SECTION 09 30 00
TILE & STONE INSTALLATION MATERIALS AND SYSTEMS

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 installation of an uncoupling membrane subsequent to the installation of tile and stone.

   1.   ARDEX UI 740™ FLEXBONE® Uncoupling Membrane

   2.   ARDEX X 5™ Flexible Tile and Stone Mortar

   3.   ARDEX FB 9 L™ Pourable ShearFlex® Mortar

   4.   ARDEX X 77™ MICROTEC® Fiber Reinforced Tile and Stone Mortar

   5.   ARDEX X 78™ MIRCOTEC® Semi-Pourable Tile and Stone Mortar

   6.   ARDEX S 28™ MICROTEC® Rapid-Set, Rapid-Dry, Super-Format Tile and Uncoupling Membrane Mortar

   7.   ARDEX X 90™ OUTDOOR MicroteC3 Rapid-Set, Flexible Tile and Stone Mortar

   B.   Complete ARDEX product and system installation details are provided in their corresponding Technical Data Sheet available at www.ardexamericas.com.

   C.   Related Sections include the following:

   1.   Division 09 Tile & Stone Sections

1.3   REFERENCES

   A.   Robinson Test Results

1. ARDEX UI 740 FLEXBONE received an Extra Heavy Rating

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product data, a Revit file with applicable materials meeting the Revit Content Style Guide, 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, certified applicator, such as an ARDEX LevelMaster® Elite or Choice Contractor, using mixing equipment and tools approved by the manufacturer. Please contact ARDEX Engineered Cements (724) 203-5000 for a list of recommended installers.

1.6 WARRANTY

A. ARDEX UI 740 FLEXBONE installed as part of a floor system, shall be installed in conjunction with the recommended ARDEX Tile & Stone Installation Materials, as appropriate, to provide the ARDEX SystemOne™ Comprehensive Warranty.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.

B. The rolls are shipped vertically. Protect in a dry area free of sunlight.

C. It is the responsibility of the installation contractor to inspect the ARDEX UI 740 FLEXBONE for visual defects and to verify that it is the type before beginning the tile or stone installation. Refer to the tile or stone manufacturer's specific recommendations.

D. Acclimate the area, setting material, ARDEX UI 740 FLEXBONE and tile or stone in an enclosed building at a minimum of 65°F (18°C) for at least 24 to 48 hours before, during and for 24 to 48 hours after installation. Lay the ARDEX UI 740 FLEXBONE flat during acclimation.

E. 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.

PART 2 - PRODUCTS

2.1   UNCOUPLING MEMBRANE

    A.   Acceptable Products:

        1.   ARDEX UI 740™ FLEXBONE®; Manufactured by ARDEX AMERICAS, USA (724) 203-5000, www.ardexamericas.com

2.2   UNCOUPLING MAT INSTALLATION

    A.   Acceptable Products:

        1.   ARDEX X 77™, ARDEX X 5™, ARDEX X 78™, ARDEX FB 9 L™, ARDEX S 28™ MICROTEC® and ARDEX X 90™; Manufactured by ARDEX AMERICAS, USA, (724) 203-5000, www.ardexamericas.com

PART 3 – EXECUTION

3.1   PREPARATION

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

        1.   For all substrates listed below, acid etching, adhesive removers, solvents and sweeping compounds are not acceptable means for cleaning the substrate. 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.

        2.   Substrates must be load-bearing, flat and structurally sound. Vacuum all dust and debris. All substrates must be flat with a maximum variance of ¼" in 10' or (6 mm in 3 m) from the required plane per TCNA or TTMAC guidelines or as recommended by the tile or stone manufacturer (default to the most stringent requirement).

        3.   Should pre-leveling or subfloor repair be required, refer to the technical data sheet.

    B.   Concrete: All concrete substrates must be solid, structurally sound thoroughly clean, thoroughly cured, dry and free of oil, wax, grease, asphalt, latex and gypsum compounds, curing compounds, sealers and any contaminant that might act as a bond breaker. If necessary, mechanically clean the floor down to sound, solid concrete by shot blasting or similar. 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 removed contaminants from the concrete.

