

SECTION 03540

RECOMMENDED SPECIFICATION COMBIMIX LOW PREP FIBER™ REINFORCED FLOOR LEVELING UNDERLAYMENT

Part 1 - General

1.1 SUMMARY

COMBIMIX LOW PREP FIBER™ is a premium quality, rapid drying, cement-based, pourable or pumpable floor leveling product designed for use over concrete based substrates, including concrete plank, wood, ceramic tile, VCT, vinyl, quarry tile, and radiant heated floors. COMBIMIX LOW PREP FIBER™, with its unique formulation, contains special fibers which provide added reinforcement. Finished floor material may be installed 6 hours after application depending on thickness, drying conditions, and type of flooring material. COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment does not contribute noxious emissions (ammonia) or irritating fumes. Due to the pH of COMBIMIX™ floor leveling products, finished floor material may be installed soon after application without risk of adhesive bond failure.

1.2 SECTION INCLUDES

- A. COMBIMIX LOW PREP FIBER™ Reinforced Floor Leveling Underlayment
- B. COMBIMIX PP600 PRIMER

1.3 QUALITY ASSURANCE

- A. Installation of COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment must be made by an applicator using mixing equipment and tools approved by Combimix.
- B. COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment may be installed from 1/8" to 2" in one pour without aggregate, and up to 20" with the addition of aggregate.
- C. COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment may be applied to a minimum thickness of 1/8" over the highest point in the subfloor, with an average thickness of 1/4".
- D. COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment compressive strength shall exceed 6000 psi after 28 days per ASTM C109 Modified.
- E. COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment should be walkable after 2 hours. Floor covering may be installed after 10 hours at 70° F depending on thickness drying conditions and type of finished floor.

1.4 STORAGE AND HANDLING

- A. Deliver COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment in its unopened package and protect from moisture. Protect primer from freezing.

1.5 SITE CONDITIONS

- A. COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment is a cementitious material. Observe the basic rules of concrete work. Substrate temperature should be a minimum 43°F (6°C) during the application with an ambient temperature maintained between 50-77°F (10-25°C). Adequate ventilation should be provided to ensure uniform drying. Surface bond strength of the substrate should be a minimum 72 psi (0.5 Mpa). Moisture content of substrate should be a RH of 95% or less prior to application of COMBIMIX LOW PREP FIBER™ reinforced floor leveling material. The relative humidity of the concrete substrate should be tested according to ASTM F 2170.

PART 2 – PRODUCT

2.01

- A. The cement-based leveling underlayment shall be COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment.
- B. Primer for standard absorbent concrete shall be COMBIMIX PP600™ Primer diluted with water at a ratio of 1 part primer to 3 parts water.
- C. Primer for high suction substrates shall be COMBIMIX PP600™ Primer diluted with water with at a ratio of one part primer to three parts water.
- D. Primer for wood, linoleum, pvc, ceramic or quarry tile and non-suction substrates shall be COMBIMIX PP600™ Primer diluted with water at a ratio of 1 part primer to 1 part water.
- E. Aggregate shall be well graded, washed and dried pea gravel (1/4" to 1/2" or larger) for use when underlayment is installed over 2" thick.
- F. Water shall be clean, potable and sufficiently cool (not warmer than 75 °F).

2.02 MIX DESIGN

- A. Standard mixing ratio: COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment is mixed in 2-bag batches at a time. COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment should be mixed with 3.5-3.8 quarts (3.2-3.6 L) of water or approximately 18% by weight per 44 lb bag. **Do not over water.** For pourable application, add product to the water and mix for 2-3 minutes with a heavy duty 1/2" drill (650 minimum rpm) to obtain a lump free mix. COMBIMIX LOW PREP FIBER™ can also be used in most pump equipment. Please consult with a COMBIMIX representative to verify equipment compatibility. A slump test should always be performed to ensure that the mix is homogeneous and free from separation.
- B. Aggregate mix: Mix COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment with water first, then add aggregate from 1/3 to 1 part by volume of aggregate (1/4" to 1/2" or larger) making sure that all stone is well coated. Do not use sand.
- C. For pump installation: COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment shall be mixed using PFT mixing equipment or similar equipment. Start the pump at 200 gallons of water per hour and then adjust the water to the minimum water reading that still allows COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment its leveling properties. **DO NOT OVER WATER!** Check the consistency of the product on the floor to ensure a uniform distribution of the aggregate at both the top and bottom of the mix. If separation is occurring, reduce the water amount and perform a slump test to ensure good workability and flow. Conditions during the installation, such as variations in water, powder and temperature, require that the mixing equipment is constantly monitored and accordingly adjusted to ensure a homogenous mix.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Cementitious substrates shall be free from dust, dirt, oil, grease or any contaminants which may inhibit the bond to the surface. Weak or contaminated surfaces must be mechanically cleaned by shot blasting or scarifying.
- B. Non-porous subfloors such as ceramic tile, quarry tile, and wood should be clean and free from all waxes or sealers.
- C. Cutbacks and other non-water soluble adhesive residues shall be tested to determine the surface bond strength of the cutback. Surface bond strength of the substrate should be a minimum 72 psi (0.5 Mpa).
- D. Substrate shall be inspected and corrected for moisture (greater than RH 95%) or any other conditions that could affect the performance of the underlayment or the finished floor covering.

