

SECTION 09 60 00

Formatted Specification for
ARDEX & W.W. HENRY SystemOne™ Flooring Installations

PART I – GENERAL

1.01 SUMMARY

- A. This is the recommended specification for installing carpet, vinyl-backed carpet tile, vinyl sheet, plank and tile, vinyl composition tile, and wood to qualify for the ARDEX & W.W. HENRY SystemOne™ 10-year warranty.
- B. Complete installation and warranty details are available at www.ardex.com and www.wwhenry.com.

1.02 SECTION INCLUDES

- A. ARDEX MC™ Moisture Control Systems (MC™ RAPID, MC™ PLUS or MC™ ULTRA).
- B. Self-Leveling Compounds
 - 1. ARDEX K 15® Self-Leveling Underlayment Concrete
 - 2. ARDEX K 55™ MICROTEC® Premium High-Flow, Self-Leveling Underlayment
 - 3. ARDEX K 55™ RAPID Premium High-Flow, Self-Drying, Self-Leveling Underlayment
 - 4. ARDEX LU 100™ Self-Leveling Flooring Underlayment
 - 5. ARDEX GS-4™ Self-Leveling Underlayment for Distressed Gypsum and Wood Floors
- C. Primers
 - 1. ARDEX P 51™ Primer
 - 2. ARDEX P 82™ Ultra Prime
- D. ARDEX E 25 Resilient Emulsion
- E. Patching Compounds
 - 1. ARDEX SD-P® Self-Drying, Fast Setting Concrete Underlayment Patch
 - 2. ARDEX FEATHER FINISH® Self-Drying Cement-Based Finishing Underlayment
 - 3. ARDEX FORTIFINISH™ Self-Drying, Reinforced Cement-Based Finishing Underlayment
- F. Carpet Adhesives
 - 1. HENRY 451 MasterPro™ High-Performance Wet-Set Carpet Adhesive
 - 2. HENRY 351 FastPro™ Fast Grab Carpet Adhesive
 - 3. HENRY 391
- G. Vinyl tile/plank and sheet adhesives
 - 1. HENRY 630 PeachPro™ Pressure Sensitive Flooring Adhesive
 - 2. HENRY 640 GL
 - 3. HENRY 422 Premium Vinyl Flooring Adhesive
- H. Wood Adhesives
 - 1. HENRY 1171N
 - 2. HENRY 971

- I. HENRY 430GL ClearPro™ Clear Thin Spread Floor Tile Adhesive
- J. HENRY 356C MultiPro™ Premium Multipurpose Flooring Adhesive
- K. HENRY 482 Premium Linoleum Adhesive
- L. HENRY 248 SeamPro™ Seam Adhesive

1.03 QUALITY ASSURANCE

- A. Installation of the ARDEX and/or HENRY products must be by a qualified, factory-trained applicator, such as an ARDEX LevelMaster Elite® or SystemOne™ Installer using mixing equipment and tools approved by the manufacturer. Please contact ARDEX, L.P. at (888) 512-7339 for a complete list of local Installers.
- B. Manufacturer of the underlayment and adhesive shall provide individual product specification sheets and technical data to include installation instructions for each of the products used in the SystemOne flooring installation.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in their unopened packages. Recommended storage temperature is below 90°F. Protect powders from moisture. Protect liquids from freezing.

1.05 SITE CONDITIONS

- A. ARDEX underlayments are cementitious materials. Observe the basic rules of concrete work. Do not install below 50°F surface temperature. Install quickly if floor is warm and follow hot weather precautions available from the ARDEX Technical Service Department. Never mix with cement or additives other than ARDEX-approved products.
- B. All HENRY adhesives shall be installed in areas where the substrate, adhesive, and floor covering have been acclimated to 65°F or above for 48 hours before, during and after the installation or longer if recommended by the specific flooring manufacturer.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. The 100% solids epoxy moisture remediation system shall be an ARDEX MC Moisture Control System (MC RAPID, MC PLUS or MC ULTRA).
- B. The hydraulic cement-based self-leveling underlayment for use on all grade levels shall be ARDEX K 15, K 55 MICROTEC or ARDEX K 55 RAPID.
- C. The gypsum/hydraulic cement-based self-leveling underlayment for use on above-grade applications shall be ARDEX LU 100.
- D. The gypsum/hydraulic cement-based self-leveling underlayment for use over distressed gypsum and wood subfloors shall be ARDEX GS-4.
- E. Primer for standard absorbent concrete and for over wood when using ARDEX GS-4 shall be ARDEX P 51 Primer.
- F. Primer for non-porous subfloors, cutback and other adhesive residues, metal, and wood subfloors shall be ARDEX P 82 Ultra Prime.

