

MRXL4 CR6

Surface Requirements: XNS, NS, M, S; Special Requirements: NO

PART 1 : GENERAL

1.01 DESCRIPTION

- A. **WORK INCLUDED:** *All labor, materials, appliances, tools, equipment, facilities, transportation and services necessary for and incidental to performing all operations of the work in this Section, complete as shown on the Drawings and as specified herein. Work includes, but is not limited to, the following:*
1. *Examine all other Sections for work related to those other Sections and required to be included as work under this Section.*
 2. *Submittals.*
 3. *Resinous flooring.*
- B. **RELATED DOCUMENTS:** *Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to Work of this Section as if printed herein.*
- C. **RELATED WORK SPECIFIED IN OTHER SECTIONS:** *The following items are covered by the indicated other Sections of this Project Manual. Coordinate as required with all other trades to ensure proper and adequate provision for the installation of items described in this Section.*
1. *Cast-In-Place Concrete: Section 03300*
 2. *Finish Carpentry: Section 06200*
 3. *Sealants and Caulking: Section 07920*

1.02 QUALITY ASSURANCE

- A. **ACCEPTABLE MANUFACTURER:** *As specified herein under "Products."*
- B. **INSTALLER'S QUALIFICATIONS:** *Installation shall be by qualified Tufco personnel.*
- C. *Furnish and install the resinous flooring using materials and methods to ensure that the completed work will remain bonded to the substrate in this building and will have the chemical resistance and physical properties as published by the Manufacturer for the specified products.*
- D. **REFERENCES AND STANDARDS (Latest Edition):**
1. *American Society of Testing and Materials (ASTM)*
 2. *American Concrete Institute (ACI)*

1.03 SUBMITTALS

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- A. Comply with pertinent provisions of Section 01300.
- B. *PRODUCT DATA*; Submit:
 - 1. Complete list of all materials, with descriptive data and installation instructions.
 - 2. Selection of color and finish will be made by the Architect from samples of Manufacturer's palette.
 - 3. Manufacturer's recommended care and maintenance instructions.

1.04 DELIVERY, STORAGE AND HANDLING

- A. *COMPLY WITH PERTINENT PROVISIONS OF SECTION 01600*: Material shall be stored in a dry, protected area in such a manner as to prevent damage. Damaged or deteriorated materials shall be removed from the premises.
- B. Ensure timely delivery so products will be available at project site when required for installation so as not to delay job progress.

1.05 PROJECT CONDITIONS

- A. New concrete substrates should be properly cured to develop specified compressive strength, and other properties. A safe period of cure is usually determined to be 21 to 28 days under normal temperature and humidity conditions. Shorter cure time may be acceptable in the event that high early strength and/or other accelerated cure concretes are being used.
- B. The concrete shall have a light steel trowel finish.
- C. Floor flatness tolerance as determined by ASTM E 1155, "Standard Method for Determining Floor Flatness and Levelness Using the F-Number System," should have a minimum F_F of 30, 3/16 inch as determined by the 10-foot straightedge method (ACI 118 gives information on both systems). Values outside these tolerances may necessitate the use of fill material in addition to the amount of material specified herein.
- D. Expansion joints shall be of non-asphalt type.
- E. Concrete shall be finished to grade of desired finished floor.
- F. Utilities, including electric, water and temporary or finished lighting shall be supplied by the General Contractor.
- G. Job area shall be free of other trades during, and for a period of time specified in Part 3.03.F, after floor installation.
- H. Protection of finished floor from damage by subsequent trades shall be the responsibility of the General Contractor.

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1.06 WARRANTY

Warranty for this work is extended beyond the normal one year period to five years.

PART 2 : PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

MRXL or TFXL Series as manufactured by: Tufco International, Inc.
P.O. Box 456
Gentry, Arkansas 72734
(479) 736-2201

2.02 PERFORMANCE CRITERIA

A. RESIN: The resin primer, binder and glaze shall be thermosetting resins formulated for the specific flooring application taken from the following list of resins:

Tufco Resin 2080	Tufco Resin 1099
Tufco Resin 1098	Tufco Resin 7010
Tufco Resin 1093	Tufco Resin 7040
Tufco Resin 1095	Tufco Resin 7090

Refer to specific floor to be installed, and Product Bulletins of specified resins for performance criteria.

B. AGGREGATE: The aggregate fillers shall be clean, kiln dried silica sand and aluminum oxide as follows:

Tufco No. 8 Silica Sand	U.S. Standard Sieve passing 8 to 16
Tufco No. 24 Silica Sand	U.S. Standard Sieve passing 20 to 40
Tufco Colored Aggregate	U.S. Standard Sieve passing 20 to 40
Tufco Aluminum Oxide	U.S. Standard Sieve passing; varies with varying surface requirements

C. FINISHED FLOOR PHYSICAL PROPERTIES

Compressive Strength, ASTM C-579	14,000 PSI Minimum
IZOD Impact, Ft-Lb/In	1.8 Minimum

2.03 JOINT SEALANT MATERIALS

Joint sealant shall be the type produced by the resinous flooring manufacturer for type of service and joint condition indicated.

