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# ARDEX SD-T<sup>®</sup>

## Self-Drying, Self-Leveling Concrete Topping

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Portland cement-based

Smooth new or existing concrete and certain non-porous surfaces

Install from 1/4" up to 2" neat, and up to 5" with aggregate

Walk on and seal in as little as 2 hours

For commercial, light industrial and residential applications

Especially suited for ARDEX DESIGNER FLOORS™

Available in white and gray

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# ARDEX SD-T®

## Self-Drying, Self-Leveling Concrete Topping

### Description and Usage

ARDEX SD-T® is a self-drying, self-leveling, no troweling, Portland cement-based topping for fast track resurfacing, smoothing or leveling of indoor concrete and certain non-porous surfaces. Installs from 1/4" to 2" in one operation, and up to 5" with the addition of aggregate. ARDEX SD-T® hardens fast due to its unique self-drying formulation – it can be sealed in as little as 2 hours depending on the sealer type (see below), and opened to traffic as soon as the sealer has fully dried. Use ARDEX SD-T to provide a hard, flat, smooth surface for warehouses, utility rooms and light manufacturing. ARDEX SD-T® can also be installed to create ARDEX DESIGNER FLOORS™ in areas such as retail stores, television studios and all interiors requiring such a surface.

### Substrate Preparation

All concrete substrates must be solid, thoroughly clean and free of oil, wax, grease, asphalt, latex and gypsum compounds, curing and sealing compounds, and any other contaminant that might act as a bond breaker. If necessary, mechanically clean the substrate down to sound, solid concrete by shot blasting, scarifying or similar. Overwatered, 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. Substrates must be dry and properly primed for a successful installation. 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 Brochure.

### Recommended Tools

ARDEX T-1 Mixing Paddle, ARDEX T-10 Mixing Drum, ARDEX T-4 Spreader, ARDEX T-5 Smoother, ARDEX MB-5.0 Measuring Bucket (5 quarts [4.7 L] per 50 lb [22.7 kg] bag), and a 1/2" heavy-duty drill (12 mm - min. 650 rpm).

### Priming

ARDEX DESIGNER FLOORS over concrete - as well as retail, hospitality and other areas where aesthetics are critical - and non-absorbent substrates such as terrazzo, ceramic and stone tiles require priming with ARDEX EP 2000™ SUBSTRATE PREPARATION EPOXY. 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 Brochure.

Standard absorbent concrete for "non-designer" installations (using ARDEX SD-T® as a warehouse floor or in a mechanical room where aesthetics are not critical) requires two applications of ARDEX P 51™ PRIMER to avoid the formation of bubbles and pinholes in the finished ARDEX SD-T®. In such

cases, make an initial application of ARDEX P 51 diluted with 3 parts water by volume. 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 to dry thoroughly (1 to 3 hours) to a clear, thin film, and then follow with a second application of ARDEX P 51 mixed 1:1 with water using the same method. Brush off puddles and excess primer. Allow the primer to dry to a clear, thin film (min. 3 hours, max. 24 hours). It is essential to ensure that both layers of primer dry completely before proceeding with the installation of ARDEX SD-T®.

### Moving Joints and Cracks

Under no circumstances should ARDEX SD-T® be installed over any moving joints or 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. 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-T® to show a hairline crack in a pattern reflective of the joint.

### Mixing And Application – Manually

ARDEX SD-T® is mixed 2 bags at a time. Mix each 50 lb (22.7 kg) bag with 5 quarts (4.75 liters) of water. Pour the water in the mixing drum first, then add each bag of ARDEX SD-T® while mixing with an ARDEX T-1 Paddle and a 1/2" heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 2 to 3 minutes to obtain a lump-free mix. **Do not overwater!** Yellowish foam while mixing, or settling of the sand aggregate while placing, indicates overwatering.

ARDEX SD-T® has a flow time of 10 minutes at 70°F (21°C). Pour the mix on the floor and spread with the ARDEX T-4 Spreader. Immediately smooth the material with the ARDEX T-5 Smoother. Wear baseball or soccer shoes with non-metallic cleats to avoid leaving marks in the liquid ARDEX SD-T®.

As ARDEX SD-T uses several naturally occurring and mined raw materials, shade and/or color variations are to be expected. Therefore, for projects where more than one pallet of product will be used, it is strongly recommended that bags be blended and mixed together from multiple pallets during the installation process. This procedure will help minimize the effects of shading and color variation. For specific directions, please call the ARDEX Technical Service Department.

### Mixing And Application – Pumping

ARDEX SD-T may also be pumped using ARDEX ARDIFLO™ Automatic Mixing Pumps. However, please contact the ARDEX Technical Service Department for details.

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## Thickness of Application

ARDEX SD-T® can be installed from 1/4" (6 mm) up to 2" (5 cm) over large areas in one pour, and up to 5" with the addition of proper aggregate.

For areas thicker than 2" (5 cm), mix ARDEX SD-T® with washed and well-graded 1/8" to 1/4" pea gravel. Mix ARDEX SD-T® with water first, and then add 1 part aggregate by volume, mixing until the aggregate is completely coated. Do not use sand. If the aggregate is wet, reduce the amount of water to avoid overwatering.

The addition of aggregate will diminish the workability of the product and may make it necessary to install a finish coat to obtain a smooth surface. Allow the initial application to dry for 12 to 16 hours. For ARDEX DESIGNER FLOOR applications, the aggregate course must be primed with ARDEX EP 2000. Please note that for ARDEX DESIGNER FLOOR installations requiring an aggregate course over standard absorbent concrete, only the finish layer requires the use of ARDEX EP 2000. For warehouse and similar applications previously described, the aggregate course must then be primed using the "double-prime" method with ARDEX P 51.

