

**ARDEX GUIDE SPECIFICATION**  
**ARDEX FEATHER FINISH®**  
**Self-Drying, Cement-Based Finish Underlayment**

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**SECTION 03 01 30**  
**Maintenance of Cast-In-Place Concrete**

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings, general provisions of the Contract, and other related construction documents such as Division 01 specifications apply to this Section

1.2 SUMMARY

- A. This Section includes a self-drying, cement-based finish underlayment that provides a smooth surface prior to the installation of floor covering over a variety of substrates.

- 1. ARDEX FEATHER FINISH® Self-Drying, Cement-Based Finish Underlayment
- 2. ARDEX P 82™ Ultra Prime
- 3. ARDEX P 51™ Primer

- B. Related Sections include the following:

- 1. Section 03 30 00, Cast-In-Place Concrete
- 2. Section 09 05 61.13 Moisture Vapor Emission Control
- 3. Division 09 Flooring Sections

1.3 REFERENCES

- A. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes
- B. ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

#### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.
- B. Qualification Data: For Installer

#### 1.5 QUALITY ASSURANCE

- A. Installation of the ARDEX product must be completed by a factory-trained applicator, such as an ARDEX LevelMaster<sup>®</sup> Elite, Choice Contractor or INSTALL Substrate Prep Certified Installer, using mixing equipment and tools approved by the manufacturer. Please contact ARDEX Engineered Cements (724) 203-5000 for a list of recommended installers.
- B. Product must be cement-based having an inorganic binder content which includes a minimum 80% Portland cement per ASTM C150: Standard Specification for Portland cement and other specialty hydraulic cements. Gypsum products are not acceptable.
- C. Manufacturer Experience: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 5 years. Contact Manufacturer Representative prior to installation.

1.6 WARRANTY: ARDEX FEATHER FINISH<sup>®</sup> installed as part of a floor system, shall be installed in conjunction with the recommended ARDEX Tile & Stone Installation Materials or WW HENRY Flooring Adhesive, as appropriate, to provide the ARDEX SystemOne 5- or 10-year comprehensive warranty, depending on the system installed.

#### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area with temperature maintained between 50° and 85° F (10° and 29° and protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.

#### 1.8 PROJECT CONDITIONS

- A. Do not install material below 50° F (10° C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX Technical Service Department.

## **PART 2 - PRODUCTS**

### **2.1 MAINTENANCE OF CAST-IN-PLACE CONCRETE**

#### **A. Self-Drying, Cement-Based Finish Underlayment**

##### **1. Acceptable Products:**

- a. **ARDEX FEATHER FINISH®**; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA, 15001, USA 724-203-5000, [www.ardexamericas.com](http://www.ardexamericas.com)

##### **i. Primer**

1. Other non-porous substrates, such as epoxy coating systems and metal: ARDEX P 82™ Ultra Prime
2. Gypsum: ARDEX P 51™ Primer

### **2.2 WATER: Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).**

## **PART 3 – EXECUTION**

### **3.1 PREPARATION**

#### **A. General: Prepare substrate in accordance with manufacturer's instructions.**

##### **1. Concrete:**

- a. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.
- b. Substrates shall be inspected in accordance with ASTM F2170 and corrected for moisture or any other conditions that could affect the performance of the underlayment or the finished floor covering. For areas where moisture vapor emissions exceed the required limits refer to Section 09 05 61.13, Moisture Vapor Emission Control and install the appropriate ARDEX Moisture Control System.

##### **2. Crack and Joint Preparation**

- a. Moving Joints – honor all moving joints and moving cracks up through the installation. A flexible sealing compound such as ARDEX ARDISEAL™ Rapid Plus Semi-Rigid Joint Sealant may be installed.

