AHEC Tivoli Fit 2 More Classrooms
Project # PN 17-260488
at Tivoli Stars Theater.

Thursday November 16, 2017
ADDENDUM 3

The following Addendum is issued to modify the contract documents dated 09-29-2017 including the drawings and specifications. Please contact the architect upon receipt of this addendum.

Addendum consists of these written pages. It is the contractor’s responsibility to confirm that all aspects of the addendum have been received.

Part I: Response to Questions and Owner Comments

1. N/A

Part II: Additional Information and Drawing Clarifications

1. On Sheet A2.2 under the finishes: Concrete Sealer: the concrete floor preparation CONC1 identifies that the moisture control product Ardex – MC Ultra be installed. This product is to be changed to Ardex VR 98, see attached. The use of this product for the direct application of carpet tile will require the use of Select Henry Adhesives per the attached Ardex Technical Update. Bead blasting of the concrete floor should not be required with these products. Protect the concrete floor after pour to keep clean.

2. On Sheet A2.2 under the finishes: Concrete Sealer: the concrete floor preparation CONC2 identifies that the moisture control product Ardex - MC Rapid be installed. This product is to be removed from the project.

3. On Sheet A2.2 under the finishes: Concrete Sealer: the concrete floor preparation CONC3 identifies that the epoxy paint, Bher Premium #902 be installed. This product is to be removed from the project. Room 139G will have a bare concrete floor finish.

END OF ADDENDUM 3
ARDEX VR 98™
Fast-Track, One-Component Moisture Vapor Retarder

Reduces moisture vapor emissions in concrete to acceptable levels for floor coverings
For RH readings up to 98%
For absorbent concrete
No minimum profile required
No priming required
Fast drying - install ARDEX underlayments in as little as 2 hours after applying the second coat
One-component system
Ready for use*, resealable and reuseable
Easy to use and apply
Water-based
ARDEX VR 98™
Fast-Track, One-Component Moisture Vapor Retarder

Description
ARDEX VR 98™ is a ready-to-use, one-component, water-based, two-coat system formulated to suppress residual moisture in concrete with RH readings up to 98%. ARDEX underlayments may be installed over the second coat in as little as 2 hours without priming. ARDEX VR 98 comes in a ready-to-use, resealable container. It is pigmented blue to help indicate uniform coverage for ease of application.

Moisture Testing
Prior to beginning the installation, measure the relative humidity within the concrete in accordance with ASTM F2170. When installed in accordance with our written recommendations, ARDEX VR 98 is suitable for moisture levels up to 98% RH. For moisture levels greater than 95% RH, the installation space must be enclosed and acclimated with the HVAC system running, and the ambient humidity must not exceed 60%.

For all installations of ARDEX VR 98, if the slab is on or below grade, an effective and intact vapor retarder must be placed directly below the concrete in conformance with ASTM E1745. The surface of the concrete must be completely dry at the time the ARDEX VR 98 is installed. Verify concrete surface dryness by mat testing in conformance with ASTM D4263. The test must be conducted for at least 4 hours, which is the time required for ARDEX VR 98 to be set sufficiently. To ensure that condensation does not form, it is extremely important to check the surface temperature of the concrete just prior to installation to verify that this temperature is at least 5°F (3°C) higher than the dew point for the given temperature and humidity in the space and rising. For example, if the dew point temperature in the space is 60°F (16°C), the slab temperature must be 65°F (19°C) or higher and rising.

Substrate Preparation
All concrete substrates must be structurally sound and solid, surface dry and thoroughly clean and free of all dust, dirt, oil, grease, wax, asphalt, paint, latex compounds, curing and sealing compounds, form release and any contaminant that could act as a bond breaker. In order for the ARDEX VR 98 to obtain a solid bond, the concrete must be clean and absorbent. If necessary, mechanically clean the floor down to sound, solid concrete by shot blasting or similar and mechanically prepare the concrete to ensure the surface is porous. Over-watered, frozen or otherwise weak concrete surfaces also must be cleaned down to sound, solid concrete by mechanical methods. Sanding equipment is not an effective method to remove contaminants from concrete. Acid etching, solvents, sweeping compounds and adhesive removers are not acceptable means of cleaning the substrate. The concrete must also have a minimum tensile strength of 150 psi (10.5 kg/cm²) for areas to receive normal foot traffic and 200 psi (14 kg/cm²) for areas of heavy commercial traffic when tested in accordance with ASTM C1583.