- G. The additive to be mixed with ARDEX K 15 when used over cutback adhesive or metal subfloors shall be ARDEX E 25 Resilient Emulsion.
- H. Aggregate shall be well graded, washed gravel (1/8" to 1/4" or larger) for use when applicable underlayment is installed over 1 1/2" thick.
- I. The hydraulic cement-based self-drying trowel grade underlayment for flash patching and skim coating shall be ARDEX FEATHER FINISH.
- J. The hydraulic cement-based self-drying trowel grade underlayment for repairing substrates and ramping shall be ARDEX SD-P Patch.
- K. The hydraulic cement-based self drying trowel grade underlayment for flash patching and skim coating in hospital and other heavy traffic areas under resilient flooring shall be ARDEX FORTIFINISH.
- L. Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).
- M. Adhesive for VCT shall be HENRY 430GL ClearPro Vinyl Composition Tile Adhesive.
- N. Adhesive for vinyl-backed carpet tile shall be HENRY 630 PeachPro or HENRY 640 VinylPro
- O. Adhesive for commercial and residential felt-backed sheet flooring and indoor/outdoor carpet (indoor installations only) shall be HENRY 356 MultiPro
- P. Adhesive for solid vinyl tile, strip or plank, homogeneous and vinyl-backed sheet, and vinyl-backed carpet shall be HENRY 422 Premium Vinyl Flooring Adhesive or HENRY 640 Vinyl Pro.
- Q. Adhesive for sealing carpet seams shall be HENRY 248 SeamPro.
- R. Adhesive for linoleum sheet flooring or tile shall be HENRY 482 Premium Linoleum Adhesive or HENRY 356 MultiPro.
- S. Adhesive for cork sheet flooring shall be HENRY 356 MultiPro.
- T. Adhesive for jute-backed, ActionBac, urethane foam-backed, non-backed needle punched, and latex foam rubber-backed, unitary, unitary ActionBac®, hot-melt, woven, and urethane laminate carpet shall be HENRY 391, HENRY 351 FastPro, and HENRY 451 MasterPro,
- U. Seam sealer for all of the carpet types mentioned above shall be HENRY 248 SeamPro.

2.02 MIX DESIGNS

- A. ARDEX K 15
 - 1. Standard mixing ratio: ARDEX K 15 is mixed in 2-bag batches at one time. Mix each bag of ARDEX K 15 (55 lb.) with 7 quarts of water. Product shall be mixed in an ARDEX T-10 Mixing Drum using an ARDEX T-1 Mixing Paddle and a 1/2" heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 2-3 minutes to obtain a lump-free mixture. Follow written instructions per the ARDEX K-15 bag label.
 - 2. Resilient mix for applications over cutback and non-water soluble adhesive residues and metal: Use 6 qt. of water and 2 qt. of ARDEX E 25 Resilient Emulsion for each bag of ARDEX K 15.