- b. Saw Cuts and Control Joints – Fill all dormant control joints and dormant cracks with ARDEX ARDIFIX™ Low Viscosity Rigid Polyurethane Crack & Joint Repair or ARDEX FEATHER FINISH® as recommended by the manufacturer.
3. Gypsum: All gypsum subfloors must be thoroughly clean and free of dirt, debris, sealers and contaminants that might act as a bond breaker. Mechanically clean if necessary using shot blasting or other.
4. Wood:
  - a. The wood subfloor must be constructed according to prevailing building codes and must be solid and securely fixed to provide a rigid base free of undue flex. Any boards exhibiting movement must be re-nailed. The surface of the wood must be clean and free of oil, grease, wax, dirt, varnish, shellac and any contaminant that might act as a bond breaker. If necessary, sand down to bare wood. A commercial drum sander can be used to sand large areas. Do not use solvents, strippers or cleaners. Vacuum all dust and debris. It is the responsibility of the installation contractor to verify that the wood subfloor is thoroughly clean and properly anchored.
  - b. Some flooring manufacturers recommend a finish-grade wood underlayment be installed over the existing wood subfloor. If necessary, ARDEX FEATHER FINISH can be used to smooth fasteners and/or joints in the wood underlayment. Please note that the wood underlayment must be suitable for the installation of the specific floor covering and must be installed in accordance with the wood underlayment manufacturer's recommendations.
5. Metal: Metal substrates must be rigid, well supported, properly anchored, and free of undue flex and vibration. They must also be clean, including the complete mechanical removal of rust, corrosion and any contaminant that may act as a bond breaker. It is the responsibility of the installation contractor to ensure that this is so. To prevent, rust from recurring, steel surfaces must be coated with an anticorrosive epoxy coating and allowed to dry thoroughly. The coating must be installed in strict accordance with the coating manufacturer's written recommendations and allowed to cure fully. Lead, copper and aluminum do not need to be coated with an anticorrosive epoxy.
6. Adhesive residues on concrete must first be tested to make certain they are not water-soluble. Water-soluble adhesives must be completely mechanically removed down to clean concrete. Non-water-soluble adhesives should be prepared to a thin, well-bonded residue using the wet-scraping technique as recommended by the Resilient Floor Covering Institute ([www.rfci.com](http://www.rfci.com)). The prepared residue should appear as nothing more than a transparent stain on the concrete after scraping.
7. Other Non-Porous Substrates: The substrate must be clean, including complete removal of existing waxes and sealers, dust, dirt, debris and any other contamination that may act as a bond breaker. Substrate preparation must be by mechanical means, such as shot blasting.

### 3.2 APPLICATION OF ARDEX FEATHER FINISH®:

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.
- C. Priming:
  - 1. Gypsum: Make an initial application of ARDEX P 51 diluted with 3 parts water using a soft push broom. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry thoroughly (1 to 3 hours) before proceeding with the second application of ARDEX P 51 diluted 1:1 with water. Allow thorough drying to a clear, thin film (min. 3 hours, max. 24 hours).
  - 2. Epoxy coating systems and metal shall be primed with ARDEX P 82 Ultra Prime. Do not leave any bare spots. Brush off puddles and excess primer. Allow primer to dry to a thin, slightly tacky film (min. 3 hours, max. 24 hours).
- D. Mixing: Comply with manufacturer's printed instructions and the following.
  - 1. Add 2 1/2 quarts (2.4 L) of clean potable water per 10-pound (4.5 kg) bag.
  - 2. Mix using a 1/2" (12 mm, 650 rpm) low speed heavy-duty mixing drill with an ARDEX T-2 ring mixing paddle. Do not overwater.
- E. Application: Comply with manufacturer's printed instructions and the following.
  - 1. ARDEX FEATHER FINISH can be installed from a true featheredge up to 1/2" (12.7 mm) over large areas. It can also be installed up to any thickness in small, well-defined areas.
  - 2. Apply the ARDEX FEATHER FINISH to the substrate with the flat side of a trowel to obtain a solid mechanical bond before applying the desired thickness.
- F. Curing
  - 1. As soon as the ARDEX FEATHER FINISH can be worked on without damaging the surface (15-20 minutes), standard floor coverings such as VCT, sheet vinyl and carpeting can be installed. If installing wood flooring, or, if high-performance adhesives will be used, such as epoxies or urethanes, ARDEX FEATHER FINISH must first cure for 16 hours.