3.2 JOINT PREPARATION

- A. Moving joints – honor all expansion joints and isolation joints through the underlayment.
- B. Saw cuts and Control joints – fill all non-moving joints with COMBIMIX SKIM COAT™.

3.3 PRIMING

- A. Primer for standard absorbent concrete substrate: Mix COMBIMIX™ Primer with water diluted at a ratio of 1 part primer to 3 parts water. COMBIMIX PP600™ Primer can be applied to prepared surfaces by spray, roller, or broom. Avoid puddling and allow primer to become dry to touch (3-5 hours after application with good ventilation). For best results, and while the primer is still fresh, it should be lightly brushed to ensure that a complete, uniform film has been applied. COMBIMIX PP600™ Primer should not be applied to surfaces below 50°F (+10°C). Insufficient drying time or poor film formation due to low temperature and/or high humidity may result in pinholes in the surfacing layer. Maintain adequate ventilation during and after application of primer to help insure quicker drying. Primer coverage is approximately 400 sq.ft per unit at this ratio.
- B. Primer for high suction substrates: Mix COMBIMIX PP600™ Primer with water diluted at a ratio of 1 part primer to 3 parts water. COMBIMIX PP600™ Primer can be applied to prepared surfaces by spray, roller, or broom. Avoid puddling and allow primer to become dry to touch (3-5 hours after application with good ventilation). Highly porous substrates should be primed 2 times, letting the first application dry prior to second application. Primer coverage is approximately 400 sq.ft per unit at this ratio.
- C. Primer for non-suction substrates: Mix COMBIMIX PP600™ Primer with water diluted at a ratio of 1 part primer to 1 part water. COMBIMIX PP600™ Primer can be applied to prepared surfaces by spray, roller, or broom. Avoid puddling and allow primer to dry to touch (3-5 hours after application with good ventilation). Highly porous substrates should be primed 2 times, letting the first application dry prior the to second application. Primer coverage is approximately 200 sq.ft per unit at this ratio.
- D. Primer for wood: Mix COMBIMIX PP600™ Primer with water diluted at a ratio of 5 parts primer to 1 part water. COMBIMIX PP600™ Primer can be applied to prepared surfaces by spray, roller, or broom. Avoid puddling and allow primer to dry to touch (3-5 hours after application with good

ventilation). For best results, and while the primer is still fresh, it should be lightly brushed to ensure a complete, uniform film has been applied. COMBIMIX PP600™ Primer should not be applied to surfaces below 50°F (+10°C). Insufficient drying time or poor film formation due to low temperatures and/or high humidity may result in pinholes in the surfacing layer.

- E. Primer for ceramic tile, quarry tile, epoxy, urethane and vinyl: Mix COMBIMIX PP600™ Primer with water diluted with a ratio of 1 part primer to 1 part water. COMBIMIX PP600™ Primer can be applied to prepared surfaces by spray, roller, or broom. Avoid puddling and allow primer to dry to touch (3-5 hours after application with good ventilation). For best results, and while the primer is still fresh, it should be lightly brushed to ensure a complete, uniform film has been applied. COMBIMIX PP600™ Primer should not be applied to surfaces below 50°F (+10°C). Insufficient drying time or poor film formation due to low temperature and/or high humidity may result in pinholes in the surfacing layer. COMBIMIX™ powder should then be scattered into the wet primer and broomed in to form a light slurry. Allow slurry to dry prior to application of COMBIMIX™ leveling products. Primer coverage is approximately 200 sq.ft per unit at this ratio.

3.4 INSTALLATION

- A. Pour blended material onto the substrate at a thickness of between 1/8" to 2" (2-50mm) for all surfaces except lightweight concrete, where a thickness of 1/4"-3/4" (6-20mm) must be maintained. Perform a slump test and adjust water accordingly until an ideal patty size of 10-11 inches is obtained. Should be mixed until homogeneous, approximately 3 min. Immediately pour and smooth the mixed material while continuously pouring ribbons. Material can be walked on after 1-2 hours.

Protect COMBIMIX LOW PREP™ from excessive heat or draft conditions during the curing process. Turn off all forced ventilation and radiant heating systems. Protect for up to 24 hours after completing installation.

3.05 PREPARATION FOR FLOORING INSTALLATION

- A. Finished floor material may be installed 10 hours after application, depending on thickness, drying conditions and type of finished floor. Due to the pH level of COMBIMIX™ floor leveling products, finished flooring can be applied rapidly without risk of adhesive bond failure. As a general rule, permeable materials such as carpeting may be adhesively or mechanically applied to COMBIMIX™ underlayments when RH level of the substrate (i.e. concrete slab, etc) is 95% or below. Non-permeable items such as PVC can be applied at RH levels of 85% or below. RH levels should be determined according to ASTM standard F2170. Always test performance suitability and compatibility of finished floor systems prior to their application. Sample surfaces should be installed as a field test so as to be representative of entire surface and tested for intended use. Always refer to finished floor manufacturers recommendations regarding installation instructions, allowable moisture restrictions, and other general and specific guidelines.

3.06 FIELD QUALITY CONTROL

Where specified by the architect, sampling of the COMBIMIX LOW PREP FIBER™ reinforced floor leveling underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109 Modified.