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# **ARDEX LW™**

## **Lightweight, Fast-Setting, Concrete Fill System**

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**Lightweight - 69 to 73 lb. per cubic foot**

**Walk on in 2 - 3 hours**

**Install the deep fill layer from a minimum of 3/4" up to any thickness**

**Fast track - smoothing course applied after 16 hours**

**Combines ARDEX Engineered Cements technology with advanced  
lightweight bead technology**

**Interior applications only**

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# ARDEX LW™

## Lightweight, Fast-Setting, Concrete Fill System

### Description and Usage

The ARDEX LW System is a lightweight fill system for existing, indoor concrete slabs where the addition of dead load to the structure is a concern. It combines ARDEX Engineered Cement technology with the addition of lightweight synthetic particles to create a deep fill that can be applied from a minimum of 3/4" up to any thickness. This is followed by a 1/4" coat of an ARDEX Self-Leveling Underlayment to create the ideal surface for the finished flooring installation.

Per inch of thickness, standard concrete adds 12 - 13 lb. of dead load per sq. ft. (58 - 63 kg / sq. m at 2.5 cm), while gypsum fills and Portland cement-based underlayments add 9 - 10 lb. / sq. ft. (44 - 49 kg / sq. m). Other traditional lightweight fill materials have substantially lower densities, but lack the integrity to serve as the substrate for a leveling course. Per inch of thickness, the ARDEX LW deep fill layer adds only 6.08 lb. / sq. ft. (29.7 kg / sq. m at 2.5 cm), and it dries and hardens quickly enough to allow the installation of the ARDEX Self-Leveling Underlayment layer after just one day.

### System Components

#### Deep Fill Layer

- ARDEX P 51™ Primer
- ARDEX K 520™ Self-Leveling Concrete Topping
- "C" (avg. 2 mm) or "B" (avg. 3 mm) size Beads (approx. 5 gal. / 19 L per bag of ARDEX K 520™)

#### Self-Leveling Underlayment Layer

- ARDEX P 51 Primer
- One of the following:
  - ARDEX K 15® Premium Self-Leveling Underlayment
  - ARDEX K 13™ Premium Self-Leveling Underlayment
  - ARDEX V 1200™ Self-Leveling Underlayment

### Substrate Preparation (Proper Prep™)

Concrete substrates must be solid, structurally sound and thoroughly clean and free of oil, wax, grease, asphalt, paint, latex and gypsum compounds, curing compounds, sealers and any contaminant that might act as a bond breaker. Mechanically clean the surface by shot blasting, scarifying or similar. Mechanical preparation method must comply with OSHA Silica Standard for Construction CFR §1926.1153. Overwatered, frozen or otherwise weak concrete surfaces must also be cleaned down to sound, solid concrete by mechanical methods. Acid etching and the use of solvents or sweeping compounds are not acceptable means of cleaning the substrate. The resulting concrete surface must be porous and absorbent.

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. The concrete must be dry and properly primed for a successful installation. The concrete surface and ambient temperatures must be a minimum of 50°F (10°C) for the installation of all ARDEX products. For more detailed information on substrate preparation, please refer to the ARDEX Substrate Preparation Brochure at [www.ardexamericas.com](http://www.ardexamericas.com).

### 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 Cracks

Under no circumstances should the ARDEX LW System be installed over any moving joints or moving cracks. All existing expansion joints, isolation joints and construction joints, as well as all moving cracks, must be honored up through the ARDEX LW System and finish flooring.

As needed, dormant cracks and dormant control joints can be filled with ARDEX FEATHER FINISH® or ARDEX ARDIFIX™, following the instructions in each product's technical data sheet. Please note that if ARDEX ARDIFIX is used, it must be sand-broadcasted to refusal.

However, please be advised that while dormant control joints and dormant cracks in the slab may be filled with ARDEX FEATHER FINISH or ARDEX ARDIFIX prior to installing the ARDEX LW System, this filling is not intended to act as a repair method that will eliminate the possibility of joints and cracks telegraphing. ARDEX FEATHER FINISH, ARDEX ARDIFIX and the ARDEX LW System are non-structural materials and are, therefore, unable to restrain movement within a concrete slab. This means that while some dormant joints and dormant cracks may not telegraph through the ARDEX materials and up into the finish flooring, cracks will telegraph in any area that exhibits movement, such as an active crack, an expansion or isolation joint, or an area where dissimilar substrates meet. We know of no method to prevent this telegraphing from occurring.