### 3.3 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the Ardex underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

3.4 PROTECTION

- A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

**END OF SECTION**

## **ARDEX GUIDE SPECIFICATION**

### **ARDEX K 15<sup>®</sup> Premium Self-Leveling Underlayment**

A Self-Leveling Underlayment that Consists of a Blend of Portland Cements and Other Hydraulic Cements and Polymers for Interior Applications

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## **SECTION 03 54 16 HYDRAULIC CEMENT UNDERLAYMENT**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings, general provisions of the Contract, and other related construction documents such as Division 01 specifications apply to this Section

#### **1.2 SUMMARY**

- A. This Section includes a self-leveling underlayment that consists of a blend of Portland cement and other hydraulic cements and polymers that is used to level and smooth interior concrete, terrazzo, well-bonded ceramic & quarry tile, epoxy coating systems, wood, metal and properly prepared, non-water-soluble adhesive residue on concrete prior to the installation of finish flooring on all grade levels.

1. ARDEX K 15<sup>®</sup> Premium Self-Leveling Underlayment
2. ARDEX P 51<sup>™</sup> Primer
3. ARDEX P 82<sup>™</sup> Ultra Prime
4. ARDEX EP 2000<sup>™</sup> Substrate Preparation Epoxy Primer
5. ARDEX E 25<sup>™</sup> Resilient Emulsion

- B. Related Sections include the following:

1. Section 03 30 00, Cast-In-Place Concrete
2. Section 09 05 61.13, Moisture Vapor Emission Control
3. Division 09 Flooring Sections

#### **1.3 REFERENCES**

- A. ASTM C109M, Compressive Strength Air-Cure Only
- B. ASTM C348, Flexural Strength of Hydraulic-Cement Mortars

- C. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes
- D. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

#### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.
- B. Qualification Data: For Installer

#### 1.5 QUALITY ASSURANCE

- A. Installation of the ARDEX product must be completed by a factory-trained applicator, such as an ARDEX LevelMaster<sup>®</sup> Elite, Choice Contractor or INSTALL Substrate Prep Certified Installer, using mixing equipment and tools approved by the manufacturer. Contact ARDEX Engineered Cements (724) 203-5000 for a list of recommended installers.
- B. Product must have a hydraulic cement-based inorganic binder content as the primary binder which includes portland cement per ASTM C150: Standard Specification for Portland Cement and other specialty hydraulic cements. Gypsum-based products are not acceptable.
- C. Manufacturer Experience: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 10 years. Contact Manufacturer Representative prior to installation.

- 1.6 WARRANTY: ARDEX K 15<sup>®</sup> installed as part of a floor system, shall be installed in conjunction with the recommended ARDEX Tile & Stone Installation Materials or WW HENRY Flooring Adhesive, as appropriate, to provide the ARDEX SystemOne 5- or 10-year comprehensive warranty, depending on the system installed.

#### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and 29°C) and protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.



## 1.8 PROJECT CONDITIONS

- A. Do not install material below 50° F (10° C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if the substrate is warm and follow warm weather instructions available from the ARDEX Technical Service Department.

## PART 2 - PRODUCTS

### 2.1 HYDRAULIC CEMENT UNDERLAYMENT

#### A. Hydraulic Cement-based Self-Leveling Underlayment

##### 1. Acceptable Products:

- a. ARDEX K 15<sup>®</sup>; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA, 15001, USA, (724) 203-5000, [www.ardexamericas.com](http://www.ardexamericas.com)

##### i. Primer:

- 1. Standard Absorbent Concrete: ARDEX P 51<sup>™</sup> Primer
- 2. Extremely Absorbent Concrete: May require two applications of ARDEX P 51<sup>™</sup> to minimize the potential for pinholes forming in the ARDEX K 15.
- 3. Wood: ARDEX P 82<sup>™</sup> Ultra Prime
- 4. Metal: ARDEX EP 2000<sup>™</sup> Substrate Preparation Epoxy Primer
- 5. Other Non-Porous Substrates (burnished concrete, terrazzo, well-bonded ceramic, quarry and porcelain tiles, epoxy coating systems and non-water soluble adhesive residue on concrete and concrete treated with silicate compounds): ARDEX P 82<sup>™</sup> Ultra Prime

