

PART 1 GENERAL

1.1 SUMMARY

- A. Provide labor, materials, equipment and supervision necessary to install a minimum 3/16" – 1/4" nominal thickness methyl methacrylate (MMA) based self-leveling flooring system with solid color as outlined in this specification to new or existing concrete surfaces.
- B. The manufacturer's application instructions for each product used are considered part of this specification and should be followed at all times.
- C. Related Sections:
 - 1. Section 03 30 00: Cast-in-Place Concrete
 - 2. Section 03 39 00: Concrete Curing

1.2 SYSTEM DESCRIPTION

- A. FTS Self-Leveling Heavy Duty Membrane shall be a complete system of compatible materials supplied by Neogard to create methyl methacrylate (MMA) based seamless system with optional aluminum oxide broadcast and topcoat.
- B. FTS Self-Leveling Heavy Duty Membrane shall be designated for application on the specific type of floor indicated on the drawings.
- C. The work shall consist of preparation of the substrate, the furnishing and application of a methyl methacrylate (MMA) based seamless system with optional aluminum oxide or sand broadcast and topcoat. The system shall have the color and texture as specified by the Owner with a nominal thickness of approximately 3/16" – 1/4" . It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations
- D. Cove base (if required) to be applied where noted on plans and per manufacturers standard details unless otherwise noted.

1.3 SUBMITTALS

- A. Technical Data: Submit manufacturer's product data, Safety Data Sheets (SDS) and installation instructions.
- B. Samples: Submit a minimum of 4" samples of FTS Self-Leveling Heavy Duty Membrane flooring system. Samples shall be construed as examples of finished color and texture of the system only. The installed flooring system shall be like the accepted sample in thickness of respective film layers, color, texture, overall appearance and finish.
- C. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the FTS Self-Leveling Heavy Duty Membrane flooring system. Each bidder for this project shall be prequalified and approved by the material manufacturer at the time of bid submittal. Acceptability will include judgement on equipment, history, and financial strength. In no case will Neogard allow the application of any of its materials by untrained, non-approved Contractors or personnel.
- D. Surface preparation efforts shall be evaluated by conducting Bond Tests at the site prior to application of the flooring system, consult with Material Manufacturer for specific procedure.
- E. Warranty: Submit copy of manufacturer's standard sample warranty, identifying the terms and conditions stated in section 1.7 Warranty.

1.4 QUALITY ASSURANCE

- A. Supplier Qualifications: FTS Self-Leveling Heavy Duty Membrane, as supplied by Neogard, is approved for use on this project.
- B. Applicator Qualifications: Applicator shall be approved to install specified system.
- C. No request for substitution shall be considered that would change the generic type of floor system specified. Equivalent materials of other manufactures may be substituted only on approval of Architect or Engineer. 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.
- D. Pre-qualification requirements: Each bidder for this project shall be prequalified and approved by the material manufacturer at the time of bid submittal. Acceptability will include judgement on equipment, history, and financial strength. In no case will Neogard allow the application of any of its materials by untrained, non-approved Contractors or personnel
 - 1. Each approved applicator shall have been trained by the Manufacturer in all phases of surface preparation and application of the specified flooring system
 - 2. Each approved applicator must have five years of experience installing the specified flooring system and submit a list of five projects/references as a prequalification requirement of equal size, quantity, and magnitude to this project as a prequalification requirement. Owner has the option to personally inspect the projects/references to accept or reject any of the Contractors prior to bid time as a prequalification requirement
- E. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, through one source from a single manufacturer, with not less than ten years of successful experience in manufacturing and installing principal materials described in this section
- F. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.
- G. Surface preparation efforts shall be evaluated by conducting Bond Tests at the site prior to application of the flooring system, consult with Material Manufacturer for specific procedure
- H. Requirement of Regulatory Agencies: Specified materials shall meet existing Federal, State and local VOC regulations.
- I. Field Sample:
 - 1. Install a field sample of at least 100 square feet at the project site or pre-selected area as agreed to by owner's representative, applicator and manufacturer.
 - 2. Apply material in accordance with manufacturer's written application instructions.
 - 3. Field sample will be standard for judging color and texture on remainder of project.
 - 4. Maintain field sample during construction for workmanship comparison.
 - 5. Do not alter, move, or destroy field sample until work is completed and approved by Owner's representative.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Materials shall be delivered in original sealed containers, clearly marked with supplier's name, brand name and type of material.
- B. Storage and Handling: Store materials to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects. Store material per product data sheet. Handle products to prevent damage to container. All materials shall be stored in compliance with local fire and safety requirements. Do not store at high temperatures or in direct sunlight.

1.6 PROJECT CONDITIONS

- A. Read and follow the SDS and container labels for detailed health and safety information.
- B. Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.
- C. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends longer.
- D. Coordinate flooring work with other trades. Applicator shall have sole right of access to the specified area for the time needed to complete the application and allow the flooring system to cure adequately.
- E. Protect adjacent surfaces from damage resulting from installation of the system. If necessary, mask and/or cover adjacent surfaces, fixtures, equipment, and others by suitable means.
- F. Provide adequate ventilation.
- G. Conditions required of new concrete to be coated with MMA materials
 - 1. Concrete shall be moisture cured for a minimum of 7 days at 70° F. The concrete must be fully cured for a minimum of 28 days prior to application of the coating system
 - 2. Surface contaminants such as curing agents, membranes, or other bond breakers should not be used
 - 3. Concrete shall have a rubbed, float, or darby finish. A hard steel trowel is neither necessary nor desirable
 - 4. Drains should be set to the concrete grade rather than raised to the finished grade of the topping
- H. If any of the above conditions are not met, consult with your Neogard sales or technical representative.