### Recommended Tools

ARDEX T-1 Mixing Paddle, ARDEX T-10 Mixing Drum, ARDEX T-4 Spreader, ARDEX T-5 Smoother, ARDEX T-6 Spiked Roller, ARDEX MB-5 5-quart (4.73 L) measuring bucket, a 1/2" (12 mm) heavy-duty drill (min. 1200 rpm), a wood, aluminum or magnesium screed bar and baseball or soccer shoes with non-metallic cleats

### Priming

#### Primer Dry Times

ARDEX primers may need longer drying times with low surface temperatures and/or high ambient humidity. Do not install the ARDEX LW System before the primer has dried thoroughly.

#### Primer Selection

Substrate	Primer / Priming Method
Standard absorbent concrete	ARDEX P 51 standard (1:1)
Extremely absorbent concrete	ARDEX P 51 double priming method

#### ARDEX P 51 Standard (1:1)

Mix ARDEX P 51™ Primer with water at a 1:1 ratio by volume. Apply evenly with a soft bristled push broom. Do not use paint rollers, mops or spray equipment. Do not leave any bare spots. Remove all puddles and excess primer. Allow primer to dry to a clear, thin film (min. 3 hours, max. 24 hours).

## ARDEX P 51 Double Priming Method

Extremely absorbent concrete may require two applications of ARDEX P 51 to avoid the formation of bubbles and pinholes in the ARDEX LW system. In such cases, make an initial application of ARDEX P 51 diluted with 3 parts water. Let dry thoroughly (1 - 3 hours) and install a second application of ARDEX P 51 mixed 1:1 with water as stated above.

## Mixing

ARDEX K 520 is mixed 1 bag at a time. For "C" size beads, pour 5 quarts (4.73 L) of clean water into the mixing drum first, then add the bag of ARDEX K 520 while mixing with an ARDEX T-1 Mixing Paddle and a 1/2" (12 mm) heavy-duty drill (min. 1,200 rpm). Mix thoroughly for approximately 1 minute to obtain a lump-free mix. For "B" size beads, use 4.25 quarts (4.02 L) of water. **DO NOT OVERWATER!**

After initial mixing is complete, stop the drill. Fill the entire, empty ARDEX K 520 bag with beads (approximately 5 gal. / 19 L per bag) and then add the beads to the mix. Begin re-mixing and continue for 1 1/2 minutes more to ensure that the materials are uniformly blended. While mixing, use a temporary lid or cap on the barrel to reduce bead overflow.

## Work Practice Control Methods

When mixing the ARDEX K 520 powder, ARDEX recommends using the ARDEX DUSTFREE™ or a standard "gutter hook" vacuum attachment in combination with a HEPA dust extraction vacuum system. 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. Do not use a vacuum when adding the beads.

## Application

ARDEX K 520 remains workable for 5 - 10 minutes at 70°F (21°C). Pour the liquid mix onto the prepared concrete and begin screeding using a wood, aluminum or magnesium screed as you would with normal concrete, ensuring that there is always cement paste at the surface and that the beads are encapsulated. Alternatively, the ARDEX T-5 Smoother can also be used. Note: When using screed rails, they must be installed 1/4 - 1/2" (6 - 12 mm) below the finished elevation to accommodate the installation of the smoothing layer of ARDEX K 15, ARDEX K 13 or ARDEX V 1200.

Continue mixing, placing and screeding the fill as you would concrete. It is recommended that several mixing barrels and mixers be used simultaneously to keep the process flowing smoothly. The fill will be ready to receive light foot traffic after 2 - 3 hours.

## Thickness of Installation

The ARDEX LW deep fill layer can be installed from 3/4" (18 mm) to virtually any thickness in one application. Remember to leave this layer at least 1/4 - 1/2" (6 - 12 mm) below the finished elevation to account for the smoothing course.

