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# **ARDEX K 301™**

## **Exterior Self-Leveling Concrete Topping**

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**Portland cement-based**

**Smooth new or existing concrete, porous tile and certain non-porous surfaces**

**Install from 1/4" to 3/4" neat, and up to 2" with aggregate**

**Walk on in 2 to 3 hours**

**Freeze-thaw resistant**

**Suitable for use in wet areas**

**For commercial, light industrial and residential applications**

**Use for exterior and interior applications**

**Suitable for use under the ARDEX Moisture Control Systems**

**Can be used as an underlayment prior to installing floor covering**

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# ARDEX K 301™

## Exterior Self-Leveling Concrete Topping

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### Description and Usage

ARDEX K 301™ is a self-leveling Portland cement-based topping and underlayment for fast-track resurfacing and smoothing for exterior and interior applications over concrete, porous tile and certain non-porous surfaces when properly prepared – on, above or below grade. ARDEX K 301 can be sealed to create a concrete wear surface for commercial, light industrial and residential applications, including storage rooms, workshops, parking garages, parking decks, driveways, patios and plazas. It can also be used as an underlayment for finish flooring, as well as on permanently wet areas and under moisture remediation systems such as the ARDEX Moisture Control Systems.

Installs from 1/4" to 3/4" in one application, and up to 2" with the addition of appropriate aggregate. Pourable or pumpable when mixed with water. Seeks its own level and produces a smooth, flat, hard surface. Hardens quickly and dries fast without shrinking, cracking or spalling.

### Substrate Preparation

All substrates must be solid, thoroughly clean and free of oil, wax, grease, asphalt, existing patching materials, curing and sealing compounds, and any contaminant that might act as a bond breaker. Over watered, frozen or otherwise weak concrete surfaces must also be cleaned down to sound, solid concrete by mechanical methods. All substrates must be mechanically roughened to a minimum ICRI surface profile of CSP 3. Mechanically prepare the substrate down to a sound, solid surface by shot blasting, scarifying or similar method. Acid etching, adhesive removers, solvents and sweeping compounds are not acceptable means of cleaning the substrate. Sanding equipment is not an effective method to prepare the substrate. Substrate and ambient temperatures must be a minimum of 50°F (10°C) during and for 48 hours after the installation of ARDEX K 301. For further information, please refer to the ARDEX Substrate Preparation Brochure or contact the ARDEX Technical Service Department

### Cracks and Joints

Existing cracks in the concrete can telegraph up through the topping. Although repairing cracks in the substrate is always recommended prior to installing ARDEX K 301, ARDEX cannot warrant that cracks will not reappear.

For the treatment of cracks, ARDEX recommends the use of a two-part epoxy crack and joint filler such as ARDEX ARDIFIX™ LOW VISCOSITY RIGID POLYURETHANE CRACK & JOINT REPAIR. Use the epoxy to fill non-moving (dormant) cracks in existing concrete surfaces. Cracks greater than a hairline in width (1/32") must be filled with ARDEX ARDIFIX or similar in strict accordance with the installation instructions provided by the epoxy manufacturer, and must receive a sand broadcast to refusal while the epoxy is still

fresh. After full cure, the excess sand should be removed prior to proceeding with the ARDEX K 301 installation. 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.

All moving joints, such as expansion, isolation and construction joints, must be carried up through the topping and sealed with an elastomeric material specifically for use in moving joints. **Honor all moving joints!**

### 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 (4.75 liters) for 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 where aesthetics are not critical can be primed with ARDEX P 71™ PRIMER. Shake the ARDEX P 71 container until a uniform consistency is achieved. DO NOT DILUTE. Pour onto concrete and apply evenly with an exploded tip, soft-bristle push broom. Do not use paint rollers, mops or spray equipment. Apply additional primer as necessary until the concrete is thoroughly saturated. Do not leave any bare spots. Prior to installing ARDEX K 301, brush or vacuum off puddles and excess primer. The goal is to saturate the pores of the concrete while leaving the surface free of primer (SSD, Saturated Surface Dry). Any excess primer not removed will float to the surface of the ARDEX K 301, potentially causing discoloration and softening of the topping surface. Do not allow the primer to dry. ARDEX K 301 must be applied while the primer is still wet to avoid pinholes. If the primer dries, immediately apply more primer directly over the dried area to re-saturate the concrete. Warm temperatures or air movement will decrease the working time of the ARDEX P 71.

