DEPENDABLE CHEMICAL COMPANY

Guide Specification for DEPENDABLE SKIMFLOW Lite SECTION 03540

Lightweight, Self-Leveling, Cement-Based Underlayment

Dependable Skimflow Lite is a latex modified, cement-based, lightweight self-leveling underlayment. It is designed to for those applications where the added weight to the structure is a concern. It provides the working time needed for floor leveling and repair applications.

This guide specification is for use by qualified design and construction professional only, and must be edited to meet project requirements. For current product information and technical support, call Dependable at 1-800-227-3434.

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Floor patching and leveling required prior to installation of floor coverings. Scope of repair work [is shown on Drawings.] [includes _____].]
B. Related Documents: Drawings, Conditions of Contract, Division 1 - General Requirements and other Contract Documents affect this Section.
C. Related Sections:
   1. Section [01100 – Alteration Project Procedures] [02070 – Selective Demolition for Remodeling].
   2. Section [09000 – Finishes].

1.02 REFERENCES

A. American Society for Testing and Materials:
   1. ASTM C109 Modified - Compressive Strength of Hydraulic Cement Mortars.
   2. ASTM C348 Modified - Flexural Strength of Hydraulic Cement Mortars.
   3. ASTM C307 - Tensile Strength of Chemical Resistant Mortars, Grouts, and Monolithic Surfacings.
   4. ASTM C266 -Time of Setting of Hydraulic Cement Paste by Gilmore Needle.
   5. ASTM E1155 - Method for Determining Floor Flatness and Levelness Using the “F-Number” System.
   6. ASTM F1869 – Standard Test Method for Measuring the Moisture Vapor Emission Rate of a Concrete Subfloor.

1.03 SUBMITTALS

A. Submit:
   1. Manufacturer’s product data sheets and installation instructions to prove compliance with specified requirements.
   2. [Sample of manufacturer’s limited warranty and warranty application procedures.]

1.04 QUALITY ASSURANCE

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A. Qualifications: Contractor shall be knowledgeable and well trained in the use of floor underlayment material repairs.

B. Field Samples Application: At location on Project selected by [Architect] [Engineer], perform substrate preparation work using methods proposed for Project. Notify Architect/Engineer to allow observation. Install a sample of material using similar techniques that will be used on the project. The sample size shall be ___ft. x ___ft. Accepted sample establishes standard for Work. Complete application when no longer needed for reference.

1.05 DELIVERY, STORAGE AND HANDLING

A. Comply with manufacturer's instructions. Deliver in original, unopened packaging. Store in dry conditions and protect from direct sun exposure, freezing, and extreme heat (greater then 105F.(41C)).

1.06 PROJECT CONDITIONS

A. Environmental Requirements
   1. Hot weather: Comply with ACI 305. Do not apply in extreme heat (greater than 105F(41C.)).
   2. Cold weather: Comply with ACI 306. Do not apply when ambient, surface, or material temperature is below 50F. (10C.).

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Dependable Chemical Company, phone 1-800-227-3434.
B. Substitutions: Comply with [Instructions to Bidders] [_____] for substitution request procedures.

2.02 MATERIALS

A. Primer, for all surfaces, shall be Dependable Primer SL.
B. Water shall be clean, cool, and potable.
C. Factory blended, latex modified, premixed, lightweight cement-based self-leveling underlayment. Available products, subject to compliance with requirements, are limited to the following:
   1. a. Skimflow Lite
   2. Technical Data
      All data is based on 35 lbs. powder to 5.5 quarts water.

a.	Compressive Strength (ASTM C109): Modified	4,100 psi (29 MPa) @ 28 days (F-1)
b.	Flexural Strength (ASTM C348) Modified:	800 psi (5.5 Mpa) @ 28 days. (F-1)
c.	Density, Wet:	90 lbs. / c.f.
	Density, Dry:	81 lbs. / c.f.
d.	Working Time:	20 – 30 minutes. (F-2)
e.	Set Time, Final (ASTM C266):	3 hours
f.	Ready for Covering:	24 hours (at minimum thickness). (F-2)

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2.03 EQUIPMENT

A. Pumps: Comply with manufacturer's instructions.
B. Mixing devices: When mixing by drill and paddle method
    1. The drill should be at least ½" in size and capable of generating 150 – 450 RPM.
    2. The paddle may be an epoxy mixer (egg beater / cage), jiffy mixer, rectangular speedy mixer, or other type designed not to entrain or entrap air.

