SECTION 09 05 61

COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 – GENERAL

1. SUMMARY

A. This section applies to and supersedes the flooring preparation instructions of all floors identified in the contract documents as to receive the following types of adhered floor coverings to include:
   1. Broadloom carpet.
   2. Carpet tile.
   3. Cork.
   4. Epoxy Terrazzo.
   5. Fluid applied and resinous flooring.
   6. LVT and LVP.
   7. Resilient tile and sheet.
   8. Rubber tile and sheet.
   9. Thin-set ceramic tile and stone tile.
   10. Wood.

B. Preparation of all interior concrete floor slabs regardless of age or elevation.

C. Testing of concrete floor slabs for dew point, moisture, substrate surface absorption and alkalinity (pH).

D. Smoothing compound, leveling compound, and patching compound.

E. Remedial moisture vapor emission control for concrete floor slabs.

F. Related Sections: Coordinate work of this Section with work of other Sections to properly execute the work requirements and maintain satisfactory progress of work in other Sections.
   1. Section 03 05 10 - Concrete Moisture Vapor Reduction Admixture
   2. Section 03 30 00 - Cast-In Place Concrete.
   3. Division 09 Sections for floor coverings.

2. REFERENCE STANDARDS

A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens).

B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete.

C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

F. ASTM F3010 - Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings

G. ASTM F3191 - Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring

A. ASTM F3311 - Standard Practice for Mat Bond Evaluation of Performance and Compatibility for Resilient Flooring System Components Prior to Installation

B. ASTM F3513 - Standard Practice for Single Component, Fluid-Applied Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Covering

1. ADMINISTRATIVE REQUIREMENTS

A. Coordinate scheduling of all cleaning to allow adequate slab drying prior to any testing or installation.

B. Coordinate scheduling of all testing to allow adequate slab hydration and acclimatization prior to any testing or installation.

2. SUBMITTALS

A. Smoothing Compound, Leveling Compound, Patching Compound, Adhesive, and Floor Covering Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
   1. Manufacturer’s required moisture limits and test methods.
      a. No such moisture testing shall be required where moisture vapor reduction admixture (MVRA) was used as part of the concrete mix design
   2. Manufacturer’s required alkalinity (pH) limits and test methods.
   3. Manufacturer’s required substrate surface absorption/porosity test methods.
   4. Manufacturer’s required concrete surface profile (CSP).
   5. Manufacturer's required bond/compatibility test procedure.

B. Testing Organization’s Report:
   1. Description of areas tested; include floor plans and photographs if helpful.
   2. Summary of conditions encountered.
   3. Copies of moisture and alkalinity (pH) test reports.
   4. Copies of concrete substrate water absorption (porosity) test report.
   5. Summary of concrete surface profiles (CSP) encountered.
   6. Copies of specified test methods.
   7. Recommendations for remediation of unsatisfactory surfaces.
   8. Submit report to Contractor.
   9. Submit report not more than two business days after conclusion of testing.

C. Adhesive Bond and Compatibility Test Report.

D. Remedial Moisture Vapor Emission Control Materials Product Data: Manufacturer's published data on each product to be used for remediation.
   1. Manufacturer's qualification statement.
   2. Manufacturer's installation instructions.

E. Specimen Warranty:
   1. Copy of warranty to be issued by moisture vapor emission control manufacturer.

2. Copies of smoothing compound, leveling compound, patching compound, adhesive, and floor covering manufacturers' standard warranty form in which manufacturer agrees to repair or replace components of installation that fail due to defects in materials, or due to a manufacturing defect within the specified warranty period.
    a. Conditions such as deterioration or failure of substrate, excessive substrate moisture, hydrostatic pressure, vandalism, excessive wear, or abuse are not subject to this warranty.
3. Copy of installation organization's standard warranty in which the installation organization agrees to repair or replace components of installation that fail due to defects in quality of workmanship or professionalism.
    a. Conditions such as lack of climate control after installation, improper maintenance or cleaning, abuse, movement or warping of the substrate, excessive substrate moisture, vandalism, alterations, and subfloor hydrostatic pressure are not subject to this warranty.