To avoid the risk of applying over dried ARDEX P 71, as well as to minimize the potential for reflective cracking, use ARDEX EP 2000 with sand broadcast. Please be advised that ARDEX cannot be responsible for any aesthetic issues that arise from the priming method used.

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## Mixing and Application – Manually

ARDEX K 301 is mixed 2 bags at a time. Each 50 lb bag is mixed with 5 quarts (4.75 liters) of water. Pour the water in the mixing drum first, then add each bag of ARDEX K 301 while mixing with an ARDEX T-1 Paddle and a ½" heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 2 minutes to obtain a lump-free mix. **Do not over water!** Yellowish foam while mixing, or settling of the sand aggregate while placing, indicates over watering. For smoothing inclined surfaces, contact the ARDEX Technical Service Department.

ARDEX K 301 has a flow time of 10 minutes at 70°F (21°C). Pour the liquid mix onto the substrate 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 K 301. Elevated slab temperatures, direct sun at high temperatures, or wind or drafts moving across the surface will reduce working time. In warm weather, use cold water to extend the working time, and apply early in the day.

## Mixing and Application – Pumping

ARDEX K 301 can be pumped using the ARDEX Levelcraft™ Automatic Mixing Pump. The Levelcraft Pump provides for high productivity and a smooth, consistent installation. The pump may be rented from an authorized ARDEX Distributor, and is supported by the ARDEX Technical Service Department.

Start the pump at a water setting of 150 gallons per hour, and then adjust to the minimum water reading that allows self-leveling properties. **Do not overwater!** Check the consistency of the product on the floor to ensure a uniform distribution of the sand aggregate at both the top surface and bottom of the pour. Conditions during the installation, such as variations in water, powder, substrate and ambient temperature, require that the water setting be adjusted during installation to avoid overwatering.

ARDEX K 301 has a flow time of 10 minutes at 70°F (21°C). Pour the liquid mix onto the substrate 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 K 301. Elevated slab temperatures, direct sun at high temperatures, or wind or drafts moving across the surface will reduce working time. In warm weather, use cold water to extend the working time, and apply early in the day. Contact the ARDEX Technical Service Department for complete pump installation instructions.

## Thickness of Application

ARDEX K 301 must be installed at a minimum thickness of ¼". ARDEX K 301 can be installed up to ¾" deep over large areas in one pour, and up to 2" with the addition of proper aggregate.

For thicknesses greater than ¾", mix ARDEX K 301 with washed and well-graded ½"-¾" pea gravel. Mix ARDEX K 301 with water first, then add up to 1 part by volume of aggregate, mixing until the aggregate is completely coated. If aggregate is wet, reduce the amount of water to avoid over watering. Do not use sand.

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 24 hours. Install an application of ARDEX EP 2000 with sand broadcast as above and allow it to cure for 16 hours prior to removing all excess sand and installing the neat coat of ARDEX K 301.

## Color

ARDEX K 301 is formulated from Portland cement and is a light gray color when dry. As concrete color and jobsite conditions vary widely, it is not intended that this product will match the color of the concrete being resurfaced or an adjacent concrete pad. Jobsite conditions such as direct sunlight and wind, as well as the surface of the topping being exposed to moisture before it completely sets, can lead to color variations in the appearance of the topping. Should this be undesirable, a pigmented sealer such as ARDEX CG Concrete Guard™ Gray may be used. Consult the ARDEX Technical Service Department for additional information.

## Curing

Although ARDEX K 301 requires no special curing procedures, avoid applying this product if rain is expected within 6 to 8 hours, or if freezing temperatures could occur within 48 hours of application. As with any cementitious material, the above conditions can alter the appearance and performance of the topping.