- ii. Performance and Physical Properties: Meet or exceed the following values for material cured at 73° F+/-3°F (23° C+/-3°C) and 50% +/-5% relative humidity:

- 1. Application: Barrel Mix or Pump
- 2. Flow Time: 10 minutes
- 3. Walkable: 2 to 3 hours
- 4. Compressive Strength: 5,500 psi (385 kg/cm<sup>2</sup>) at 28 days, ASTM C109M.
- 5. Flexural Strength: 1,200 psi (84 kg/cm<sup>2</sup>) at 28 days, ASTM C348.
- 6. VOC: 0

2.2 WATER: Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

### **PART 3 – EXECUTION**

#### **3.1 PREPARATION**

A. General: Prepare substrate in accordance with manufacturer's instructions.

1. Concrete:

- a. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.
- b. Substrates shall be inspected in accordance with ASTM F2170 and corrected for moisture or any other conditions that could affect the performance of the underlayment or the finished floor covering. For areas where moisture vapor emissions exceed the required limits refer to Section 09 05 61.13, Moisture Vapor Emission Control and install the appropriate ARDEX Moisture Control System.

B. Crack and Joint Preparation:

1. Moving Joints and Moving Cracks – honor all expansion, isolation joints and moving cracks up through the underlayment. A flexible sealing compound such as ARDEX ARDISEAL™ Rapid Plus Semi-Rigid Joint Sealant may be installed.
2. Saw Cuts, Dormant Control Joints and Dormant Cracks – fill all dormant control joints and dormant cracks with ARDEX ARDIFIX™ Low Viscosity Rigid Polyurethane Crack & Joint Repair or ARDEX FEATHER FINISH® Self-Drying, Cement-Based Finish Underlayment as recommended by the manufacturer.

C. Wooden subfloors: The wood subfloor either must be solid hardwood flooring; a minimum of ¾" (19 mm) tongue-and-groove, APA-rated Type 1, exterior exposure plywood; or an approved OSB equivalent. The wood subfloor must be constructed according to prevailing building codes and must be solid and securely fixed to provide a rigid base free of undue flex. Any boards exhibiting movement must be refastened to create a sound, solid subfloor. The wood must be clean and free of all foreign matter. If necessary, sand down to bare wood. Vacuum to remove all dust. Do not use solvent, strippers or cleaners. Open joints should be filled with ARDEX FEATHER FINISH®. It is the responsibility of the installation contractor to ensure that the wood subfloor is thoroughly clean and properly anchored prior to the installation of any ARDEX material.

D. Metal subfloors:

1. Metal subfloors must be rigid, well supported, properly anchored and free of undue flex and vibration. They must also be clean and free of all rust, corrosion and foreign matter.
2. Non-lead metal substrates must be mechanically cleaned and profiled to create a bonding surface. Please note that care must be taken when mechanically preparing thin metal foils so that the metal foil is not compromised. Use an #80 or #100 grit sanding screen to mechanically profile the metal surface. A hand or floor sander may be used. After sanding, thoroughly sweep and deep vacuum to remove all loose material, and then wipe the metal using a clean, white cloth dampened with 91% isopropyl alcohol. Repeat wiping using a new cloth on each pass until the degree of discoloration on the cloth remains consistent on subsequent passes (typically, approx. 5 – 7 passes). Lightly shot blasting also is suitable. From this point until the metal has been primed, disposable shoe covers should be worn by anyone traversing the surface of the prepared metal. Allow 15 – 20 minutes for residual alcohol to evaporate before proceeding. Contact the Technical Service Department for guidelines on preparing lead substrates.

E. Adhesive residues on concrete must first be tested to make certain they are not water-soluble. Water-soluble adhesives must be completely mechanically removed down to clean concrete. Non-water-soluble adhesives should be prepared to a thin, well-bonded residue using the wet-scraping technique as recommended by the Resilient Floor Covering Institute ([www.rfci.com](http://www.rfci.com)). The prepared residue should appear as nothing more than a transparent stain on the concrete after scraping.

F. Non-porous subfloors such as ceramic, porcelain and quarry tile, burnished concrete, epoxy coating systems as well as terrazzo should be clean and free of all waxes, sealers, dust, dirt, debris and any other contaminant that may act as a bond breaker. If necessary, clean by mechanical methods such as shot blasting.