Substrate and ambient temperatures must be a minimum of 50°F (10°C) for the installation of ARDEX products. Substrates must be dry during installation and cure. If installing over an in-floor heating system, turn the heating system off 48 hours before, during, and at least 48 hours after the installation is complete. Once ARDEX products are installed, the temperature of the floor should not exceed 85°F.

For more detailed information on substrate preparation, please refer to the ARDEX Substrate Preparation Technical Data Sheet at www.ardexamericas.com.

Dormant Cracks and Dormant Saw Cuts
To achieve continuous moisture vapor suppression, dormant control joints and dormant cracks must be pre-filled with a two-part, low viscosity, 100% solids, rigid crack and joint filler, such as ARDEX ARDIFIX™. Dormant cracks and dormant saw cuts must be filled in strict accordance with the installation instructions provided by the ARDEX Technical Service Department. Once the dormant cracks and dormant saw cuts have been filled properly, broadcast sand to refusal into the fresh material, and allow these areas to cure thoroughly. Remove all excess sand prior to proceeding with the ARDEX VR 98 installation.

Moving Joints and Moving Cracks
All moving joints and moving cracks must be honored up through the ARDEX VR 98, the ARDEX underlayment and the floor covering by installing a fully flexible sealing compound designed specifically for use in moving joints, such as ARDEX ARDISTBULK™ RAPID PLUS. ARDEX cannot be responsible for issues arising from expansion and isolation joints, saw cuts or new or existing cracks that may develop, widen or become more narrow after the system has been installed.

For questions regarding the appropriateness of specific joint treatment compounds, please contact the ARDEX Technical Service Department at 888-512-7339.

Recommended Tools
Paint mixing paddle, low speed drill, short-nap paint roller** and paintbrush

Application
*Thoroughly mix ARDEX VR 98 with a low speed drill and paint mixing paddle until the material is evenly distributed throughout the container. **DO NOT ADD WATER OR OTHER ADDITIVES! Immediately apply the freshly mixed ARDEX VR 98 to the prepared concrete. For best results, pour the ARDEX VR 98 in a serpentine pattern and roll at a 90° angle to the direction of the pour using a short-nap paint roller. **The use of a professional style roller cage is also highly recommended. Roll the material in a uniform direction, without interruption and at a thickness of 8 mils (200 microns). To minimize the potential for pinhole formation, work the ARDEX VR 98 into the surface with the roller to ensure maximum penetration. ARDEX VR 98 can also be worked into the surface with a paintbrush for hard-to-reach areas and corners. Once an area has been coated completely, allow this to dry to a tack-free film for a minimum of 30 minutes (70°F / 21°C).

Once the first coat is dry, apply the second coat at right angles to the first and install without interruption and in a uniform direction at a thickness of 8 mils (200 microns). Allow the second coat to dry to a tack-free film, which will take approximately 2 hours (70°F / 21°C).**

NOTE: Do not allow more than 24 hours of dry time between coats. If the ARDEX VR 98 was not worked into the surface sufficiently enough to prevent pinholes, you must apply another coat of ARDEX VR 98.

A two-coat installation of 8 mils per coat equates to an application rate of approx. 425 sq. ft. (39 sq. m) per unit, depending on concrete surface profile, texture and porosity.