## Finished Wear Surface

ARDEX K 301 will produce a flat, smooth, cementitious surface. It is always recommended that exterior wear surfaces be sealed with an appropriate sealer and subsequently maintained to provide the longest service life possible. If a reduced-slip surface is required, it can be obtained by using ARDEX CD™ CONCRETE DRESSING and then broom finishing, or by incorporating grit into the selected sealer. If a waterborne sealer such as ARDEX CG Concrete Guard™ is to be applied at a thickness not-to-exceed a total of 20 mils, the coating can be applied after the ARDEX K 301 has cured for 24 hours. When using

a solvent-borne or 100% solids epoxy coating applied at a total thickness of 20 mils or less, the ARDEX K 301 must first cure for a minimum of 2 to 3 days. When the total application thickness of the protection layer will exceed 20 mils, the ARDEX K 301 must cure 7 days prior to sealing.

If ARDEX CD is to be used, allow the ARDEX K 301 to dry for a minimum of 24 hours. While priming is not required before installing ARDEX CD, the surface of ARDEX K 301 may be primed with ARDEX CG diluted 1:1 with water to extend working time and minimize the formation of pinholes.

When using ARDEX K 301 as a smoothing compound prior to installing the ARDEX MC™ Moisture Control System, or when using it as an underlayment in an exterior application to receive indoor/outdoor carpeting, allow the ARDEX K 301 to dry for a minimum of 24 hours at 70°F (21°C) prior to proceeding with the next phase of installation. Do not seal the ARDEX K 301 before installing ARDEX MC.

ARDEX K 301 wear surfaces are intended for foot and moderate, rubber-wheeled 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 K 301 is recommended for light industrial, commercial and residential use only. While light foot traffic can proceed after 2 to 3 hours, avoid rubber-wheeled traffic for the first 48 hours after installation. ARDEX K 301 is not intended for industrial uses such as heavy manufacturing or areas with heavy truck traffic, or in chemical environments requiring customized industrial toppings. ARDEX K 301 must be worked at temperatures over 50°F (10°C).

## Notes

The flow time of ARDEX K 301 is approximately 10 minutes at 70°F (21°C). The flow time will vary with surface and ambient temperatures. At higher temperatures and/or under windy conditions, ARDEX K 301 will set much faster than normal.

Always install an adequate number of properly located test areas, including the sealer or finish flooring, to determine the suitability of the products for the intended use. As floor coverings and sealants vary, always contact and rely upon the floor covering or sealer manufacturer for specific directives such as maximum allowable moisture content, adhesive 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 K 301 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 ambient temperatures. Install quickly if substrate is warm and follow hot weather instructions available from the ARDEX Technical Service Department.

## Precautions

ARDEX K 301 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.

## Technical Data According to ARDEX Quality Standards

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All data based on a mixing ratio of 5 parts powder to 1 part water by volume at 70°F (21°C)

<b>Mixing Ratio:</b>	5 quarts (4.75 liters) of water per one 50 lb (22.7 kg) bag.
<b>Coverage:</b>	23 sq. ft. per bag at 1/4" (2.1 m <sup>2</sup> at 6 mm)
<b>Flow Time:</b>	10 minutes
<b>Compressive Strength (ASTM C109/mod – Air cure only):</b>	4300 psi at 28 days
<b>Flexural Strength (ASTM C348):</b>	1000 psi at 28 days
<b>Walkable:</b>	2 to 3 hours
<b>Install Sealer:</b>	Waterborne - 24 hours
	Solvent-borne and high solids (less than 20 mils): 2 to 3 days
	High build polymer coatings (greater than 20 mils): 7 days
<b>VOC:</b>	0g/L, calculated SCAQMD 1168
<b>Packaging:</b>	50 lb/22.7 kg net weight in paper bags
<b>Storage:</b>	Store in a cool dry area. Do not leave bags exposed to sun.
<b>Shelf Life:</b>	One year if unopened
<b>Warranty:</b>	ARDEX Engineered Cements Standard Limited Warranty applies.

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