



ARDEX PC-T™

Polished Concrete Topping

A blend of Portland cement and other hydraulic cements

Smooth new or existing concrete and certain non-porous surfaces

Install from 3/8" (9.5 mm) up to 2" (5 cm) neat and up to 5" (13 cm) with aggregate

Walkable in 2-3 hours

Polish in as little as 24 hours

Designed for use with ARDEX Polished Concrete System (APCS)

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ARDEX PC-T™

Polished Concrete Topping

Description and Usage

ARDEX PC-T™ Polished Concrete Topping is a self-drying, self-leveling blend of Portland cements and other hydraulic cements for creating polished concrete floors. ARDEX PC-T installs from 3/8" to 2" (9.5 mm to 5 cm) neat and up to 5" (13 cm) with the addition of aggregate. ARDEX PC-T hardens fast due to its unique self-drying formulation – it can be polished in as little as 24 hours. Use ARDEX PC-T to provide a hard, flat, smooth surface that can be polished. ARDEX PC-T is ideal in areas such as retail stores, schools, warehouses, airports and all interiors where a polished concrete surface is desired.

Substrate Preparation

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.

The substrate surface must have a minimum ICRI Concrete Surface Profile of 3 (CSP #3). Any additional preparation required to achieve this must likewise be mechanical.

Substrate and ambient temperatures must be a minimum of 50°F (10°C) for the installation of ARDEX products.

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 more detailed information on substrate preparation, please refer to the ARDEX Substrate Preparation Brochure at www.ardexamericas.com.

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 (4.73 L) per 50 lb. (22.7 kg) bag], 1/2" (12 mm) heavy-duty drill (min. 650 rpm), and baseball or soccer shoes with non-metallic cleats.

Joints and Moving Cracks

Under no circumstances should ARDEX PC-T 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 PC-T 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.

Priming

ARDEX Polished Concrete System requires 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 in the ARDEX EP 2000 technical brochure.

When ARDEX PC-T will be installed in an aggregate layer followed by a neat layer (see Thickness of Application below), the underlying concrete can be primed with ARDEX P 51™ Primer prior to installing the aggregate layer. Carefully follow the instructions in the ARDEX P 51 technical brochure. The aggregate layer must be primed with ARDEX EP 2000 with sand broadcast prior to installing the neat layer; see below.

Mixing and Application

MANUALLY: ARDEX PC-T is mixed two bags at a time. Mix each 50 lb. (22.7 kg) bag with 5 quarts (4.73 L) of clean water. Pour the water in the mixing drum first, and then add each bag of ARDEX PC-T while mixing with an ARDEX T-1 Paddle and a 1/2" (12 mm) 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.

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

ARDEX PC-T has a flow time of 10 minutes at 70°F (21°C). Pour the mix onto 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 PC-T.

As ARDEX PC-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.

Thickness of Application

ARDEX PC-T can be installed from 3/8" (9.5 mm) up to 2" (5 cm) over large areas neat, and up to 5" (13 cm) with the addition of proper aggregate. ARDEX PC-T also can be tapered to meet existing elevations.

For areas with thicknesses greater than 2" (5 cm), mix ARDEX PC-T with washed and well-graded 1/8" to 3/8" (3 to 9.5 mm) pea gravel. Please note that the aggregate size must not exceed 1/3 the depth of the pour. Mix the ARDEX PC-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 neat coat to obtain a smooth surface. Allow the initial application to dry for 12-16 hours, and then prime this layer with ARDEX EP 2000 and sand broadcast, following the instructions in the ARDEX EP 2000 technical brochure. Allow the primer to dry 16 hours before removing all excess sand and installing the neat coat of ARDEX PC-T.

Polishing and Maintenance

For instructions regarding the polishing, treatment and sealing of your polished concrete floor, please refer to the Formatted Specification for ARDEX APCS on the ARDEX PC-T product page at www.ardexamericas.com. If a pinhole filler is required, ARDEX SD-M™ Polished Concrete Micro-Topping can be used in accordance with the instructions in its technical brochure.

Allow ARDEX PC-T to cure 24-72 hours prior to polishing. 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 PC-T product page at www.ardexamericas.com.

ARDEX PC-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 PC-T is not a resurfacing topping for heavy-duty manufacturing or 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 will also help to minimize scratching and abrasion due to foot traffic.

Cracking

ARDEX PC-T 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 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. We know of no method to prevent this telegraphing from occurring.

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

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. Test for moisture using the relative humidity method in accordance with ASTM F2170. Where substrate moisture is greater than 75% RH, install the ARDEX MC™ ULTRA Moisture Control System. For further information, please refer to the ARDEX Technical Brochure.

ARDEX Polished Concrete System wear surfaces are not intended to be perfectly homogeneous in appearance. The physical act of spreading and smoothing, along with the sanding process, will result in optical variations in the appearance of the floor even though it is very flat. The aesthetic appearance of the floor that is created is subject to possible technical and artistic tolerances. Variations in the overall finished appearance are an intended effect and should be expected.

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

The finished floor does not achieve its published surface hardness until after 28 days.

While ARDEX Polished Concrete System can be installed over concrete that contains in-floor heating, ARDEX PC-T should not be used to encapsulate any heating system directly. If the concrete substrate has in-floor heating, it should be turned off and the concrete allowed to cool before installing ARDEX PC-T.

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

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 warm weather instructions available from the ARDEX Technical Service Department.

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 4 parts powder to 1 part water by volume at 70°F (21°C). Physical properties are typical values and not specifications.

Mixing Ratio:	5 quarts (4.73 L) of water per 50 lb. (22.7 kg) bag
Coverage:	16.7 sq. ft. per bag at 3/8" (1.6 sq. m at 9.5 mm) 12.5 sq. ft. per bag at 1/2" (1.2 sq. m at 12 mm)
Flow time:	10 minutes
Initial Set (ASTM C191):	Approx. 10 minutes
Final Set (ASTM C191):	Approx. 45 minutes
Compressive Strength (ASTM C109/mod – Air cure only):	6100 psi (42.06 N/mm ²) at 28 days
Flexural Strength:	1200 psi (8.27 N/mm ²) at 28 days
Walkable:	2 to 3 hours
Begin Processing:	24 - 72 hours
Colors:	Light Gray, Gray and White
VOC:	0
Packaging:	50 lb (22.7 kg) net weight
Storage:	Store in a cool dry area. Do not leave bags exposed to sun.
Shelf Life:	6 months, if unopened
Warranty:	ARDEX Engineered Cements Standard Limited Warranty applies.

Made in the USA by ARDEX Engineered Cements, Aliquippa, PA 15001
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AT-357 E - 10/21/2016

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