- B. K 55 MICROTEC - Standard mixing ratio: ARDEX K 55 MICROTEC is mixed in 2-bag batches at one time. Mix each bag of ARDEX K 55 (50 lb.) with 6 3/8 quarts (6 liters) of water. Product shall be mixed in an ARDEX T-10 Mixing Drum using an ARDEX T-1 Mixing Paddle and a 1/2" heavy-duty drill (12 mm, min. 650 rpm). Pour the water into the mixing drum first, and then add each bag of ARDEX K 55. Mix thoroughly for approximately 2-3 minutes to obtain a lump-free mixture. DO NOT OVERWATER! Follow written instructions per the ARDEX K 55 MICROTEC bag label.
- C. K 55 RAPID - Standard mixing ratio: ARDEX K 55 RAPID is mixed in 2-bag batches at one time. Mix each bag of ARDEX K 55 (50 lb.) with 6 7/8 quarts (6.5 liters) of water. Product shall be mixed in an ARDEX T-10 Mixing Drum using an ARDEX T-1 Mixing Paddle and a 1/2" heavy-duty drill (12 mm, min. 650 rpm). Pour the water into the mixing drum first, and then add each bag of ARDEX K 55. Mix thoroughly for approximately 2-3 minutes to obtain a lump-free mixture. DO NOT OVERWATER! Follow written instructions per the ARDEX K 55 RAPID bag label.
- D. ARDEX LU-100 is mixed in 2-bag batches at one time. Mix each bag of ARDEX LU-100 (50 lb.) with 4 quarts of water. Product shall be mixed in an ARDEX T-10 Mixing Drum using an ARDEX T-1 Mixing Paddle and a 1/2" heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 4-5 minutes to obtain a lump-free mixture. Follow written instructions per the ARDEX LU-100 bag label.
- E. ARDEX GS-4 is mixed in 2-bag batches at one time. Mix each bag of ARDEX GS-4 (50 lb.) with 4 quarts of water. Product shall be mixed in an ARDEX T-10 Mixing Drum using an ARDEX T-1 Mixing Paddle and a 1/2" heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 4-5 minutes to obtain a lump-free mixture. Follow written instructions per the ARDEX LU-100 bag label.
- F. Aggregate mix for applicable products: For areas to be installed over 1 1/2" thick, adding aggregate will reduce material costs. Mix the leveling compound with water as described above first, then add from 1/3 up to 1 part by volume of aggregate (1/8" to 1/4" or larger). Do not use sand. Allow this layer to dry overnight and then prime this surface with ARDEX P 51 Primer and install a neat coat of the leveling compound to obtain a smooth surface.
- G. For pump installations using applicable products, the leveling compound shall be mixed using the ARDEX Levelcraft Automatic Mixing Pump. Start the pump at the prescribed water setting in gallons per hour and then adjust to the minimum water reading that still 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. If settling is occurring, reduce the water amount and recheck. Conditions during the installation, such as variations in water, powder, substrate, and ambient temperature, require that the water setting be monitored and adjusted carefully to avoid over watering.
- H. ARDEX SD-P - Mix 1 bag of ARDEX SD-P (40 lbs.) with 4 quarts of water. Product can be mixed in a clean 5-gallon pail using ARDEX T-2 Mixing Paddle and a 1/2" heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 2-3 minutes to obtain a lump-free mixture. Follow written installation instructions per ARDEX SD-P bag label.
- I. ARDEX FEATHER FINISH - The recommended mixing ratio is 2 parts powder to 1 part water by volume. Mix the ARDEX FEATHER FINISH powder with water to the desired trowelable consistency using a margin trowel or an ARDEX T-2 paddle and drill.

- J. ARDEX FORTIFINISH - The recommended mixing ratio is 3 1/2 parts powder to 1 part water by volume. Mix the ARDEX FORTIFINISH powder with water to the desired trowelable consistency using a margin trowel or an ARDEX T-2 paddle and drill.
- K. No modifications shall ever be made to HENRY adhesives.

PART 3 – EXECUTION

3.01 PREPARATION

- A. All subfloors must be sound, solid, and clean. Asphalt, coal tar, and lightweight insulating concrete are not suitable substrates to receive Ardex underlayments under this specification.
 - 1. All concrete subfloors must be of adequate strength, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bondbreaker before priming. Mechanically clean if necessary using shot blasting or other method. Acid etching and the use of sweeping compounds and solvents are not acceptable.
 - 2. Wood subfloors must be clean and free of all foreign matter. Sand to bare wood then vacuum to remove all dust. Re-nail any loose boards exhibiting movement.
 - 3. Metal subfloors must be clean and free of all rust and foreign matter. Where required, a corrosive resistant coating should be applied and allowed to dry before priming.
 - 4. Cutback and other non-water soluble adhesive residues must be wet scraped to a thin, well-bonded layer.
 - 5. Non-porous subfloors such as ceramic and quarry tile as well as terrazzo should be clean and free of all waxes and sealers. If necessary, have the surface professionally cleaned.
 - 6. All cracks in the subfloor shall be repaired to minimize telegraphing through the underlayment.
 - 7. Moisture in Concrete: Substrates shall be inspected and corrected for moisture or any other conditions that could affect the performance of the underlayment or the finished floor covering. ARDEX underlayments are intended for interior use over dry substrates only. Follow the directives of the floor covering manufacturer regarding the maximum allowable substrate moisture content and test the substrate prior to installing the ARDEX underlayments. Where the substrate moisture exceeds the maximum allowed, ARDEX recommends the use of ARDEX Moisture Control Systems.
 - 8. More detailed information on substrate preparation is provided in the ARDEX Substrate Preparation Brochure available at www.ardex.com.
- B. JOINT PREPARATION
 - 1. Moving Joints – All existing expansion joints, isolation joints and construction joints, as well as any moving cracks, must be honored up through the underlayment and flooring..
 - 2. Saw Cuts, Control Joints and dormant cracks – fill all non-moving joints with ARDEX FEATHER FINISH, ARDEX FORTIFINISH, or ARDEX SD-P as required.

