

Section 09722
MASTERTOP®
VERSACOLOR X-5, SOLVENT-FREE
EPOXY POLYMER FLOORING SYSTEM

NOTE TO SPECIFIER

The purpose of this suggested specification is to assist the specifier in developing a specification for the use of Master Builders *VERSACOLOR X-5, SOLVENT-FREE*. Questions regarding the selection, installation, or intended end use of Master Builders materials should be directed to a Master Builders technical representative. This specification is prepared to be a part of a complete project specification.

PART 1 - GENERAL

1.01 Related Documents

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this section.

1.02 Summary

- A. This section specifies a multi-purpose epoxy flooring system formulated to be used for applications requiring chemical resistance, scratch resistance and resistance to abuse from impact and heavy loading.
- B. *VERSACOLOR X-5, SOLVENT-FREE* is a monolithic flooring system that is recommended to be installed between 3/16 inch (4.8 mm) and 1/4 inch (6.4 mm) thick and in varying degrees of surface texture and chemical resistance depending upon the agreed to requirements of this project.

1.03 References

ASTM C 413-88	Test Method for Absorption of Chemical Resistant Mortars, Grouts and Monolithic Surfacing
ASTM C 531-90	Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical Resistant Mortars, Grouts and Monolithic Surfacing
ASTM C 579-91	Test Method for Compressive Strength of Chemical Resistant Mortars, Grouts and Monolithic Surfacing
ASTM D 580-90	Test Method for Flexural Strength and Modulus of Elasticity of Chemical Resistant Mortars, Grouts and Monolithic Surfacing
ASTM D 638-91	Test Method for Tensile Properties of Plastics
ASTM D 1864-88	Test Method for Moisture in Mineral Aggregates
ASTM D 2240-91	Test Method for Rubber Property - Durometer Hardness
ASTM D 4060-90	Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
ASTM D 4263-88	Test Method for Capillary Moisture in Concrete by Plastic Sheet

1.04 System Performance Requirements

- A. Provide an epoxy floor system that, when cured, produces the following typical properties:

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Tensile Strength	ASTM C 307	1960 psi (14 MPa)
Water Absorption	ASTM C 413-88	0.3%
Curing Shrinkage	ASTM C 531-90	5.0×10^{-4} in/in
Coefficient of Thermal Expansion	ASTM C 531-90	2.3×10^{-5} in/in/°F
Compressive Strength	ASTM C 579-91	10,700 psi (74 MPa)
Flexural Strength	ASTM C 580-90	3520 psi (24 MPa)
Shore D Hardness	ASTM D 2240-91	80
Abrasion Resistance	ASTM D 4060-90	0.085 gram
Impact Resistance	Gardner Impact	>160 in • lb

1.05 Submittals

- A. Submit manufacturer's technical data and product literature indicating that the products comply with specified requirements.
- B. Submit two mock-up sample coupons that are representative of the finished floor surface, texture and color.

1.06 Quality Assurance

- A. Installer Qualification: Use only an installer that is certified in writing by the flooring system manufacturer of having completed a program of instruction in proper methods for preparation of substrate, possible delaminated areas, crack and joint repair and complete flooring installation.
- B. Mock-up: On site, fabricate a panel approximately 100 sq. ft. (10 sq. m) to demonstrate quality of finished floor system, complying with manufacturer's instructions. Install panel where directed by architect/engineer. Maintain panel as a standard of quality for all installations.

1.07 Delivery, Storage and Handling

- A. Deliver product in factory packages, clearly marked with manufacturer's identification, printed instructions, lot numbers and shelf life expiration date for each component.
- B. Store materials at 50°F to 90°F (10°C to 32°C) in dry environment away from sunlight, heat, or other hazards.

1.08 Project Conditions

- A. Maintain minimum concrete surface temperature of 55°F (12°C) for a minimum of 48 hours before, during and after installation, or until cured.
- B. Concrete must be free of hydrostatic, capillary or moisture vapor pressure. Substrates in contact with ground must have a properly installed, effective vapor barrier to help prevent potential problems resulting from hydrostatic, capillary or moisture vapor pressure. Concrete must contain less than 3% moisture when tested per ASTM D 1864.

1.08 Project Conditions, continued

- C. Concrete to receive a VERSACOLOR X-5, SOLVENT-FREE floor should have been designed and installed as approved by architect/engineer to minimize random cracking, curling, slab deflections and shall contain well designed control and isolation joints as approved by architect/engineer.
- D. Do not apply sealers or membrane curing agents to concrete. Moisture curing of concrete is recommended.
- E. Concretes containing lightweight aggregates are not recommended substrates.
- F. Provide ventilation, lighting and clean, drinkable water supply.
- G. Advise other trades of fixtures and fittings not to be installed until floor is cured, such as: radiators, painting, decorating, floor-supported equipment or cabinetwork, caulking, plumbing, fixtures, etc.
- H. Floors shall be kept free of traffic and no trades shall be permitted in rooms during the application and curing of the coating.
- I. Protect adjacent surfaces from damage resulting from work of this trade. If necessary, mask and/or cover adjacent surfaces, fixtures, equipment, etc. by suitable means.

PART 2 - PRODUCTS

2.01 Materials

- A. Epoxy Mosaic Flooring: VERSACOLOR X-5, SOLVENT-FREE by Master Builders, Inc.
- B. (OPTIONAL) Elastomeric Membrane: NEO-V by Master Builders, Inc. for waterproofing and to reduce reflective cracking from the substrate.

PART 3 - EXECUTION

3.01 Inspection

- A. Before starting work, ensure that environmental and site conditions are suitable for application and curing.
- B. Inspect surfaces for acceptability of levelness, moisture content, pitch to drains and other critical factors at time of installation.
- C. Report in writing to architect/engineer, with copy to manufacturer, of deficiencies that could impair work. Surfaces must be approved by the certified contractor prior to application of flooring.

3.02 Surface Preparation

- A. Prepare surfaces in accordance with manufacturer's instructions.
- B. Remove concrete laitance by steel shot blasting, grit blasting, or other method approved by manufacturer.
- C. Surface must be clean, sound and dry prior to application.
- D. Pre-fill surface irregularities, holes and cracks in accordance with manufacturer's recommendations.

3.03 Mixing

- A. Comply with manufacturer's instructions for mixing procedures.

3.03 Mixing, continued

- B. Pre-mix each component before every batch to ensure uniformity.
- C. Carefully measure and mix the components together.

3.04 Installation

- A. Follow manufacturer's written instructions.
- B. (OPTIONAL) Apply stretch coat of NEO-V to minimum width of 3 inches (75 mm) wide and 20 mils (0.4 mm) dry thickness over cracks in substrate.
- C. (OPTIONAL) Embed Pennflex tape or similar reinforcing fabric in NEO-V over cracks in substrate.
- D. (OPTIONAL) Install elastomeric membrane in multiple coats to a dry film thickness of 20 to 30 mils (0.4 to 0.6 mm).
- E. (OPTIONAL) Install cove and/or base in accordance with manufacturer's instructions.
- F. Prime entire surface with recommended primer.
- G. Apply epoxy and aggregate matrix in accordance with manufacturer's instruction to a total thickness of 3/16 inch (4.8 mm) to 1/4 inch (6.4 mm).
- H. Apply grout coat(s) and topcoat(s) at manufacturer's recommended coverage to provide uniform, dense surface.
- I. Allow proper cure time for each installation step.
- J. Allow the finished epoxy flooring to cure for a minimum of 7 days from completion before putting into service.
- K. Use temporary protection until flooring is fully cured.

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