    C.   Wood:

        1.   The wood subfloor must be constructed according to prevailing building codes. It must be solid and securely fixed to provide a rigid base free of undue flex. For tile installations, the

subfloor must be constructed in accordance with ANSI L/360 standards. Any boards exhibiting movement must be properly fastened. The surface of the wood must be clean and free of oil, grease, was, 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. Open joints should be filled with ARDEX SKM. 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.

2. Exterior grade plywood and OSB subfloors must be either 5/8" (approx. 16 mm) or ¾" (19 mm) tongue and groove. Fasten plywood or OSB every 6" (15 cm) o.c. along sheet ends and 8" (20 cm) o.c. along intermediate supports with ring-shank nails or screws. Allow 1/8" (approx. 3 mm) between sheets. All sheet ends must be supported by a framing member and properly fastened.

3. The underlayment must be constructed of 3/8" (9 mm) plugged-faced exterior grade plywood or OSB and fastened every 6" (15 cm) along sheet ends and 8" (20 cm) in the panel field with ring-shank nails or screws. Allow 1/8" (approx. 3 mm) between sheets on all edges and ends and ¼" (approx. 6 mm) at perimeter walls and any abutting surfaces. Offset underlayment joints from the joints in the subfloor.

4. Please refer to the technical data sheet for information on joist spacing and minimum subfloor requirements.

D. Moisture-Sensitive Substrates: Moisture-sensitive substrates, such as gypsum, must be protected from water damage. Gypsum substrates must be double primed with ARDEX P 51™ Primer. Please refer to the technical data sheet for specific directions regarding double priming.

E. Joint and Crack Preparation:

1. All existing expansion joints, isolation joints and construction joints must be honored up through the substrate, uncoupling membrane and tile or stone as indicated by TCNA or TTMAC guidelines.

2. Perimeter movement joints are essential for door areas, thresholds between rooms and geometric offsets. Arrange perimeter movement joints in accordance with industry standards. Interior areas exposed to direct sunlight, such as floors in front of floor-length windows, as well as underfloor heating areas require additional joints as required by TCNA OR TTMAC guidelines.

3. For areas with heavy loads, expansion joint profiles may be necessary. Contact the expansion joint profile manufacturer to ensure suitability for the intended use.

4. As needed, dormant cracks and dormant control joints can be filled with ARDEX SKM Skimcoat Patch & Finishing Underlayment, following the instructions in the technical data sheet.

3.2   MIXING

A.   When mixing sanded materials, ARDEX recommends using the ARDEX DUSTFREE™ or a standard "gutter hook" vacuum attachment in combination with a wet/dry (Shop-Vac® style) vacuum and HEPA dust extraction vacuum system. Additionally, each bag should be handled with care and emptied slowly to avoid creating a plume of dust. Contact the ARDEX Technical Service Department for more details on ARDEX products and air quality management.

3.3   APPLICATION OF INSTALLATION MATERIALS

A.   Install Uncoupling Mat

1.   Installation of the ARDEX UI 740 FLEXBONE membrane may occur with ARDEX X 78, ARDEX X 77, ARDEX X 5, ARDEX FB 9 L or ARDEX S 28 or ARDEX X 90.

2.   Remove the shrink-wrap from the roll of ARDEX UI 740 FLEXBONE and unroll in onto the floor. Shaking the material once as it is unrolled can help it to relax.

3.   Place the ARDEX UI 740 FLEXBONE so that it is perpendicular to the subsequent installation direction of the tile or stone installation. Trim the ends of each section as necessary in order to fit the surface area to be covered. Align the lengthwise edge of the material exactly with that of the adjacent section.