3.2 APPLICATION OF ARDEX K 15<sup>®</sup>

A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.

B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.

C. Priming:

1. Primer for standard absorbent concrete subfloors: Dilute ARDEX P 51 1:1 with water and apply evenly with a soft push broom. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry to a clear, thin film (min. 3 hours, max. 24 hours). Underlayment shall not be applied until the primer is dry.

2. Primer for extremely absorbent concrete subfloors: Make an initial application of ARDEX P 51 mixed with 3 parts water using a soft push broom. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry thoroughly (1 to 3 hours) before proceeding with the standard application of primer as described above for standard absorbent concrete.
3. Primer for non-porous subfloors such as burnished concrete, terrazzo, well-bonded ceramic, porcelain and quarry tile, epoxy coating systems, wooden subfloors and non-water soluble adhesive residues over concrete: Prime with ARDEX P 82 Ultra Prime. Follow the mixing instructions on the container and apply with a short-nap or sponge paint roller, leaving a thin coat of primer no heavier than a coat of paint. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry to a clear, slightly tacky film (minimum 3 hours, maximum 24 hours). Underlayment shall not be installed until primer is dry. Note: If a suitable acrylic curing compound has been used on the concrete, test the surface for porosity. If the concrete is porous, prime with ARDEX P 51. If it is non-porous, prime with ARDEX P 82. For wood substrates, once the primer is applied, install 3.4 galvanized, expanded diamond metal lath mesh, stapling approximately every 6 inches (15.2 cm). Do not walk on wet primer.
4. Primer for metal substrates: Prime the prepared subfloor with ARDEX EP 2000 and immediately broadcast fine sand to refusal into the fresh epoxy. After a 16-hour cure remove all excess sand. Thoroughly sweep and vacuum to ensure all loose sand is removed.

D. Mixing: Comply with manufacturer's printed instructions and the following.

1. Add 7 quarts (6.6 L) of clean potable water per 55 lb. (25 kg) bag. For applications over wood and metal, the addition of ARDEX E 25™ Resilient Emulsion is required to increase the resiliency of the ARDEX K 15. In these cases, mix 2 quarts (1.9 L) of ARDEX E 25 with 6 quarts (5.68 L) of water for each bag of ARDEX K 15.
2. Mix using a ½" (12 mm) heavy-duty drill (min. 650 rpm) with an ARDEX T-1 mixing paddle. Do not overwater.
3. Aggregate mix: For areas to be installed over 1 ½" (4 cm) thick, aggregate may be added to reduce material costs. Mix ARDEX K 15® with water first, then add 1 part aggregate by volume of washed, well-graded 1/8" to 3/8" (3 to 9.5 mm) pea gravel. The aggregate size must not exceed 1/3 the depth of the pour. Do not use sand. Note: 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, and then prime this layer with ARDEX P 51 mixed 1: 1 with water. Allow the primer to dry (min. 3 hours, max. 24 hours) before installing the neat coat of ARDEX K 15.
4. For pump installations, ARDEX K 15® shall be mixed using the ARDEX ARDIFLO™ Automatic Mixing Pumps. Contact the ARDEX Technical Service Department (888) 512-7339 for complete pump operation instructions.

E. Application: Comply with manufacturer's printed instructions and the following:

1. Installations over metal and other non-porous substrates should be limited to a thickness of 1/2" (12.7 mm) unless otherwise approved by the ARDEX Technical Services Department. For all other substrates, ARDEX K 15<sup>®</sup> must be installed at a minimum thickness of 1/8" (3 mm) over the highest point in the floor, which typically results in an average thickness of 1/4" (6 mm) or more over the entire floor. ARDEX K 15<sup>®</sup> can be installed up to 1 1/2" (4 cm) over large areas neat, and up to 5" (12.7 cm) with the addition of proper aggregate. ARDEX K 15<sup>®</sup> can also be featheredged to match existing elevations. If a true featheredge is needed, ARDEX recommends using ARDEX FEATHER FINISH<sup>®</sup> for transitions.
2. Pour or pump the liquid ARDEX K 15<sup>®</sup> and spread into place with the ARDEX T-4 Spreader. Immediately use the ARDEX T-5 Smoother to smooth the surface. Wear non-metallic cleats to avoid leaving marks in the liquid ARDEX K 15<sup>®</sup>.
3. Wood subfloors require the use of the mesh-reinforced ARDEX K 15<sup>®</sup> + E 25<sup>™</sup> Resilient Emulsion Underlayment System. After priming, install 3.4 galvanized diamond metal lath by stapling to the wooden subfloor approximately every 6 inches to center.
4. Metal subfloors require the use ARDEX K 15<sup>®</sup> + E 25<sup>™</sup> Resilient Emulsion Underlayment System.

