

ARDEX GUIDE SPECIFICATION
ARDEX SD-M™ Micro-Topping Designer Floor Finish™

SECTION 03 01 30
Trowelable Concrete Micro-Topping

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, general provisions of the Contract, and other related construction documents such as Division 01, and Division 09 specifications apply to this Section

1.2 SUMMARY

- A. This Section includes a self-drying, Portland cement-based, trowelable topping for fast-track finishing or resurfacing of interior concrete.
1. ARDEX SD-M™ Designer Floor Finish™
 2. ARDEX EP 2000™ Substrate Preparation Epoxy Primer
 3. ARDEX P 51™ Primer
 4. ARDEX ARDIFIX™ Two-Part, Low Viscosity Rigid Polyurethane Crack & Joint Repair
 5. ARDEX ARDISEAL™ RAPID PLUS Semi-Rigid Joint Sealant
 6. ARDEX MC™ RAPID Moisture control
 7. ARDEX R 54 Sealer System
- B. Related Sections include the following:
1. Section 03 30 00, Cast-In-Place Concrete
 2. Section 09 05 61.13 Moisture Vapor Emission Control
 3. Division 09 Flooring Sections

SECTION 03 01 30 - 1
Trowelable Concrete Topping

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1.3 REFERENCES

- A. ASTM C109M, Compressive Strength Air-Cure Only
- B. ASTM C348, Flexural Strength of Hydraulic-Cement Mortars
- C. ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- D. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.
- B. Qualification Data: For Installer

1.5 QUALITY ASSURANCE

- A. Installation of the ARDEX product must be completed by a factory-trained applicator, such as an ARDEX LevelMaster® Elite or Choice Contractor, using mixing equipment and tools approved by the manufacturer. Please contact ARDEX Americas (724) 203-5000 for a list of recommended installers.
- B. Product must have a hydraulic cement-based inorganic binder as the primary cement binder to include Portland cement per ASTM C150: Standard Specification for Portland Cement and other specialty hydraulic cements. Gypsum-based products are not acceptable.
- C. Manufacturer Experience: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 5 years. Contact Manufacturer Representative prior to installation.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and 29°C and protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.

1.7 PROJECT CONDITIONS

SECTION 03 01 30 - 1
Trowelable Concrete Topping

MODIFIED 05/2023
ARDEX AMERICAS

- A. Do not install material below 50°F (10°C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX Technical Service Department.

PART 2 - PRODUCTS

2.1 MAINTENANCE OF TROWELABLE CONCRETE TOPPING

- A. Self-drying, trowelable topping for fast-track finishing or resurfacing of interior concrete, terrazzo and ceramic, quarry, and porcelain tile.
1. Acceptable Products: ARDEX SD-M™; Manufactured by ARDEX Americas, USA, 724-203-5000, www.ardexamericas.com
 - i. Primer, Standard Porous Concrete where aesthetics is NOT critical: Primer not required.
 - ii. Primer, Highly Porous or Absorbent Concrete where aesthetics is NOT critical: ARDEX P 51™, Manufactured by ARDEX Americas, USA, 724-203-5000, www.ardexamericas.com
 - iii. Primer, Non-absorbent Substrates, and areas where aesthetics is critical: ARDEX EP 2000™, Manufactured by ARDEX Americas, USA, 724-203-5000, www.ardexamericas.com
 2. Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F+/-3°F (21° C+/-3°C) and 50% +/-5% relative humidity:
 - a. Application: Trowel
 - b. Initial Set (ASTM C191): Approx. 45 minutes
 - c. Final Set (ASTM C191): Approx. 90 minutes
 - d. Compressive Strength (ASTM C109M): 5,000 psi (352 kg/cm²) at 28 days
 - e. Flexural Strength (ASTM C348): 1,200 psi (84 kg/cm²) at 28 days
 - f. Colors Available: Gray and White

2.2 WATER: Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

2.3 SEALER: ARDEX R54 System including R54AP Primer and R54 Sealer in Matte or Gloss finish, or as specified by Architect.

2.4 CRACK AND JOINT REPAIR

1. Low Viscosity Rigid Polyurethane Crack and Joint Repair; ARDEX ARDIFIX™; Manufactured by ARDEX Americas; USA; 724-203-5000, www.ardexamericas.com
2. Semi-Rigid Joint Sealant; ARDEX ARDISEAL™ Rapid Plus Semi-Rigid Joint Sealant; Manufactured by ARDEX Americas; USA; 724-203-5000, www.ardexamericas.com

