# ARDEX SD-M™

## Designer Floor Finish™

**Use over concrete, terrazzo and ceramic, quarry and porcelain tile**

**Provides a smooth, permanent, durable finish**

**Easy to mix and apply**

**Mixes with water only, no additives necessary**

**Outstanding coverage with excellent bond**

**Mold and mildew resistant**

**Portland cement-based**

**Use for interior floors only**

**Can be used to create a burnish-polished surface on indoor concrete**

**Can be used as pinhole filler for polished concrete and ARDEX Polished Concrete Systems (APCS) applications**

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# ARDEX SD-M™
# Designer Floor Finish™

## Description

ARDEX SD-M™ is a self-drying, trowelable topping for fast-track finishing or resurfacing of interior concrete, terrazzo and ceramic, quarry and porcelain tile. A blend of Portland cement and other hydraulic cements, ARDEX SD-M can be used to provide a hard, flat, smooth surface for warehouses, utility rooms and light manufacturing. ARDEX SD-M is an ideal concrete topping for retail, hospitality and office buildings to create ARDEX DESIGNER FLOORS™. ARDEX SD-M can also be used for creating a burnish-polished surface on indoor concrete.

ARDEX SD-M can be installed at a minimum thickness of only 20 mils (500 microns / 0.02"), minimizing height transition issues, and must be sealed with an appropriate film forming sealer or be burnish-polished in as little as 24 - 72 hours.

## Substrate Preparation and Priming

All substrates must be solid, thoroughly clean and free of oil, wax, grease, asphalt, latex and gypsum compounds, curing compounds, sealers and any contaminant that might act as a bond breaker. If necessary, mechanically clean the floor down to sound, solid concrete by shot blasting, grinding or similar. Over-watered, frozen or otherwise weak concrete surfaces must also be cleaned down to sound, solid concrete by mechanical methods. Acid etching, adhesive removers, solvents and sweeping compounds are not acceptable means for cleaning the substrate. Sanding equipment is not an effective method to remove curing and sealing compounds. Concrete substrates must be prepared to the point of absorbency via mechanical means.

Substrate and ambient temperatures must be a minimum of 50°F (10°C) for the installation of ARDEX products. For further information, please refer to the ARDEX Substrate Preparation Technical Data Sheet.

Please note that when removing existing flooring, any asbestos-containing materials should be handled and disposed of in accordance with applicable federal, state and local regulations.

## For Aesthetically Critical Applications

As an alternative to not priming or priming with ARDEX P 51™ Primer, ARDEX EP 2000™ Substrate Preparation Epoxy Primer should be considered for porous concrete substrates in retail, hospitality and other areas where aesthetics are critical. ARDEX EP 2000 is a highly reactive epoxy that bonds tenaciously to the substrate to minimize cracking in ARDEX toppings. Follow the general recommendations for substrate preparation above, and apply the ARDEX EP 2000 with sand broadcast, carefully following the instructions given in the ARDEX EP 2000 technical data sheet.

For non-porous substrates, apply ARDEX EP 2000 with sand broadcast, carefully following the instructions given in the technical data sheet.

## For Other Areas

For porous concrete substrates, no primer is required. However, highly porous or absorbent concrete can cause pinholes to develop. In this case, use ARDEX P 51 diluted with 3 parts water. Apply evenly with a soft push broom. Do not use paint rollers, mops or spray equipment. Do not leave any bare spots. Brush off puddles and excess primer. Allow primer to dry to a clear, thin film (min. 3 hours, max. 24 hours). Applying ARDEX P 51 will also help to increase the working time for ARDEX SD-M.

For non-porous substrates, apply ARDEX EP 2000 with sand broadcast, carefully following the instructions given in the technical data sheet.

## Joints and Cracks

## Moving Joints and Cracks

Under no circumstances should ARDEX SD-M be installed over any joints or any moving cracks. All existing expansion joints, isolation joints, construction joints and control joints (saw-cuts), as well as any moving cracks, must be honored up through the topping by installing a flexible sealing compound specifically designed for use in moving joints, such as ARDEX ARDISEAL™ RAPID PLUS. Failure to do so may result in cracking and/or disbonding of the topping. Even the slightest amount of movement in a control joint will cause the ARDEX SD-M to show a hairline crack in a pattern reflective of the joint.