F. Curing

1. ARDEX K 15<sup>®</sup> can be walked on in 2-3 hours. Moisture-insensitive tiles such as ceramic, quarry and porcelain can be installed after 6 hours. All other finish floor coverings can be installed after 16 hours at 70°F (21°C). For resinous systems such as epoxy and polyurethane floors please contact the ARDEX Technical Services Department.

### 3.3 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the ARDEX underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

### 3.4 PROTECTION

- A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

**END OF SECTION**

**ARDEX GUIDE SPECIFICATION**  
**ARDEX SD-P® Self-Drying, Trowelable Concrete Underlayment**

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**SECTION 03 01 30**  
**Maintenance of Cast-In-Place Concrete**

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings, general provisions of the Contract, and other related construction documents such as Division 01 specifications apply to this Section

1.2 SUMMARY

- A. This Section includes a fast setting patch for smoothing and repairing indoor concrete floors, ramps and stairways, as well as non-porous substrates such as terrazzo, ceramic and quarry tile, prior to the installation of floor covering.

- 1. ARDEX SD-P® Self-Drying, Trowelable Concrete Underlayment
- 2. ARDEX P 82™ Ultra Prime
- 3. ARDEX P 51™ Primer

- B. Related Sections include the following:

- 1. Section 03 30 00, Cast-In-Place Concrete
- 2. Section 09 05 61.13 Moisture Vapor Emission Control
- 3. Division 09 Flooring Sections

1.3 REFERENCES

- A. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes
- B. ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

#### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.
- B. Qualification Data: For Installer

#### 1.5 QUALITY ASSURANCE

- A. Installation of the ARDEX product must be completed by a factory-trained applicator, such as an ARDEX LevelMaster<sup>®</sup> Elite, Choice Contractor or INSTALL Substrate Prep Certified Installer, using mixing equipment and tools approved by the manufacturer. Please contact ARDEX Engineered Cements (724) 203-5000 for a list of recommended installers.
- B. Product must be cement-based having an inorganic binder content which includes a minimum 80% Portland cement per ASTM C150: Standard Specification for Portland cement and other specialty hydraulic cements. Gypsum products are not acceptable.
- C. Manufacturer Experience: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 5 years. Contact Manufacturer Representative prior to installation.

1.6 WARRANTY: ARDEX SD-P<sup>®</sup> installed as part of a floor system, shall be installed in conjunction with the recommended ARDEX Tile & Stone Installation Materials or WW HENRY Flooring Adhesive, as appropriate, to provide the ARDEX SystemOne 5- or 10-year comprehensive warranty, depending on the system installed.

#### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and 29°C) and protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.

#### 1.8 PROJECT CONDITIONS

- A. Do not install material below 50°F (10°C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX Technical Service Department.

## **PART 2 - PRODUCTS**

### **2.1 MAINTENANCE OF CAST-IN-PLACE CONCRETE**

#### **A. Self-Drying, Trowelable Concrete Underlayment**

##### **1. Acceptable Products:**

a. ARDEX SD-P®; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA, 15001, USA 724-203-5000, [www.ardexamericas.com](http://www.ardexamericas.com)

##### **i. Primer**

1. Other non-porous substrates, such as burnished concrete, epoxy coating systems, terrazzo, ceramic, quarry and porcelain tiles, concrete treated with silicate compounds: ARDEX P 82™ Ultra Prime

2. Porous concrete: ARDEX P 51™ Primer (not required)

2.2 **WATER:** Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

## **PART 3 – EXECUTION**

### **3.1 PREPARATION**

#### **A. General: Prepare substrate in accordance with manufacturer's instructions.**

##### **1. Concrete:**

a. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.

b. Substrates shall be inspected in accordance with ASTM F2170 and corrected for moisture or any other conditions that could affect the performance of the underlayment or the finished floor covering. For areas where moisture vapor emissions exceed the required limits refer to Section 09 05 61.13, Moisture Vapor Emission Control and install the appropriate ARDEX Moisture Control System.