PART 3 EXECUTION

3.01 PREPARATION

A. All substrates, regardless of type, must be solid, sound, clean, and primed.
    1. Concrete substrates: All concrete substrates must be sound, clean, and free of dirt, dust, grease, curing compounds, or any other material which might prevent adhesion. Application over textured surfaces will achieve the best bond. Concrete should be mechanically prepared (ie. Bead blast, scarified, etc.). The material is susceptible to chemical reactions in the presence of metal particles, metal oxides, or gypsum materials, therefore these materials must be thoroughly cleaned from the floor. Acid etching is not acceptable.
    2. Wooden substrates: All wooden substrates must be sound, clean and free of dirt, oils, or any other material which may prevent adhesion. The installation of metal lathe is recommended for reinforcement to provide increased flexural strength. Consult technical assistance.
    3. Adhesive residue: Using mechanical means, remove adhesive and provide proper substrate profile. Make sure that proper removal and disposal procedures are used when dealing with asbestos containing adhesive.
    4. Existing tile: Existing ceramic tile, quarry tile, etc. must be well bonded. It must also be clean and free of waxes or any other material that might prevent adhesion. Glazed or extremely smooth tile may require abrading the surface by mechanical means in order to achieve a proper bond.

B. The substrate shall be watertight. Any holes, cracks, etc. shall be repaired prior to priming. Patching should be done with a like material, such as Skimcrete XL.
C. The substrate shall be checked for moisture. Hydrostatic pressure or excessive moisture must be corrected. Consult technical assistance.

3.02 PRIMING

A. Prime all surfaces with Primer SL. Use a long-handled roller, soft bristle broom, or paint brush to apply Primer SL. Do not dilute. Apply evenly across the surface, removing any puddles or excess primer. Coverage rates may vary depending upon the substrate and its porosity. Very porous substrates may require two coats.
B. Do not apply Skimflow Lite until the Primer SL is dry (about 1 hour @ 70F.(21C) and 50% relative humidity). Apply the Skimflow Lite the same day as the primer.

3.03 INSTALLATION

A. Mixing
    1. Use a clean mix container. Pour in proper amount of clean, cool water and add the powder slowly. If the mixing device does not produce a lump free mix, try using 2/3 of the water, adding all the powder until wet, and then add the remaining water.
    2. Water / powder ratio is 5.5 quarts (5.2 liters) of water to 35 pounds (15.75 kg) of powder.
    3. Mix material in a drum with a slow mixer at 150 – 450 RPM using a paddle or similar tool designed to avoid air entrapment. Mix for at least 2 minutes, but not more than 3 minutes to a

homogeneous lump free consistency. Larger quantities may be mixed in a mortar mixer. Carefully add materials to the mixer being careful to avoid spillage. Do not overwater.

a.) Pumps may be used to place Skimflow Lite. Follow the instructions provided by the pump manufacturer, be careful to ensure proper mixing prior to placement. Please contact technical services for recommendations on pump equipment.

4. To apply in thickness greater than 1-1/2"(38.1mm), aggregate may be added to the mix. Add no more than 25 lbs. (11.25 kg) of aggregate per 35 lb. (15.75 kg) bag. This mix is less flowable and may require further working. A subsequent neat layer may be needed to level and smooth the surface. Follow instructions for bonding additional layers (Section 3.03.A.6).
   a.) When adding aggregate to the mix, mix Skimflow Lite as normal (as described in Step 3) and then slowly add aggregate to the mix. Mix thoroughly, making sure that the aggregate is completely coated.
5. Pump or pour material on to the substrate. Do not re-temper or add water. Skimflow Lite is highly flowable for at least 20 minutes (@ 70 F. (21C.)). The material can be moved with a screed set to an appropriate depth. Pumping should be continuous, being careful not to create any cold joints. Wear spiked shoes while working in the wet material to avoid leaving marks. If a fine edge is desired, the edge should be steel troweled after initial set, but before it is completely hard. Once the Skimflow Lite starts to set, stay off the floor until it has reached final set (approximately 3 hours @ 70 F. (21 C.)). (F-2)
6. If the underlayment is to be placed in layers, allow the initial layer to harden, to the point where the material has lost its evaporative moisture. Next, prime and begin the subsequent application. The subsequent layer should be applied within 24 hours.
7. The underlayment can receive floor covering when the product has lost its evaporative moisture, in about 24 hours at the minimum thickness at 70 F.(21C.).
8. Direct sunlight, heat, and wind can cause rapid drying of the product which can lead to shrinkage and cracking. To avoid rapid drying, provide protection against these elements.

3.04 PRECAUTIONS AND LIMITATIONS

A. Do not use over particle board, presswood, masonite, chipboard, Luaun, or similar dimensionally unstable materials, or any substrate not well bonded or free of movement.
B. Do not use over metal, lightweight concrete, gypsum floor patches and materials, or petroleum or solvent residue or spills, or other contaminants.
C. Do not use where surface or air temperature falls below 50 F. (10 C.) within 72 hours before or after installation or when finished floor is subject to freeze within 7 days.

F-1 The modification for ASTM C109 and ASTM C348 consists of air curing the samples versus the standard's procedures of placement in a lime bath for 28 days. All other procedures are followed.
F-2 When timing is referenced, tests were conducted at 70 F. (21 C.) with a relative humidity of 50 – 60%.

END OF SECTION