ARDEX K 523™

Self-Leveling Concrete Topping with Aggregate Surface

A blend of Portland cement, hydraulic cements and specialty aggregate

Resurface indoor concrete

Walk on in 2 - 3 hours, polish in as little as 24 hours

Use for interior floors only

TESTED IN ACCORDANCE WITH ASTM C 1708

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ARDEX K 523™

Self-Leveling Concrete Topping with Aggregate Surface

Description and Usage

ARDEX K 523™ is a pourable, polishable, self-leveling topping for fast-track resurfacing of indoor concrete. ARDEX K 523 can be installed from a minimum thickness of 3/8" (9 mm) up to a maximum thickness of 2" (5 cm). With black and white aggregates, ARDEX K 523 provides a polished, "aggregate-exposed" surface. Polishing can proceed in as little as 24 hours.

Suitable Substrates

Interior concrete only

Substrate Preparation (Proper Prep™)

Acid etching, adhesive removers, solvents and sweeping compounds are not acceptable means of cleaning the substrate. gMechanical preparation methods must comply with OSHA Silica Standard for Construction CFR §1926.1153. After mechanical preparation is completed and prior to priming, ensure that all dust and debris is removed from the substrate by vacuuming thoroughly. The vacuum filter must comply with OSHA Silica Standard for Construction CFR §1926.1153.

Substrates must be dry and properly primed for a successful installation. Substrate and air temperatures must be a minimum of 50°F (10°C). For further information, please refer to the ARDEX Substrate Preparation Technical Data Sheet.

All concrete 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. Sanding is not an effective method to remove contaminants from concrete.

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

Note on Asbestos-Containing Materials: 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.

Joints and Moving Cracks

Under no circumstances should ARDEX K 523 be installed over any joints or any moving cracks. All existing expansion joints, isolation joints, construction joints and dormant control joints (saw cuts), as well as all 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 K 523 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" (0.75 mm) wide that will not be honored 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 and proceeding with the 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. See the "Cracking" section below for more details.

Priming / Moisture Control

Moisture Control: ARDEX K 523 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. This product is not a vapor barrier and will allow free passage of moisture. Test the substrate using the relative humidity test method in accordance with ASTM F2170 prior to installing. If the test results are greater than 85%, ARDEX MC RAPID must be installed with a sand broadcast in accordance with the ARDEX MC RAPID technical data sheet. Where ARDEX MC RAPID and sand broadcast are installed, no further priming is required prior to installing ARDEX K 523.

Priming: For all applications where ARDEX MC RAPID has not been installed, prime with ARDEX EP 2000™ Substrate Preparation Epoxy Primer. 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 data sheet.

Primer Dry Times: ARDEX MC RAPID and/or ARDEX EP 2000 may need longer drying times with low surface temperatures and/or high ambient humidity. Do not install ARDEX K 523 before the selected primer has dried thoroughly.

Recommended Tools

ARDEX T-1 Mixing Paddle; ARDEX T-10 Mixing Drum; ARDEX T-4 Spreader; ARDEX T-5 Smoother; ARDEX MB-3.75 Measuring Bucket [3.25 or 3.75 quarts (3.07 or 3.55 L) per 50 lb. (22.7 kg) bag]; 1/2" (12 mm) heavy-duty drill (min. 650 rpm) and cleated athletic shoes with non-metallic spikes.

Mixing and Application

Manual Mixing

ARDEX K 523 is mixed two bags at a time. Mix each 50 lb. (22.7 kg) bag with 3.25 or 3.75 quarts (3.07 or 3.55 L) of clean water (lower water level allows aggregates to be suspended higher in the mix, requiring less processing to achieve aggregate reveal).

Pour the water in the mixing drum first, and then add each bag of ARDEX K 523 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 - 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.

When installing ARDEX K 523 in high-stress areas subject to rolling loads such as rubber-wheeled forklift traffic or similar use, the addition of ARDEX E 25™ Resilient Emulsion is required to increase the resiliency of the ARDEX K 523. Mix 1.75 quarts (1.65 L) of ARDEX E 25 with 3 quarts (2.8 L) of water for each bag of ARDEX K 523 following the mixing instructions above. Please note that, if ARDEX E 25 is used, the ARDEX K 523 must first cure 24 hours prior to receiving foot traffic and 48 hours prior to being polished.

Work Practice Control Methods

ARDEX recommends using the ARDEX DUSTFREE™ or a standard "gutter hook" vacuum attachment in combination with a HEPA dust extraction vacuum system when mixing ARDEX K 523. Handle the

bag with care, and empty the bag slowly to avoid creating a plume of dust. Contact the ARDEX Technical Service Department for more details on ARDEX products and OSHA Engineering and Work Practice Control Methods.