C. PRIMING

1. Primer for applications of self-leveling compounds over standard absorbent concrete subfloors: Mix 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. Primer coverage is approximately 400 to 600 sq. ft. per gallon.
2. Primer for applications of self-leveling compounds over 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 (minimum of 3 hours) before proceeding with the standard application of primer as described above for standard absorbent concrete.
3. Primer for applications of ARDEX SD-P over non-porous subfloors, and for applications of self-leveling compounds over non-porous subfloors such as epoxy or concrete terrazzo, ceramic tile, and cutback and other non-water soluble adhesive residues over concrete: Prime with ARDEX P 82. Mix Part A (red) with Part B (white) and apply with a short-nap or sponge paint roller, leaving a thin coat of primer no heavier than a thin coat of paint. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry to a clear, slightly tack film (minimum 3 hours, maximum 24 hours). Underlayment shall not be installed until primer is dry. Primer coverage is approximately 200 to 400 square feet per gallon.
4. Minimum drying time for ARDEX P 82 over cutback adhesive is 18 hours.
5. Steel subfloors require that the substrate first be primed with an anti-corrosive paint. After thorough drying of the paint, prime this surface with ARDEX P 82.
6. Primer for applications of ARDEX GS-4 over wood subfloors is ARDEX P 51 used at full strength. Do not dilute.
7. No primer is required prior to installing ARDEX SD-P over standard absorbent concrete or for any recommended application of ARDEX FEATHER FINISH or ARDEX FORTIFINISH.

3.02 APPLICATION OF ARDEX Self-Leveling Compounds

- A. INSTALLATION - Pour or pump the liquid leveling compound onto the prepared surface and spread in place with the ARDEX T-4 Spreader. Use the ARDEX T-5 Smoother for featheredge and touch-up. Wear baseball shoes with non-metallic cleats to avoid leaving marks in the liquid ARDEX K 15. Underlayment can be walked on in 2-3 hours at 70°F.
- B. DRYING TIME
 1. ARDEX K 15 and ARDEX K 55 MICROTEC can accept finish floor covering materials after 16 hours at 70°F and 50% relative humidity.
 2. ARDEX K 55 RAPID can accept finish floor covering materials after 2 hours at 70°F and 50% relative humidity.
 3. ARDEX LU-100 and ARDEX GS-4 usually require a minimum drying time of 2 days at 70°F and 50% relative humidity. Do a "mat" test to confirm dryness before proceeding with the floor installation.

APPLICATION OF ARDEX Trowel-grade compounds

A. INSTALLATION

1. When skim coating or flash patching, use a standard steel trowel to smooth the compound into the prepared surface.
2. For deeper applications, it may be necessary to use a wood or magnesium float to avoid forming blisters in the patching material. When underlayment begins to harden, finish with a steel trowel.

B. DRYING TIME

1. When the finished underlayment can be worked on without adversely affecting the surface, proceed with the installation of floor covering. The surface of the underlayment does not have to be dry to receive ceramic tile, carpet, or vinyl floor coverings. It only needs to be hard enough to permit application of the adhesive with a notched trowel without marking the surface. Typical times range from as little as 30 minutes up to an hour depending upon ambient conditions.
2. All other floor coverings require a minimum of 16 hours of drying time at 70°F and 50% relative humidity.

3.03 PREPARATION FOR FLOORING INSTALLATION

- A. Underlayment can accept finish floor covering materials after drying times specified above.
- B. The surface of the underlayment shall be checked to ensure that it meets the flooring manufacturer's specifications for flatness, and that it is free of surface blemishes that would affect the flooring before beginning the flooring installation. Areas out of tolerance shall be repaired using the appropriate ARDEX underlayment as required.
- C. Due to the wide range of adhesives that are used to install floor coverings, some adhesives may dry more quickly over cementitious underlayments than over other substrates. If this condition occurs, priming the surface of the underlayment with HENRY 336 or ARDEX P 51 diluted 1:3 with water will even out the drying of the adhesive. Allow the primer to dry 1-3 hours before proceeding with the adhesive installation.
- D. Install the adhesive in strict accordance with the written instructions provided in the HENRY Adhesive Product Specification Sheet found at www.wwhenry.com and in general accordance with the flooring manufacturer's written recommendations. Installation shall proceed under the guidelines for use of the product over absorbent concrete and for the specific floor covering to be installed to include proper trowel notch size, open times, procedures for rolling the flooring where applicable, and how long before the flooring can be cleaned or put into full service.

3.04 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the ARDEX underlayments 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.

- B. Where specified, field sampling of the adhesive shall consist of taking an unopened container of the adhesive to an independent testing laboratory, and testing in strict accordance with the procedures and methods as detailed by the manufacturer.

3.05 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.
- B. Protect the finish flooring in accordance with the recommendations of the adhesive manufacturer and the specific directives of the floor-covering manufacturer.

END OF SECTION