

**Part 1 GENERAL****1.1 RELATED SECTIONS**

- .1 07 92 00 Joint Sealants.

**1.2 REFERENCES**

- .1 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM C 645-00, Specification for Nonstructural Steel Framing Members.
  - .2 ASTM C 754-00, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- .2 Environmental Choice Program (ECP).
  - .1 CCD-047a -98, Paints - Surface Coatings.
  - .2 CCD-048-98, Surface Coatings - Recycled Water-borne.

**1.3 QUALITY ASSURANCE**

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 No request for substitution shall be considered that would change the generic type of floor system specified (i.e. epoxy mortar based system). Equivalent materials of other manufactures may be substituted only on approval of Architect. Request for substitution will only be considered only if submitted 10 days prior to bid date. Request will be subject to specification requirements described in this section.
- .4 Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, through one source from a single manufacturer.
- .5 Manufacturer Field Technical Service Representatives: Resinous flooring manufacture shall retain the services of Field Technical Service Representatives who are trained specifically on installing the system to be used on the project.
- .6 Field Technical Services Representatives shall be employed by the system manufacture to assist in the quality assurance and quality control process of the installation and shall be available to perform field problem solving issues with the installer.

- .7 Mockups: Apply mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - .1 Apply full-thickness mockups on 1200-mm square floor area selected by Departmental Representative.
  - .2 Include 1200-mm length of integral cove base.
  - .3 Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### **1.4 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 10 00 – General Instructions.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.
- .4 Transport unused bentonite sealing materials to an approved hazardous materials collection site.
- .5 Divert unused metal materials from landfill to metal recycling facility approved by applicable provincial and municipal regulations.
- .6 Divert unused gypsum materials from landfill to recycling facility approved by applicable provincial and municipal regulations.

#### **1.5 PROJECT CONDITIONS**

- .1 Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.
- .2 Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.
- .3 Do not allow circulation during application of softwood flooring.
- .4 Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.
- .5 Concrete substrate shall be properly cured for a minimum of 30 days. A vapor barrier must be present for concrete subfloors on or below grade. Otherwise, an osmotic pressure resistant grout must be installed prior to the resinous flooring

#### **1.6 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.
- .2 Store materials to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

- .3 All materials used shall be factory pre-weighed and pre-packaged in single, easy to manage batches to eliminate on site mixing errors. No on site weighing or volumetric measurements allowed.

## **Part 2 PRODUCTS**

### **2.1 MATERIALS**

- .1 Resinous Flooring System Characteristics:
  - .1 Color and Pattern: Choose from Mfg. Standards
  - .2 Wearing Surface: Standard smooth.
  - .3 Integral Cove Base: 150 mm integral with flooring.
  - .4 Overall System Thickness: nominal 6mm
- .2 System Components: Manufacturer's standard components that are compatible with each other and as follows:
  - .1 Primer: as per manufacturer's recommendations
  - .2 Mortar Base:
    - .1 Resin: Epoxy.
    - .2 Formulation Description: (3) three component, 100 percent solids.
    - .3 Application Method: Metal Trowel.
    - .4 Thickness of Coats: nominal 6.4 mm.
    - .5 Number of Coats: One.
    - .6 Aggregates: Pigmented Blended aggregate (no. 2 abrasive).
  - .3 Top Coat:
    - .1 Resin: Epoxy.
    - .2 Formulation Description: (2) two component 100 percent solids.
    - .3 Type: pigmented.
    - .4 Finish: standard.
    - .5 Number of Coats: one.
  - .4 System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:
    - .1 Compressive Strength: 10,000 psi after 7 days per ASTM C 579.
    - .2 Tensile Strength: 1,750 psi per ASTM C 307.
    - .3 Flexural Strength: 4,000 psi per ASTM C 580.
    - .4 Water Absorption: < 1% per ASTM C 413.
    - .5 Impact Resistance: > 160 in. lbs. per ASTM D 2794.
    - .6 Flammability: Class 1 per ASTM E-648.
    - .7 Hardness: 85 to 90, Shore D per ASTM D 2240.

**2.2 ACCESSORY MATERIALS**

- .1 Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.
- .2 Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated. Allowances should be included for joint fill material, and concrete crack treatment.
- .3 metal cove caps for integral cove base: aluminum, square edge as per manufacturer's recommendations.

**Part 3 EXECUTION****3.1 PREPARATION**

- .1 General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral Ph substrate for resinous flooring application.
- .2 Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.
- .3 Mechanically prepare substrates as follows:
  - .1 Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
  - .2 Comply with ASTM C 811 requirements, unless manufacturer's written instructions are more stringent.
  - .3 Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.
  - .4 Verify that concrete substrates are dry.
  - .5 Perform in situ probe test, ASTM F 2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity of 75 percent.
  - .6 Test above provides a more accurate indication as to whether or not a concrete slab has dried sufficiently to allow finish flooring application than the tests below.
  - .7 For applying impermeable resinous flooring systems, 1.36 kg of water/92.9 sq. m of slab in 24 hours is maximum allowable moisture-vapor-emission rate.
  - .8 Perform additional moisture tests recommended by manufacturer. Proceed with application only after substrates pass testing.
  - .9 Verify that concrete substrates have neutral Ph and that resinous flooring will adhere to them. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.

- .4 Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.
- .5 Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
- .6 Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations. Allowances should be included for joint fill material, and concrete crack treatment.

### **3.2 APPLICATION**

- .1 General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
- .2 Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
- .3 Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
- .4 At substrate expansion and isolation joints and at joints between existing floors and new, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
- .5 Apply joint sealant to comply with manufacturer's written recommendations.
- .6 Apply primer where required by resinous system, over prepared substrate at manufacturer's recommended spreading rate.
- .7 Integral Cove Base: Mortar, apply cove base mix to wall surfaces before applying flooring. Apply according to manufacturer's written instructions and details including those for taping, mixing, priming, troweling, sanding, of cove base. Round internal and external corners.
- .8 Integral Cove Base: 150mm high.
- .9 Apply metal trowel single mortar coat in thickness indicated for flooring system. Hand or power trowel and grout to fill voids. When cured, sand to remove trowel marks and roughness.
- .10 Apply topcoat(s) in number of coats indicated for flooring system and at spreading rates recommended in writing by manufacturer.
- .11 Terminations
  - .1 Chase edges to "lock" the flooring system into the concrete substrate along lines of termination.
  - .2 Penetration Treatment: Lap and seal resinous system onto the perimeter of the penetrating item by bridging over compatible elastomer at the interface to compensate for possible movement.
  - .3 Trenches: Continue flooring system into trenches to maintain monolithic protection. Treat cold joints to assure bridging of potential cracks.

- .4 Treat floor drains by chasing the flooring system to lock in place at point of termination.
- .12 Joints and cracks
  - .1 Treat control joints to bridge potential cracks and to maintain monolithic protection.
  - .2 Treat cold joints and construction joints to bridge potential cracks and to maintain monolithic protection on horizontal and vertical surfaces as well as horizontal and vertical interfaces.
  - .3 Discontinue floor coating system at vertical and horizontal contraction and expansion joints by installing backer rod and compatible sealant after coating installation is completed. Provide sealant type recommended by manufacturer for traffic conditions and chemical exposures to be encountered.

### **3.3 CLEANING**

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.
- .2 Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 18 hours.
- .3 Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer's recommendations for protective materials and method of application. General Contractor is responsible for protection and cleaning of surfaces after final coats.
- .4 Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.

**END OF SECTION**