Allow the final coat of ARDEX VR 98 to completely dry (approx. 2 hours) prior to proceeding.
If an ARDEX Underlayment will be Installed: Install an ARDEX underlayment within 24 hours. Do not exceed an installation thickness of 1/4" (6 mm). Please note that the trowel-applied underlayments approved for use over ARDEX VR 98 are ARDEX FEATHER FINISH®, ARDEX SKM™ and ARDEX GPS™. A trowel without sharp edges, such as a pool trowel, a plastic trowel or a rubber float, must be used to avoid damage to the ARDEX VR 98 during the application of the trowel-applied underlayment.

Please also note that a thin coat of a cementitious material applied over a non-porous surface may not create a porous bonding surface for the finish flooring. For this reason, it will be necessary to consult the flooring manufacturer for confirmation of any minimum thickness requirements for cementitious underlayments as well as for any additional considerations when installing over potentially non-porous surfaces.

If Direct Flooring will be Installed: The following flooring systems may be installed directly over ARDEX VR 98 without the use of an underlayment:

- Floating / non-adhered flooring systems
- Direct-bond, non-wood flooring systems that meet the following criteria:
  - The flooring must be installed with a pressure-sensitive adhesive in a pressure-sensitive application.
  - The pressure-sensitive adhesive must not be solvent based.
  - The pressure-sensitive adhesive must be roller- or spray-applied.
  - The pressure-sensitive adhesive must be suitable for use over non-porous substrates, such as multi-coat, acrylic films on concrete.
  - The pressure-sensitive adhesive must be approved by the manufacturer for direct application over a moisture remediation system.
  - The pressure-sensitive adhesive must not adversely react and/or compromise the ARDEX VR 98.

Please also note that, under the following circumstances, the flooring cannot be installed directly over the ARDEX VR 98, and, therefore, the appropriate ARDEX underlayment must be installed:

- The adhesive is specified for use over a porous substrate. In this case, it is typically recommended that the underlayment be installed at a minimum thickness of 1/8" (3 mm).
- The surface of the concrete coated with ARDEX VR 98 is not flat and/or smooth enough for the installation of the floor covering.
- The adhesive will be installed with a notched trowel. Use of a notched trowel directly over ARDEX VR 98 has the potential to damage the ARDEX VR 98 and compromise its moisture mitigation capabilities.
- A wet-set adhesive (single- or two-component) will be used. These types of adhesives are not recommended for direct application over ARDEX VR 98.
- Wood flooring will be installed. Wood flooring adhesives are not recommended for direct application over ARDEX VR 98.

If moisture mitigation is required prior to installing an ARDEX topping, use ARDEX MC™ RAPID One-Coat Moisture Control System for Concrete to Receive ARDEX Products. Refer to the appropriate technical data sheets for further installation instructions.

It is not necessary to re-test the substrate for moisture emissions prior to installing the floor covering.

NOTE: Avoid all general traffic over the ARDEX VR 98 surface until the ARDEX VR 98 is completely dry (approx. 2 hours). If the underlayment will not be installed immediately, protect the surface from construction traffic, dirt and debris using Masonite® or similar.

Notes

FOR PROFESSIONAL USE ONLY.

Clean all tools with water before the ARDEX VR 98 dries.

The installation of ARDEX VR 98 does not require calcium chloride testing of the concrete per ASTM F1869, nor does this ASTM standard permit this test over the top of concrete that has been treated with a moisture remediation system.

Do not apply ARDEX VR 98 if the surface temperature is below 50°F (10°C). Store at temperatures between 40 and 90°F (5 - 32°C). Do not allow to freeze.

Do not reuse container. 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
All data based on 70°F (21°C) installation temperatures. Physical properties are typical values and not specifications.

Coverage:
- Approx. 425 sq. ft. (39 sq. m) per unit at 2 coats of 8 mils each
- Approx. 100 sq. ft. per gal. (2.4 sq. m per L) at 2 coats of 8 mils each
(Will vary with concrete surface profile, porosity and texture)

Effect of 14 pH Solution (ASTM D1308):
- No effect

Walkable:
- When completely dry (approx. 2 hours); no max. provided surface is protected

Install Underlayment:
- 2 - 24 hours

VOC:
- 37.5 g/L

Packaging:
- One 4.25 gal. (16 L) pail

Storage:
- Store in a cool, dry area. Do not leave containers exposed to sun. Keep from freezing. Keep away from heat.