ARDEX cannot be responsible for problems that arise from joints, existing cracks or new cracks that may develop after the system has been installed.

## Dormant Cracks

Before proceeding with the installation, all dormant cracks greater than 1/32" (0.7 mm) wide must be prefilled with a fully rigid, high-modulus, 100% solids material, such as ARDEX ARDIFIX™. Please note that the repair material must be sand broadcast to refusal while still fresh and allowed to cure fully prior to removing all excess sand.

The filling of dormant cracks as described above is recommended to help prevent the cracks from showing through the topping. However, should movement occur, cracks will reappear.

## Reflective Cracking

ARDEX SD-M is formulated as a highly durable, nonstructural wear surface. As such, it is important to note that no one can predict with 100% accuracy the appearance of cracking in a non-structural topping. While there can be several causes for cracking, it must first be understood that the installation of thin layers of non-structural toppings are not capable of restraining movement in the structural slab, which could lead to reflective cracking. Areas most likely to telegraph include those with deflection of a concrete slab, vibration of a concrete slab in metropolitan areas due to truck traffic and subways, high rise buildings that sway or "rack" in the wind, existing cracks in the floor, control joints or saw-cuts, expansion joints and small cracks off the corners of metal inserts, such as electrical boxes or vents in the floor. While priming with ARDEX EP 2000 is the best way to minimize the possibility of reflective cracking, cracks may telegraph up into the surface in any area that exhibits movement. We know of no method to prevent this telegraphing from occurring.

## Recommended Tools

ARDEX T-2 Ring Mixing Paddle, mixing bucket, margin trowel, steel trowel and a 1/2" heavy-duty drill (12 mm, min. 650 rpm)

## Mixing and Application

For one 10 lb (4.5 kg) bag of ARDEX SD-M, use 2 quarts (1.9 liters) of clean water. Pour the water in the mixing container first, and then add the ARDEX SD-M. For best results, mix with an ARDEX T-2 Ring Mixing Paddle and a 1/2" heavy-duty drill (12 mm, min 650 rpm). Mechanical mixing will produce a creamier, smoother consistency without the need for additional water. **DO NOT OVERWATER!** Additional water will weaken the compound and lower its strength. To mix smaller quantities by hand, use 2.5 parts powder to 1 part water by volume for the scratch and finish coat. For filling pop-outs and spalls up to 2" (5 cm) in diameter and 1/2" (12 mm) deep, use 3.5 parts powder to 1 part water by volume. Use a margin trowel and mix vigorously for 2 - 3 minutes. Just prior to application on the substrate, the mixture should be stirred again to ensure a creamy, smooth, lump-free consistency. The pot life of ARDEX SD-M is approximately 30 - 40 minutes at 70°F (21°C). If surface skinning occurs within this time, remix before using. Do not add more water.

After mixing, 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 onto the subfloor surface. It is necessary to have a minimum of two coats of ARDEX SD-M with a total finished thickness of approximately 20 mils (500 microns, about the thickness of a standard business card). Use the least amount possible to attain the desired smoothness. The scratch coat, or base coat, should be applied to pre-smooth the surface, and 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" (1.5 mm). ARDEX SD-M must be sealed with an appropriate film forming sealer or be burnish-polished in as little as 24 - 72 hours.

## Use as Pinhole Filler for Polished Concrete and APCS Applications

ARDEX SD-M is suitable to fill pinholes on ARDEX PC-T. After metal, transition and inital resin processing is complete, sweep and vacuum the surface of the ARDEX PC-T. This exposes sand aggregate and may reveal surface voids or "pinholes." Mix ARDEX SD-M in small batch ratios of 2.5 parts powder to 1 part water, and apply with a metal trowel. The ARDEX SD-M needs to be pulled tightly to the floor, filling the surface voids but leaving no more than an ultra-thin or haze coat of material on the entire surface of the ARDEX PC-T (A thicker coat of ARDEX SD-M may be difficult to remove later in the process). Use multiple "swipes" with the trowel to apply the material thoroughly.