3. QUALITY ASSURANCE

A. Moisture and alkalinity (pH) testing shall be performed by an independent testing agency.
    1. At Contractor's option, tests may be performed by the Contractor.

B. Testing Agency Qualifications: Testing agency experienced in the types of testing specified.

C. Remedial Moisture Vapor Emission Control Installer Qualifications: Company specializing in performing work of the type specified in this section, certified, trained, or employed by coating manufacturer.

4. DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.

B. Deliver materials in manufacturer's packaging; include installation instructions.

C. Keep materials from freezing

5. FIELD CONDITIONS

A. Comply with appropriate temperature and humidity ranges of floor covering and sundry manufacturers for products to be installed for all testing and installation procedures.

B. In the absence of adhesive and flooring manufacturer's written instructions, comply with acclimation recommendations of F710.

C. Maintain concrete substrate surface temperature in spaces where concrete testing and flooring product installation is being conducted, and for at least 48 hours prior to testing and through the duration of testing, at not less than 65 degrees F or more than 85 degrees F.

PART 2 – PRODUCTS

1. MATERIALS

A. Smoothing Compound, Leveling Compound, Patching Compound: Provide a product with the following characteristics:
   1. Cementitious moisture-, mildew-, and alkali-resistant.
   2. Latex or polyvinyl acetate additions are permitted.
   3. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
   4. Compound suitable for substrate conditions, and compatible with adhesive and floor covering.

B. Flooring Adhesive: Specified in Section [090561] [096200] [096400] [096500] [096800] [_____]:
   1. Low-VOC adhesive suitable for moisture and pH conditions present and compatible with floor covering.
   2. Provide adhesive manufacturer's warranty performance bond warranty against installation failure due to defective product providing coverage for:
      a. Equivalent floor covering
      b. Replacement adhesive manufacturer's product
      c. Reasonable labor costs to repair or replace the failed portion of the installation
      d. Contract Documents are based on Taylor Adhesives https://www.tayloradhesives.com/).
   2. Substitutions: [Under provisions of Division 01.] [Not permitted.]

**********OR**********

B. Flooring Adhesive: Specified in Section [090561] [096200] [096400] [096500] [096800] [_____]:
   1. Provide adhesive manufacturer's lifetime performance bond warranty against installation failure due to defective product providing coverage for:
      a. Equivalent floor covering
      b. Replacement adhesive manufacturer's product
      c. Reasonable labor costs to repair or replace the failed portion of the installation
   2. Contract Documents are based on Taylor Adhesives (https://www.tayloradhesives.com/) utilizing a certified installer from International Certified Flooring Installers Association (CFI) (https://cfiinstallers.org/).
   3. Substitutions: [Under provisions of Division 01.] [Not permitted.]

C. Moisture Vapor Emission Control: Single- or multi-component membrane forming moisture mitigation system for use under resilient floor coverings.
   1. F3010 or F3513 compliant.
   2. Thickness: As required for application and in accordance with manufacturer's installation instructions.
   3. Provides resistance to up to 100 percent relative humidity per ASTM F2170 and 25 pounds moisture vapor transmission per ASTM F1869.
   4. Provides resistance to alkalinity (pH) level of pH 14.
   5. Products:
      a. Sahara Unlimited Moisture Barrier with Enhance Surface Bond Promoter; as manufactured by Taylor Adhesives.
   6. Substitutions: [Under provisions of Division 01.] [Not permitted.]

PART 3 - EXECUTION

1. PRELIMINARY CLEANING

A. Clean substrate surface in accordance with ASTM F710.
   1. Substrate surface shall be free of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, parting compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.