Shelf Life:
- 1 year, if unopened
- Open containers remain usable for 6 weeks if sealed and stored under proper conditions. Keep container closed when not in use.

Warranty:
- ARDEX Engineered Cements Standard Limited Warranty applies.
- Extended system warranty is available. Please note that training by the ARDEX Technical Service Department is required for extended warranty eligibility. Please contact the ARDEX Technical Service Department for details.

Made in the USA.
© 2017 ARDEX, L.P. All rights reserved.
Content updated 08-21-2017. Published 08-31-2017. Supersedes all previous versions. Check www.ardexamericas.com for most recent version and for technical updates, which may supersede the information herein.
AT449 (08/17)
ARDEX VR 98 and Direct Application of Select HENRY Adhesives

As announced in July, ARDEX VR 98 (formerly named “ARDEX VR 95”) is suitable to receive direct application of certain flooring systems under appropriate circumstances (see ARDEX Technical Update 110, ARDEX VR 95 and Direct Installation of Flooring Systems).

We are now pleased to announce that, after extensive in-house and field testing, select HENRY adhesives are approved for use directly over ARDEX VR 98. The pressure-sensitive installation method must be used, and the approved HENRY adhesive must be roller applied. The HENRY adhesives approved for this application are listed in the chart below.

For the application of any adhesive directly over a non-porous substrate, it is critical that the adhesive be left open for a sufficient amount of time before the flooring is placed. Placing the flooring too early will trap adhesive moisture between the flooring material and the ARDEX VR 98. It is our recommendation that the HENRY adhesives listed below be left open as follows when being installed directly over ARDEX VR 98:

1. Allow the adhesive to reach a pressure-sensitive (dry-to-the-touch) state. Minimum times are detailed in the chart below.
2. Wait a minimum of an additional 10 minutes after the adhesive has reached a pressure-sensitive state before placing the floor covering.

HENRY Adhesives Approved for Direct Application over ARDEX VR 98*

<table>
<thead>
<tr>
<th>Adhesive</th>
<th>Recommended spread rate (roller application only)</th>
<th>Minimum Open Times (70°F; 50% ambient humidity)</th>
<th>Maximum Working Times (70°F; 50% ambient humidity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HENRY 640</td>
<td>225 - 300 sq. ft. / gal.</td>
<td>30 minutes (pressure-sensitive state) + 10 minutes = 40 minutes</td>
<td>6 hours</td>
</tr>
<tr>
<td>HENRY 622</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HENRY 430</td>
<td>400 - 450 sq. ft. / gal.</td>
<td>50 minutes (pressure-sensitive state) + 10 minutes = 60 minutes</td>
<td>24 hours</td>
</tr>
<tr>
<td>HENRY 420</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HENRY 630</td>
<td>300 - 450 sq. ft. / gal.</td>
<td>40 minutes (pressure-sensitive state) + 10 minutes = 50 minutes</td>
<td>Unlimited</td>
</tr>
<tr>
<td>HENRY 650 R</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*As with all direct flooring applications over ARDEX VR 98, the surface of the concrete coated with ARDEX VR 98 must be flat and smooth enough for the installation of the floor covering, as dictated by the floor covering manufacturer. For full details on appropriate circumstances for this application, see ARDEX Technical Update 110.

As always, prior to proceeding with the actual installation, we recommend installing an adequate number of properly located test areas, which include the adhesive and finish flooring, to verify the suitability of the application for its intended use.

Should you have any questions on this information, please contact the ARDEX Technical Service Department.

Tivona Schneider
Technical Communications Supervisor

ARDEX AMERICAS 400 ARDEX Park Drive Aliquippa PA 15001