Once the ARDEX SD-M hardens sufficiently (typically 2 - 3 hours, 70°F/21°C), process the ARDEX PC-T with transitional ceramic tooling. The ultra-thin layer of ARDEX SD-M should be able to be "cut" from the surface with normal resistance. The finished area should reveal areas of 100% fill, but may reveal other areas that would require a second application. If needed, proceed with a second application of ARDEX SD-M as described above.

Typically, two applications of ARDEX SD-M are required for this process. However, it is up to the installer to apply as many applications of ARDEX SD-M as are needed to achieve a satisfactory end result. Allow the ARDEX SD-M to harden sufficiently between coats. Allow the final coat of ARDEX SD-M to harden sufficiently prior to proceeding with the next process step. As ARDEX SD-M Gray and White are slightly different shades than ARDEX PC-T Gray and White, ARDEX SD-M Gray and White may be blended for color matching.

## Burnish-Polishing and Maintenance

For instructions regarding the polishing, treatment and sealing of your polished concrete floor, please contact the ARDEX Technical Department for details as part of the ARDEX Polished Concrete Systems (APCS).

Allow ARDEX SD-M to cure 24 - 72 hours prior to burnish-polishing. While burnish-polishing, it is recommended that a NIOSH-approved dust mask and safety goggles be worn.

Drying time is a function of jobsite temperature and humidity conditions, as well as the installation thickness. Low substrate temperatures and/or high ambient humidity will extend the drying time needed before processing the surface. Adequate ventilation and heat will aid drying.

Once installed, any finished floor surface requires routine cleaning and maintenance. Adherence to a regular cleaning and maintenance schedule will help the floor hold its gloss longer and greatly reduce its absorbency. The treated concrete floor can easily be maintained by following the procedures detailed at the APCS Ongoing Maintenance link on the ARDEX SD-M product page at www.ardexamericas.com.

## Non-Burnish-Polishing Applications and Maintenance

For applications that will not be burnish-polished, the surface of ARDEX SD-M must always be protected from oil, salt, water and surface wear by applying a suitable protection system, such as concrete sealer or paint. ARDEX recommends the use of ARDEX CG CONCRETE GUARD™ to seal ARDEX SD-M that will be exposed to normal foot traffic. Sealing with ARDEX CG can proceed as soon as the surface of the ARDEX SD-M hardens sufficiently to work on without damaging it (approx. 2 - 3 hours under standard conditions of 70˚F / 21˚C and 50% RH). Low ambient temperatures and/or high humidity can extend this time. The floor can be open to traffic as soon as the ARDEX CG has dried to ARDEX recommendations. For installation instructions for ARDEX CG, please refer to the technical data sheet.

For areas to receive heavier traffic, as well as areas such as restaurants and food courts, sealing should be done using an appropriate wear protection coating. As the performance of coating systems varies greatly, the installer is responsible for assessing the suitability of these coatings. If a waterborne sealer is to be applied at a thickness not-to-exceed a total of 20 mils, the coating can be applied as soon as the surface of the ARDEX SD-M is hard (2 - 3 hours at 70˚F / 21˚C). When using a solvent-borne or 100% solids coating applied at a total thickness of 20 mils or less, the ARDEX SD-M must cure for a minimum of 24 hours at 70˚F (21˚C). When the total application thickness will exceed 20 mils, the ARDEX SD-M must cure 3 - 5 days at 70˚F prior to installing the protection layer.

Once installed, any finished floor surface requires routine cleaning and maintenance. After installing the initial coats of sealer, the best way to ensure the long-term appearance of a newly installed floor is by the use of a sacrifical floor finish ("wax" or "polish") applied over the surface of the newly installed and sealed floor. This sacrificial coating avoids wear on the original sealer while providing a simple maintenance solution.