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2.04 OTHER MATERIALS

All other materials not specifically described, but required for a complete installation, shall be only those recommended by the Manufacturer of the seamless flooring system.

PART 3 : EXECUTION

3.01 SURFACE CONDITIONS

- A. *Prior to all work of this Section, carefully inspect previously installed work of other trades and verify that all such work is complete to the point where this installation may commence. Particular attention should be given to items in Part 1.04 of this Specification.*
- B. *The concrete shall be allowed to cure for an acceptable period prior to application of resinous flooring. Refer to Part 1.05.A of this Specification.*
- C. *Verify that the final installation shall be complete in accordance with the original design and the Manufacturer's recommended method of installation. In the event of discrepancy, immediately notify the Architect.*

3.02 SURFACE PREPARATION

- A. *Concrete floor preparation shall be by mechanical means and shall include the use of scabber, scarifier, shot-blast or other acceptable devices for removal of bond-inhibiting materials such as curing compounds or laitance.*
- B. *After all operations in 3.02.A, thoroughly clean surface to remove dust and loose material.*

3.03 APPLICATION

- A. *GENERAL: Apply each component of resinous system in compliance with Manufacturer's directions to produce a uniform monolithic wearing surface of thickness indicated, uninterrupted except at divider strips, sawn joints or other types of joints, if any, indicated or required.*
- B. *KEYING: Keying shall be done to assure soundness at all floor terminations.*
 - 1. *Keying shall be performed at all flooring terminations to a nominal width of 1-1/2 inches and a nominal depth of one inch.*
 - 2. *Keying shall be performed at walls, pads and other vertical surfaces to a nominal width of one inch and a nominal depth of one inch.*
- C. *DETAILING: Detailing shall be done at all moving cracks and joints to prevent cracking to the flooring.*

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Working cracks, expansion joints and control joints shall be detailed in one of the following ways:

1. Keying and installation of non-reinforced flexible joint compound.
 2. Keying and installation of metal reinforcing mesh and the specified flooring resins and aggregates.
- D. The flooring shall be applied in laminated layers at the following material coverage rates to yield a nominal 1/4 to 7/16 inch finished floor, excluding any additional fill and leveling material:

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LAYER	RESIN		AGGREGATE	
	LBS/SF	TYPE	LBS/SF	TYPE
1	0.30	7010 A/B	1.10	No. 8
2	0.30	7010 A/B	0.90	No. 24
3	0.28	7010 A/B	0.80	Col. Agg.
4	0.16	7040 A/B	To Texture	Col. Agg. or Al. Ox.

E. The laminated layers of the flooring shall be applied in the following manner:

MRXL4 NO -- Nominal Thickness 1/4 to 3/8 inch

1. LAYER 1, BASE COAT : A resin layer shall be spread and worked into the concrete surface, cracks, keys and detailed areas for a complete seal. Aggregate shall be distributed evenly over the uncured resin to a dry appearance.
2. LAYER 2, SAND COAT : A resin layer shall be applied over the entire area, aggregate shall be distributed evenly over the uncured resin to a dry appearance.
3. LAYER 3, COLORED AGGREGATE COAT : A resin layer shall be applied over the entire area, aggregate shall be distributed evenly over the uncured resin to a dry appearance.
4. LAYER 4, GLAZE COAT : A resin layer optionally sprinkled with aggregate to achieve the desired texture. Resin layer shall be applied over the entire area in sufficient volume to anchor the aggregate and seal the floor. For highest non-skid (XNS) and high non-skid (NS) floors, aggregate is lightly sprinkled for the desired texture. For medium (M) and smooth (S) floors, sanding or grinding shall be done prior to applying resin. Smooth (S) floors require one additional Glaze Coat.

F. CURING: Floors shall cure in accordance with Manufacturer's written recommendations

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before being subjected to traffic of any nature.

1. Approximate curing schedule (at 75°F or above).

<i>TYPE TRAFFIC</i>	<i>EPOXY-GLAZED</i>	<i>VINYL ESTER GLAZED</i>
<i>FOOT TRAFFIC</i>	<i>6 to 10 hours</i>	<i>5 to 8 hours</i>
<i>LIGHT VEHICLE TRAFFIC</i>	<i>12 hours</i>	<i>5 to 8 hours</i>
<i>CLEAN WATER WASHDOWN</i>	<i>12 hours</i>	<i>5 to 8 hours</i>
<i>SANITIZING CHEMICALS</i>	<i>Dilute by running water on floor while sanitizing equipment during the first two days of operation.</i>	

2. For cure schedule below 75°F, consult Tufco's technical staff.

TUFCO INTERNATIONAL, INC.

P.O. Box 456

Gentry, Arkansas 72734

(479) 736-2201

SECTION 09700

SEAMLESS FLOORING SPECIFICATION

for

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