4.   Using the flat side of a trowel, key in the approved ARDEX mortar to the substrate. Then, apply the mortar to the substrate using the appropriate notched trowel. For ARDEX mortars, use a ¼" x 3/16" V-Notch trowel.

5.   Comb the mortar out and use just enough to be covered by the ARDEX UI 740 FLEXBONE membrane during the mortar open time. ARDEX mortars should be mixed to the high-water ratio.

6.   Carefully lay the ARDEX UI 740 FLEXBONE into the wet ARDEX mortar with the fleece side facing down. Do not let the material fall, as this will trap air beneath the material. Using a float, flat trowel or 35 – 75 lb. roller, smooth and embed the mat into the bonding mortar. Gently lift a corner of the membrane to check for proper coverage. Full contact between the fleece and mortar must be achieved.

7.   When approaching walls or other obstacles, cut the mat to the appropriate lengths. Leave approximately ¼' (6 mm) between the mat and the edge of the wall or obstacle to allow for expansion.

8.   Structural, expansion and field perimeter joints are formed by dividing the ARDEX UI 740 FLEXBONE to the required width. The joints in the mats are to be covered with self-adhesive ARDEX UD 156 Joint Movement Tape (for waterproofing applications, use ARDEX SK 175 Seam Tape) to protect against the entry of mortar and grout. The arrangement of joints in the tile or stone installation must be aligned with the divisions of the mats.

9.   In waterproofing applications, all seams in the ARDEX UI 740 FLEXBONE and floor and wall transitions must be sealed with ARDEX SK 175 Seam Tape using a thin set mortar. The ARDEX SK 175 Seam Tape must overlap the ARDEX UI 740 FLEXBONE at the seams and floor and wall transitions by a minimum of 2" (50 mm) in order to secure waterproof integrity. This practice may be appropriate in laundry rooms, spaces with

icemakers and other areas where an overflow or pipe break may occur.

10. In some cases, the vertical section of the floor or wall transition may not be compatible with bonding using a thin set mortar. Connections to these vertical substrates may otherwise be achieved by using ARDEX CA 20 P™ Multi-Purpose Construction Adhesive and Sealant or suitable waterproofing materials, including those that require atmospheric moisture to cure.

11. Do not mechanically fasten any material through the ARDEX UI 740 FLEXBONE, as this will compromise its waterproofing and uncoupling capabilities.

12. The surface of the mat can be prefilled using ARDEX Liquid BackerBoard in accordance with the technical data sheet.

B.   Install Tile with Mortar

1. After mortar has cured (approximately 12 hours, standard-set mortars), tile or stone can be installed over the ARDEX UI 740 FLEXBONE and should proceed in accordance with ANSI A 108.5 or TTMAC standards. After mixing the appropriate ARDEX mortar, apply the mortar to the ARDEX UI 740 FLEXBONE with the flat side of a notched trowel (keying in) to fill in the bone-shaped cavities. Comb additional mortar "wet on wet" over the mat with the appropriate notched trowel for the size of the tile or stone to be installed, and directly lay the tile or stone on top. Follow the recommendations of the TCNA or TTMAC for the proper transfer of setting materials. Periodically remove and check tile or stone to ensure full coverage.

2. The mortar thickness between the top of the ARDEX UI 740 FLEXBONE and the tile side must not exceed 1/4" (6 mm). Using the correct notched trowel will provide proper thickness. Install metal edge or transition strips where the tile ends along bordering, lower-lying covering surfaces.

3. Comply with manufacturer's printed instructions for mixing of material, installation, and cure. For questions contact the ARDEX Technical Services Department at (724) 203-5000.

3.4   FIELD QUALITY CONTROL

A.   Where required, contact manufacturer for field sampling methods and procedures.

3.5   PROTECTION

A.   Avoid foot traffic during installation and until the mortar has cured. Prior to installing tile and stone, ARDEX UI 740 FLEXBONE should be protected with boards in areas where foot traffic is necessary.

END OF SECTION