## Wear Surface

ARDEX SD-M wear surfaces are intended for foot and moderate, rubber-wheeled forklift traffic and similar uses. Excessive service conditions, such as steel- or hard plastic-wheeled traffic, or the dragging of 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, industrial floors or for chemical environments requiring customized industrial toppings. As with any floor covering (wood, soft natural stone, marble, etc.), allowances must be made for scratches or abrasion that occur due to moving or sliding furniture or fixtures over the surface. Keeping the floor surface clean and free of dirt or other contaminants also will help to minimize scratching and abrasion due to foot traffic.

## Notes

FOR PROFESSIONAL USE ONLY.

This product is intended for interior 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 sealer. This product is not a vapor barrier and will allow free passage of moisture. **Follow the directives of the sealer manufacturer regarding the maximum allowable substrate moisture content, and, prior to installing ARDEX SD-M, test the substrate using the relative humidity method in accordance with ASTM F2170.** If substrate moisture exceeds the maximum permitted or is greater than 85% RH, install an ARDEX MC™ Moisture Control System. For further information, please refer to the appropriate ARDEX technical data sheet.

Always install an adequate number of properly located test areas, including the processing and wear protection system, to determine the suitability and aesthetic value of the products for the intended use.

Low substrate temperatures and/or high ambient humidity require longer drying times for ARDEX primers. Do not install ARDEX SD-M before any primers used have dried thoroughly.

Never mix with cement or additives. Observe the basic rules of concrete work. Do not install below 50°F (10°C) surface and air temperatures. Install quickly if the substrate is warm, and follow the warm weather instructions available from the ARDEX Technical Service Department.

To preserve its freshness, ARDEX SD-M must be protected from air while not in use. Protect unused material by removing the air from the bag and sealing tightly. Open and reseal as necessary.

Store at temperatures between 40 and 90°F (5 - 32°C). Do not freeze.

Dispose of packaging and residue in accordance with federal, state and local waste disposal regulations. Do not flush material down drains.

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## Precautions

Carefully read and follow all precautions and warnings on the product label. For complete safety information, please refer to the Safety Data Sheet (SDS) available at www.ardexamericas.com.

**Technical Data According to ARDEX Quality Standards**

All data based on a mixing ratio of 2.5 parts powder to 1 part water by volume at 70°F (21°C). Physical properties are typical values and not specifications.

| | |
|---|---|
| **Mixing Ratio:** | 2 quarts (1.9 L) of water to one 10 lb. (4.5 kg) bag<br>For smaller batches, use 2.5 parts powder to 1 part water by volume for the scratch and finish coat,<br>or 3.5 parts powder to 1 part water for filling pop-outs and spalls. |
| **Coverage:** | 80 - 100 sq. ft. (7.4 - 9.3 sq. m) per bag in 2 coats (Actual coverage may vary) |
| **Initial Set (ASTM C191):** | Approx. 45 minutes |
| **Final Set (ASTM C191):** | Approx. 90 minutes |
| **Compressive Strength (ASTM C109/mod - Air Cure Only):** | 5,000 psi (352 kg/cm$^2$) at 28 days |
| **Flexural Strength (ASTM C348):** | 1,200 psi (84 kg/cm$^2$) at 28 days |
| **Walkable:** | 2 hours |
| **Begin Processing:** | 24 - 72 hours |
| **Colors Available:** | Gray and White |
| **Packaging:** | 10 lb. (4.5 kg) bag |
| **Storage:** | Store in a cool, dry area. Do not leave bags exposed to sun. Protect unused material by removing air from bag and sealing tightly. |
| **VOC:** | 0 |
| **Shelf Life:** | 6 months, if unopened |
| **Warranty:** | ARDEX Engineered Cements Standard Limited Warranty applies. |

## IMPORTANT TECHNICAL UPDATES

**Technical update effective December 1, 2016:**
Installation Environments for ARDEX Polished Concrete Systems (APCS)

CLICK HERE

Content updated 04-20-2020. Published 04-21-2020. Supersedes all previous versions. Check www.ardexamericas.com for most recent version and for technical updates, which may supersede the information herein.

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