##### **2. Crack and Joint Preparation**

a. Moving Joints – honor all moving joints and moving cracks up through the installation. A flexible sealing compound such as ARDEX ARDISEAL™ Rapid Plus Semi-Rigid Joint Sealant may be installed.



- b. Saw Cuts and Control Joints – Fill all dormant control joints and dormant cracks with ARDEX ARDIFIX™ Low Viscosity Rigid Polyurethane Crack & Joint Repair or ARDEX FEATHER FINISH® as recommended by the manufacturer.
3. Other Non-Porous Substrates: The substrate must be clean, including complete removal of existing waxes and sealers, dust, dirt, debris and any other contamination that may act as a bond breaker. Substrate preparation must be by mechanical means, such as shot blasting.

### 3.2 APPLICATION OF ARDEX SD-P®:

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.
- C. Priming:
  1. Porous concrete: While no primer is required to obtain a solid bond when installing ARDEX SD-P over concrete, ARDEX P 51 can be used to prime a properly prepared concrete substrate prior to installing ARDEX SD-P. The use of ARDEX P 51 will improve the workability of the product, prevent it from drying out too fast, and help ensure that any residual dust on the surface of the concrete will be bound up so that it will not interfere with the bond. For this application, mix ARDEX P 51 with an equal part of water, and prime the properly prepared concrete surface using a soft bristle push broom. Once the primer has dried (min. 3 hours, max. 24 hours), install the ARDEX SD-P as outlined below.
  2. Burnished concrete, epoxy coating systems, terrazzo, ceramic, quarry and porcelain tiles, concrete treated with silicate compounds shall be primed with ARDEX P 82. Do not leave any bare spots. Brush off puddles and excess primer. Allow primer to dry to a thin, slightly tacky film (min. 3 hours, max. 24 hours).
- D. Mixing: Comply with manufacturer's printed instructions and the following.
  1. Add 4 quarts (3.8 L) of clean potable water per 40-pound (18 kg) bag.
  2. Mix using a ½" (12 mm, 650 rpm) low speed heavy-duty mixing drill with an ARDEX T-2 ring mixing paddle. Do not overwater.
- E. Application: Comply with manufacturer's printed instructions and the following.
  1. ARDEX SD-P can be installed from a true featheredge up to 1" (25.4 mm) over large areas neat and up to 3" (7.6 cm) with the addition of proper aggregate. ARDEX SD-P can also be featheredged to match existing elevations. There is no minimum thickness requirement for this product. Use the least amount possible to attain the desired smoothness. The

thickness of the application should be calculated based on the surface profile of the substrate and the specified tolerances of the floor covering.

2. For areas with a thickness greater than 1" (25.4 mm), mix ARDEX SD-P with washed and well-graded  $\frac{1}{8}$ " –  $\frac{1}{4}$ " (3 – 6 mm) pea gravel. Mix the ARDEX SD-P with water first, and then add 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.
3. Apply the ARDEX SD-P to the substrate with a wood or magnesium float to obtain a solid mechanical bond. Allow the material to take set (approx. 30 minutes) then finish the surface using a steel trowel.

#### F. Curing

1. As soon as the ARDEX SD-P can be worked on without damaging the surface (approx. 90 minutes), standard floor coverings such as ceramic tile, VCT, sheet vinyl and carpeting can be installed. If installing wood flooring, or, if high-performance adhesives will be used, such as epoxies or urethanes, ARDEX SD-P must first cure for 16 hours.

### 3.3 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the ARDEX underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

### 3.4 PROTECTION

- A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

**END OF SECTION**