B. Do not use solvents or other chemicals for cleaning.

2. MOISTURE VAPOR EMISSION TESTING

A. Not required for concrete floor slabs containing moisture vapor reduction admixture.

B. For concrete floor slabs without moisture vapor reduction admixture, test in accordance with ASTM F1869 and as follows.
   1. Test where adhesive applied floor finishes are to be installed, and where indicated.
   2. Concrete substrate temperature shall be no less than 65°F and no greater than 85°F during the conduct of the tests.
   3. Only test when concrete substrate surface is at least 5 degrees F above dew point.

C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated

D. Report: Report the information required by the test method.

3. INTERNAL RELATIVE HUMIDITY TESTING

A. Not required for concrete floor slabs containing moisture vapor reduction admixture.

B. For concrete floor slabs without moisture vapor reduction admixture, test in accordance with ASTM F2170 and as follows.
   1. Test where adhesive applied floor finishes are to be installed, and where indicated.
   2. Concrete substrate temperature shall be no less than 65°F and no greater than 85°F during the conduct of the tests.
   3. Only test when concrete substrate surface is at least 5 degrees F above dew point.

C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated.

D. Report: Report the information required by the test method.

4. ALKALINITY TESTING

A. Test in accordance with adhesive and flooring manufacturer’s written instructions.

B. In the event that test values exceed adhesive and floor covering manufacturer's limits, perform remediation as indicated.

C. Report the information required by the test method.

5. SUBSTRATE SURFACE ABSORPTION (POROSITY) TESTING

A. Test in accordance with ASTM F710 and F3191.

B. Follow the appropriate installation instructions for the substrate surface porosity conditions. If the selected material is not compatible with the substrate surface profile, select a different material compatible with substrate surface porosity conditions and flooring material.

C. Report the information required by the test method.

6. ADHESIVE BOND AND COMPATIBILITY TEST

A. Comply with requirements and recommendations of floor covering manufacturer.

B. In the absence of adhesive and flooring manufacturer's written instructions, test in accordance with ASTM F3311.

C. Report the results of the adhesive bond and compatibility tests and note any concerns over adhesion.

7. PREPARATION

A. Prepare concrete substrate surfaces in accordance with ASTM F710.
   1. See individual floor covering section(s) for additional requirements.
   2. Concrete slabs containing moisture vapor reduction admixtures do not require moisture testing.

B. Comply with requirements and recommendations of adhesive, floor covering, smoothing, leveling, patching, thin set, and mortar manufacturers.
   1. Concrete slabs containing moisture vapor reduction admixtures do not require moisture testing.

C. Verify appropriate concrete surface profile (CSP) is present for material to be installed.

D. Unless otherwise indicated by product manufacturer, do not install any material unless the following conditions are present:
   1. Substrate surface is clean.
   2. Substrate surface is dry.
   3. Substrate temperature is not less than 65°F and no greater than 85°F during and after installation.
   4. Substrate surface is at least 5 degrees F above dew point.
   5. Issues with moisture and alkalinity have been addressed.

E. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with smoothing, leveling, or patching compound.

F. Do not fill expansion joints, isolation joints, or other moving joints.
   1. Consult the flooring manufacturer for their preferred method of addressing any moving joint.
   2. Unless otherwise indicated, honor all moving joints up through flooring material.

8. REMEDIATIONS

A. Active Water Leaks or Continuing Moisture Migration to Surface of Slab:
   1. Correct this condition before doing any other remediation;

2. Re-test after correction.

B. Excessive Moisture Emission or Relative Humidity:
   1. If an adhesive that is resistant to the level of moisture present is available and is compatible with flooring material, use that adhesive for installation of the flooring;
   2. If not, apply moisture vapor emission control over entire suspect floor area.
   3. Slabs containing moisture vapor reduction admixture require no further moisture vapor emission control remediation.

C. Excessive Alkalinity (pH):
   1. If remedial floor coating is necessary to address excessive moisture, no additional remediation is required;
   2. If not, if an adhesive that is resistant to the level present is available and is compatible with flooring material, use that adhesive for installation of the flooring;
   3. Otherwise, apply a skim coat of pH blocking material over entire suspect floor area.

9. Protection

A. Cover prepared floors with building paper or other durable covering.

END OF SECTION