PART 3 – EXECUTION

3.1 PREPARATION

- A. Concrete Subfloors: Prepare substrate in accordance with manufacturer's instructions.
1. Prior to proceeding, please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically clean if necessary, using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.
 2. Non-Absorbent substrates, such as ceramic and stone tiles, must be mechanically abraded to create a bonding surface.
- B. Substrates shall be inspected in accordance with ASTM F2170 and corrected for moisture or any other conditions that could affect the performance of the topping or sealer. For areas where moisture vapor emissions exceed the limits required by the sealer manufacturer refer to Section 09 05 61.13 Moisture Vapor Emission Control and install the appropriate ARDEX Moisture Control System such as ARDEX MC™ Rapid or call ARDEX Technical Services for product recommendations. ARDEX SD-M™ is intended for use over dry substrates only. Do not use in areas of constant water exposure, or in areas exposed to permanent or intermittent substrate moisture, as this may jeopardize the performance of the topping and coating. This product is not a vapor barrier and will allow free passage of moisture.
- C. Crack and Joint Preparation
1. All Joints and Moving Cracks – All joints, including saw cuts (dormant control joints), expansion joints, isolation joints as well as all moving cracks must be honored up through the above-referenced ARDEX products by installing a fully flexible compound specifically designed for this.
 2. Dormant Cracks - All dormant cracks must be pre-filled with ARDEX ARDIFIX™ in strict accordance with the installation instructions provided by the ARDEX Technical Department. Once the dormant cracks have been properly filled, broadcast sand to refusal, and allow these areas to cure thoroughly. Remove all excess sand prior to proceeding with the ARDEX MC™ RAPID installation.
 3. All joints, including control joints, expansion joints and isolation joints, and moving cracks must be honored up through the ARDEX MC RAPID, the ARDEX Topping and the sealer by installing a fully flexible sealing compound designed specifically for this use, such as ARDEX ARDISEAL RAPID PLUS.

3.2 APPLICATION OF ARDEX SD-M™:

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.
- C. Priming
 - 1. For standard absorbent concrete: No primer is required. Note: For highly porous or absorbent surfaces prime with ARDEX P 51™ Primer diluted with 3 parts water and apply evenly in accordance with the technical data sheet.
 - 2. For non-absorbent substrates such as terrazzo, ceramic and stone tiles, and other areas where aesthetics is critical: Prime with ARDEX EP 2000™ that has been sand broadcasted to refusal in accordance with the technical data sheet
- D. Mixing: Comply with manufacturer's printed instructions and the following.
 - 1. Mix one 10 lb. (4.5 kg) bag of ARDEX SD-M, use 2 quarts (1.9 L) of water.
 - 2. For filling pop-outs and spalls up to 2" (5 cm) in diameter and 1/2" (12 mm) deep, use 3.5 parts by volume of powder to 1 part of water.
- E. Application: Comply with manufacturer's printed instructions and the following.
 - 1. Apply a scratch coat of the mix to the substrate with the flat side of a steel trowel to obtain a solid mechanical bond. Apply sufficient pressure to fill all defects and to feather the product into the subfloor surface. The scratch coat or base coat should be applied to pre-smooth and achieve a uniformly absorbent surface.
 - 2. It is necessary to have a minimum of two coats of ARDEX SD-M™ with the total finished thickness of 20 mils (500 microns, about the thickness of a standard business card). Use the least amount possible to attain the desired smoothness. The finish coat may be applied as soon as the trowel will not damage the base coat. A third application of ARDEX SD-M™ is optional depending on the desired finish and texture. This application is used primarily to achieve a very smooth troweled finish. Total thickness should not exceed 1/16" (1.5mm).
- F. Sealing
 - 1. Dry time prior to burnish-polishing or sealer application varies by sealer type and thickness of application. Follow ARDEX recommendation for dry time prior to the installation of the sealer.
 - 2. Install ARDEX R54 Sealer System per manufacturers written instructions.

3.3 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the ARDEX products 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: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

3.4 PROTECTION

- A. ARDEX SD-M™ wear surfaces should be adequately protected from damage resulting from construction traffic or other use that can affect the finished floor.

- B. ARDEX SD-M™ wear surfaces are intended for foot traffic, moderate, rubber-wheeled forklift traffic, and similar uses. Excessive service conditions, such as steel or hard plastic-wheeled traffic, or dragging heavy metal equipment or loaded pallets with protruding nails over the floor, will cause gouging and indentations. ARDEX SD- M™ is not a resurfacing topping for heavy-duty manufacturing or industrial floors, or for chemical environments requiring customized industrial toppings.

3.5 MAINTENANCE

- A. Once installed, any finished floor surface requires routine cleaning and maintenance. After installing the initial coats of the sealer, the best way to ensure the long-term appearance of a newly installed floor is using a sacrificial floor finish (“wax” or “polish”) applied over the surface of the newly installed and sealed floor. All floor coatings will wear as a function of traffic and maintenance, and the use of a sacrificial coating avoids wear on the original sealer while providing a simple maintenance solution.

END OF SECTION