## Preparation for Smoothing Course

The ARDEX LW deep fill layer is not intended to be used for the direct installation of flooring. This layer must be topped with ARDEX K 15, ARDEX K 13 or ARDEX V 1200 at a minimum thickness of 1/4" (6 mm) prior to the installation of finish floor coverings.

To prepare the surface to receive the smoothing layer, any loose or exposed beads should be removed from the surface of the deep fill layer. If needed, lightly sand the surface once it has cured for 12 - 16 hours. Once sanded, vacuum the surface thoroughly to

remove all loose material. There should always be cement paste at the surface, and all beads should be encapsulated. The removal of all loose beads will produce a more solid surface to receive the primer and smoothing course.

Prime the surface of the prepared ARDEX LW deep fill layer with a single coat of ARDEX P 51 in accordance with the technical data sheet. Allow the ARDEX P 51 to dry thoroughly (min. 3 hours, max. 24 hours) before installing a neat layer of ARDEX K 15, ARDEX K 13 or ARDEX V 1200 in accordance with the appropriate technical data sheet. Again, this neat layer must be installed at least 1/4" (6 mm) thick. The finished flooring can then be installed once the selected self-leveling underlayment has cured in accordance with its technical data sheet.

## Bead Purchasing Information

To purchase "C" (avg 2 mm) or "B" (3 mm) size beads, please contact the following:

### Universal Foam

Kevin Baker: kbaker@univfoam.com

Direct: 443-689-2399

P: 410-498-0000 ext.228 / F: 410-498-0300

### Clyde Foam

Bruce Schrader: bruce@clydetool.com

P: 419-547-9574

### Polymos

Yvan DESPRÉS: yvand@polymos.com

P: 514-453-1920 / C: 514-913-2043

## Notes

FOR PROFESSIONAL USE ONLY. Improper use voids warranty.

This system is intended for interior use over dry concrete 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 system and floor covering. This system is not a vapor barrier and will allow free passage of moisture. Follow the directives of the floor covering manufacturer regarding the maximum allowable substrate moisture content, and test the substrate prior to installing the ARDEX LW System. Where substrate moisture exceeds the maximum allowed, ARDEX recommends the use of ARDEX moisture control systems. For further information, please refer to the ARDEX technical data sheets at [www.ardexamericas.com](http://www.ardexamericas.com).

Always install an adequate number of properly located test areas, including the floor covering, to determine the suitability of the products for the intended use. As floor coverings vary, always contact and rely upon the floor covering manufacturer for specific directives, such as maximum allowable moisture content, adhesive selection and intended end use of the product.

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 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 Sheets (SDS) available at [www.ardexamericas.com](http://www.ardexamericas.com).

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## Technical Data According To ARDEX

### Quality Standards

Physical properties are typical values and not specifications. All data is based on a mixing ratio of 4 parts powder to 1 part water by volume at 70°F (21°C).

**Coverage:** A 50 lb. (22.7 kg) bag of ARDEX K 520 mixed at a 1:1 ratio (approx. 5 gallons / 19 L) with beads yields approx. 1 cu. ft. of fill

For "C" size beads: 15 sq. ft. per bag at 3/4"  
(1.4 sq. m at 18 mm)

For "B" size beads: 16 sq. ft. per bag at 3/4"  
(1.5 sq. m at 18 mm)

**Working Time:** 5 - 10 minutes

**Initial Set (ASTM C191):** Approx. 15 minutes

**Final Set (ASTM C191):** Approx. 1 hour

**Compressive Strength of the finished surface (ASTM C109/mod-Air cure only):**

4,500 psi (316 kg/cm<sup>2</sup>) after 28 days if ARDEX V 1200 is used

5,300 psi (371 kg/cm<sup>2</sup>) after 28 days if ARDEX K 13 is used

5,500 psi (386 kg/cm<sup>2</sup>) after 28 days if ARDEX K 15 is used

**Warranty:** ARDEX L.P., Standard Limited Warranty applies. Also eligible for the ARDEX SystemOne™ Limited Warranty when used in conjunction with select HENRY® Flooring Adhesives.

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For easy-to-use ARDEX Product Calculators and Product Information On the Go, download the ARDEX App at the iTunes Store or Google Play.



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