. TEC Multipurpose Primer or CHAPCO® MP Multipurpose Primer (Gypsum substrates only)

1.2 RELATED SECTIONS

- A. Section 03300 - Cast Underlayment Concrete
- B. Section 09000 - Finishes

1.3 REFERENCES

- A. ASTM C 109 Modified - Compressive Strength of Hydraulic Cement Mortars.
- B. ASTM F 2170 Relative Humidity in Concrete

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Manufacturer's MSDS and Product Data Sheets on each product to be used, including:
 - 1. Surface preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing Products specified in this section.
- B. **Installer Qualifications:** Firm specializing in installation of cementitious underlayments and toppings, with minimum 5 years documented experience with projects of similar scope, design, and materials. Installation of the HB Fuller Construction products must be completed by a factory-trained applicator, **INSTALL Substrate Prep Certified Installer**, or equal, using mixing equipment and tools approved by the manufacturer.
- C. Underlayment shall be able to be installed from a true featheredge to 1/2" thick over large areas. For areas greater than 1/2 in thickness, apply in two-coats allowing the first coat to set before applying the second. Do not exceed a total thickness of 1".
- D. Underlayment shall not require that cement-based substrates be primed.
- E. Underlayment shall be formulated with a calcium-aluminate cement, developing a compressive strength of 3600 psi when tested in accordance with ASTM C 109 Modified.
- F. Underlayment shall be covered by most flooring materials as soon as the surface hardens (15 - 60 minutes).
- G. Underlayment shall not require the addition of latex or any additive other than potable water, unless used as an embossing leveler.
- H. Gypsum substrate (minimum tensile bond strength of 72 psi (0.5 MPa)) requires priming with TEC® Multipurpose Primer or CHAPCO® MP Multipurpose Primer before underlayment installation.
- I. Please contact a TEC representative for instructions for installation recommendations over all other substrates, 800-832-9023.
- J. Warranty: Product shall be free from manufacturing defects and will not break down or deteriorate under normal use for 1 year.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of section 01650 and section 01660.
- B. Store products in manufacturer's unopened packaging until ready for installation.

- C. Store products in a cool dry place out of direct sunlight.
- D. Maximum shelf life is 1 year from date of manufacture in unopened containers.

1.7 PROJECT CONDITIONS

- A. For interior application only.
- B. Substrate temperature should be a minimum of 43°F (6°C) during application and air temperature maintained above 50° (10°C).
- C. Not for use in conditions of hydrostatic pressure or excessive moisture (>95% Relative Humidity) per ASTM F2170. Applications above 95% RH up to and including 100% RH (25 pounds per 1000 sq. ft. per 24 hours per ASTM F 1869) require the application of TEC® LiquiDam™, CHAPCO'S DEFENDER two-part 100% solids epoxy or CHAPCO® DEFENDER EZ™, TEC® LiquiDam EZ™ 1-part, polymeric emulsion as manufactured by H.B. Fuller Construction Products prior to installation of skim coat.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Brand/Manufacturer: TEC®/ H.B. Fuller Construction Products Inc.; 1105 S. Frontenac Street, Aurora, IL 60504. Tel: 800-832-9023. Fax: 800-952-2368. Web: www.tecspecialty.com or chapco-adhesive.com
 - 1. TEC® PerfectFinish™ Skim Coat Patch
 - 2. CHAPCO® SmoothFinish™ Skim Coat and Leveler

**** NOTE TO SPECIFIER ** Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.**

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 MATERIALS

- A. TEC® PerfectFinish™ Skim Coat Patch or CHAPCO® SmoothFinish™ Skim Coat and Leveler: Technical Data:
 - 1. Compressive Strength: 3,600 psi @ 28 days (Air curing samples) when tested in conformance with ASTM C 109 Modified.
 - 2. Finish flooring installation: 15 - 60 minutes.
 - 3. Water shall be cool, clean and potable.
- B. Primer: TEC Multipurpose Primer or CHAPCO® MP Primer
 - 1. Solvent-free, low VOC

2.3 MIXING

- A. Mix materials in accordance with manufacturer's instructions.
- B. Standard Mix Instructions:
 - 1. Mix only as much as can be used in 15 - 20 minutes. USE IMMEDIATELY after mixing.
 - 2. Slowly add the entire bag of skim coat into 2½ quarts of clean, cool water not over 70 degrees F.
 - 3. Mix at a low speed (not exceeding 300 rpm).
 - 4. Use a mixing ratio of 2 parts powder to 1 part water for smaller amounts.
 - 5. Mix thoroughly to a smooth, lump-free consistency.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Test moisture content of substrates:
 - 1. Per ASTM F 2170, do not install if relative humidity is >95% up to and including 100%, without first applying moisture mitigation vapor barrier.
 - 2. For moisture sensitive floor finishes refer to the finish floor manufacturers specifications for moisture limitations. Remediation of excessive moisture conditions must be done prior to installation of underlayment using moisture mitigation vapor barrier.
- B. Notify the Architect and General Contractor in writing of any unsatisfactory conditions.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - 1. All surfaces shall be structurally sound and free from oil, grease, dust, loose or peeling paint, sealers, floor finishes, curing compounds or any contaminant that would prevent a good bond.
 - 2. Minimum tensile bond strength of 72 psi (0.5 MPa) is required.
 - 3. Substrate temperature shall be a minimum of 43 F during application.
 - 4. Air temperature shall be maintained above 50 F.

3.3 APPLICATION OF UNDERLAYMENT

- A. Immediately after mixing skim coat, with a flat steel trowel, work underlayment into the void to be filled.
- B. Finish to a level surface to achieve desired smoothness.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Do not permit traffic over unprotected floor underlayment surfaces.

END OF SECTION