APPLICATION INSTRUCTIONS

ARDEX K 523 has a flow time of 10 minutes at 70°F (21°C). Pour the mix onto the substrate and spread with the ARDEX T-4 Spreader. Immediately smooth the material with the ARDEX T-5 Smoother. Work in a continuous manner during the entire self-leveling installation. Wear cleated athletic shoes with non-metallic spikes to avoid leaving marks in the liquid ARDEX K 523.

Thickness of Application

ARDEX K 523 can be installed from 3/8" (9 mm) up to 2" (5 cm).

Required Cure Time

If ARDEX E 25 was used, allow the ARDEX K 523 to cure for 24 hours prior to opening the installation to foot traffic and 48 hours prior to polishing (70°F / 21°C).

If ARDEX E 25 was not used, allow the ARDEX K 523 to cure for 2 - 3 hours prior to opening the installation to foot traffic and 24 hours prior to polishing (70°F / 21°C).

Drying time is a function of jobsite temperature and humidity. Low substrate temperatures and/or high ambient humidity will extend the drying time. Adequate ventilation and heat will aid drying. Forced drying can dry the surface of the topping prematurely and is not recommended.

Cracking

ARDEX K 523 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 nonstructural 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. Conditions most likely to lead to crack telegraphing include deflection of a concrete slab; vibration of a concrete slab, such as that due to truck traffic and subways in metropolitan areas; swaying or "racking" of substrates in high rise buildings due to wind; existing cracks in the substrate; control joints or saw-cuts; expansion joints; abutment of dissimilar substrates; embedded metal ductwork and/or 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 overly rapid moisture evaporation from the topping during cure, which tends to happen when ambient humidity in the space is very low and/or air is moved rapidly over the surface of the topping. Hairline cracking also can occur when there is slight substrate movement while the topping cures.

If cracking occurs, we recommend sounding the affected areas to ensure that that the topping is well bonded to the substrate. As long as the topping is well bonded, its overall performance will not be affected. If there is a desire to smooth or mask the appearance of the cracks, please contact the ARDEX Technical Service Department for a recommendation.

Notes

FOR PROFESSIONAL USE ONLY. Improper use voids warranty.

ARDEX K 523 wear surfaces are intended for foot traffic. 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 K 523 is not a resurfacing topping for heavy-duty manufacturing areas 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 also will help to minimize scratching and abrasion due to foot traffic.

ARDEX K 523 wear surfaces are not intended to be perfectly homogeneous in appearance. The physical act of spreading and smoothing will result in optical variations in the appearance of the floor even though it is very flat. The aesthetic appearance 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, to determine the suitability and aesthetic value of the products for the intended use. As coatings vary, always contact and rely upon the manufacturer for specific directives, such as maximum allowable moisture content, coating selection and intended end use of the product.

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

While ARDEX K 523 can be installed over concrete that contains in-floor heating, ARDEX K 523 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 should be allowed to cool, before installing ARDEX K 523.

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.

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

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

Physical properties are typical values and not specifications. All data based on a partial, in-lab mix. Mixing and testing completed at 70°F / 21°C and, where applicable, in accordance with ASTM C1708.

Mixing Ratio:	3.25 or 3.75quarts (3.07 or 3.55 L) of water per 50 lb. (22.7 kg) bag
Coverage:	Up to 13 sq. ft. per bag at 3/8" (1.2 sq. m at 9 mm)
Flow time:	10 minutes
Thickness of Installation:	3/8" (9 mm) up to 2" (5 cm)
Compressive strength (ASTM C109/mod – air cure only):	6,200 psi (436 kg/cm^2) at 28 days
Flexural strength (ASTM C348):	1,100 psi (77 kg/cm^2) at 28 days
Walkable:	2 - 3 hours (without E 25) 24 hours (with E 25)
Polishable:	24 hours (without E 25) 48 hours (with E 25)
Available Colors:	Gray
VOC:	0
Packaging:	50 lb. (22.7 kg) net weight bag
Storage:	Store in a cool, dry area. Do not leave bags exposed to sun.
Shelf life:	9 months, if unopened
Warranty:	ARDEX, L.P. Standard Limited Warranty applies.

Made in the USA.

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IMPORTANT TECHNICAL UPDATES

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

CLICK HERE

Visit www.youtube.com/ARDEX101 to watch ARDEX Americas product videos.

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