## Wear Surface

The surface of ARDEX SD-T® must always be protected from oil, salt, water and surface wear by applying a suitable protection system, such as a concrete sealer or paint. ARDEX recommends the use of ARDEX CG™ CONCRETE GUARD™ to seal ARDEX SD-T that will be exposed to normal foot traffic. Sealing with ARDEX CG can proceed as soon as the surface of the ARDEX SD-T® hardens sufficiently to work on it without damaging the surface (approx. 2 to 3 hours under standard conditions of 70°F/21°C and 50% RH). Low ambient temperatures and/or high humidity can extend this time. Traffic can proceed as soon as the ARDEX CG has dried to ARDEX recommendations. For ARDEX CG installation instructions, please refer to the ARDEX CG Technical Brochure.

For certain ARDEX DESIGNER FLOOR applications, ARDEX STONE OIL™ may be specified. For installation instructions, please refer to the ARDEX STONE OIL Technical Brochure.

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 (0,5 mm), the coating can be applied as soon as the surface of the ARDEX SD-T® is hard (2 to 3 hours at 70°F/21°C). When using a solvent-borne or 100% solids coating applied at a total thickness of 20 mils (0,5 mm) or

less, the ARDEX SD-T® must cure for a minimum of 24 hours at 70°F (21°C). When the total application thickness will exceed 20 mils (0,5 mm), the ARDEX SD-T® must cure 3 to 5 days at 70°F (21°C) 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 sacrificial floor finish ("wax" or "polish") applied over the surface of the newly installed and sealed floor. This sacrificial coating is the best way to ensure the long-term appearance of a newly installed 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.

ARDEX SD-T® 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-T® is not a resurfacing topping for heavy-duty manufacturing or industrial floors, or for chemical environments requiring customized industrial toppings.

## Cracking

ARDEX SD-T® is formulated as a highly durable, non-structural 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 of 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.

Additionally, certain jobsite conditions can lead to hairline cracking, also known as "map cracking" or "crazing." Hairline cracking, while aesthetically unpleasant, typically does not affect the overall performance of the topping. The most common cause of hairline cracking is excessively rapid moisture evaporation from the topping during cure, which tends to happen when ambient humidity in the space is very low and/or air rapidly moves over the surface of the topping. Hairline cracking can also occur when there is even slight movement or deflection in the existing substrate.

If cracking occurs, we recommend sounding the affected areas to ensure that the topping is well-bonded to the substrate. So long as the topping is well-bonded, its overall performance will not be affected.

## Notes

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 coating. This product is not a vapor barrier and will allow free passage of moisture. **Follow the directives of the coating manufacturer regarding the maximum allowable substrate moisture content, and test the substrate prior to installing ARDEX SD-T®.** Where substrate moisture exceeds the maximum allowed, ARDEX recommends using ARDEX Moisture Control Systems. For further information, please refer to the ARDEX Technical Brochures.

Always install an adequate number of properly located test areas, including the wear protection system, to determine the suitability and aesthetic value of the products for the intended use. As coatings vary, always contact and rely upon the coating manufacturer for specific directives such as maximum allowable moisture content, coating selection and intended end use of the product.

Low substrate temperatures and/or high ambient humidity require longer drying times for ARDEX primers. Do not install ARDEX SD-T® before the primer has dried thoroughly.

## Precautions

ARDEX SD-T® contains Portland cement and sand aggregate. Avoid eye and skin contact. Mix in a well-ventilated area, and avoid breathing powder or dust. **KEEP OUT OF REACH OF CHILDREN.** Carefully read and follow all cautions and warnings on product label.

Never mix with cement or additives other than ARDEX approved products. 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.

## Technical Data According to ARDEX Quality Standards

All data based on a mixing ratio of 4 parts powder to 1 part water by volume at 70°F (21°C)

<b>Mixing Ratio:</b>	5 quarts (4.75 L) of water per one 50 lb (22.7 kg) bag
<b>Coverage:</b>	25 sq. ft. per bag at 1/4" (2.3 m <sup>2</sup> /bag at 6 mm) 12.5 sq. ft. per bag at 1/2" (1.2 m <sup>2</sup> /bag at 12 mm)
<b>Flow time:</b>	10 minutes
<b>Initial Set (ASTM C191):</b>	Approx. 10 minutes
<b>Final Set (ASTM C191):</b>	Approx. 45 minutes
<b>Compressive Strength: ASTM C109/mod – Air cure only</b>	6100 psi at 28 days
<b>Flexural Strength: (ASTM C348)</b>	1200 psi at 28 days
<b>Walkable:</b>	2 to 3 hours
<b>Install Coating:</b>	Waterborne: When hard Solvent-borne and high solids (less than 20 mils/0.5 mm): 24 hours High build polymer coating (greater than 20 mils/0.5 mm): 3 to 5 days
<b>Colors:</b>	Gray, White
<b>Packaging:</b>	50 lb/22.7 kg net weight in paper bags
<b>Storage:</b>	Store in a cool dry area. Do not expose bags to sun.
<b>Shelf Life:</b>	nine months if unopened
<b>Warranty:</b>	ARDEX, L.P. Standard Limited Warranty applies.

## IMPORTANT TECHNICAL UPDATES

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

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