1.7 WARRANTY

- A. Upon request, Neogard shall offer a manufacturer's standard warranty for institutional, commercial, industrial, and high-rise/multi-family residential projects only, upon substantial completion of the application and receipt of a properly executed warranty request form.

PART 2 MATERIALS

2.1 MANUFACTURER

- A. Neogard, a part of Hempel, 2728 Empire Central, Dallas, TX 75235, (214) 353-1600, www.neogard.com.

2.2 MATERIALS

- A. FTS Self-Leveling Heavy Duty Membrane (Hempel product numbers in parentheses):
 - 1. FTS 100/101 (883J9/884JB) primer resin/adhesion promoter
 - a. Resin type: Methyl Methacrylate
 - b. Formulation description: (3) component, low viscosity
 - c. Application method: roller applied
 - d. Number of coats: (1) one

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2. FTS 200 (885J9) Flex Resin
 - a. Resin type: Methyl Methacrylate
 - b. Formulation description: (2) component, medium viscosity
 - c. Application method: Notched squeegee or roller
 - d. Thickness: 30-35 mils
 - e. Number of coats: (1) One
3. FTS 200 (885J9) Flex Resin
 - a. Resin type: Methyl Methacrylate
 - b. Formulation description: (2) component, medium viscosity
 - c. Application method: Gauge Rake
 - d. Thickness: 1/8"
 - e. Number of coats: (1) One
4. Broadcast (86364)
 - a. 20/40 Mesh Neogard
 - b. Formulation description: Silica Quartz Sand, 20-40 Mesh
 - c. Finish: Broadcast to rejection
5. FTS 450 (891J9) Topcoat
 - a. Resin type: Methyl Methacrylate
 - b. Formulation description: (2) component, low viscosity, UV stable
 - c. Type: pigmented
 - d. Number of coats: (2) Two

2.3 MATERIAL PERFORMANCE CRITERIA

- A. Typical physical properties of cured FTS Self-Leveling Heavy Duty Membrane on a project are :
1. Percent solid: 100%
 2. Tensile strength,: 3,850 psi per ASTM D638
 3. Tensile modulus: 470,000 psi per ASTM D638
 4. Hardness: 0.85 per ASTM D2240
 5. Compressive strength: 8,000 psi per ASTM C109
 6. Linear Coefficient of Thermal Expansion: 3.5×10^{-5} in./in. °F per ASTM D696)
 7. Water Vapor Transmission (DIN 53122): 1.43 g/cm-hr-mm HG x 10^{-9}
- B. The above tested results are typical values. Individual lots may vary up to 10% from the typical value. Further technical information can be found at www.neogard.com

2.4 ACCESSORIES

- A. Miscellaneous materials shall be compatible with the specified FTS Self-Leveling Heavy Duty Membrane system.
1. Accessory Materials:
 - a. Patching, leveling, and fill materials: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated
 - b. Joint sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated.

2.5 MIXING

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

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that the work done under other sections meets the following requirements:
 - 1. That the concrete deck surface is free of ridges and sharp projections, sound and dry.
 - 2. That the concrete was cured for a minimum of 28 days. (Minimum of 3,500 psi compressive strength). The use of concrete curing agents, if any, shall be of the sodium silicate base only; others require written approval by Neogard.
 - 3. That damaged areas of the concrete substrate be restored to match adjacent areas
 - 4. Relative Humidity is not to exceed 85% when tested by In-situ Probe Test (ASTM F2170).

3.2 PREPARATION

- A. General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean and dry substrate for resinous flooring application
- B. 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
 - 1. All accessible concrete deck surfaces shall be mechanically blast cleaned using a mobile steel shot, dust recycling machine such as BLASTRAC®, as manufactured by BLASTRAC, NA, or approved equivalent. All surface and embedded accumulations of paint, toppings, hardened concrete layers, laitance, power trowel finishes, and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a profile of CSP 4 or higher according to the Concrete Repair Institute's Concrete Surface Profile Scale and exposing the upper fascia of concrete aggregate
 - 2. Areas inaccessible to the mobile blast cleaning machines shall be mechanically abraded to the same degree of cleanliness, soundness, and profile using vertical disc scarifiers, scarifiers, needle guns, scabblers, or other suitably effective equipment
 - 3. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations
 - 4. Verify that concrete substrates meet the following requirements
 - a. Perform in situ probe test, ASTM F 2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity of 85 percent
 - b. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture-vapor-emission rate of 5 lb. of water/1000 sq. ft. of slab in 24 hours
 - c. If these conditions cannot be met, discuss additional recommendations with your Neogard sales representative
 - d. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions
 - e. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations

PART 4 APPLICATION

4.1 APPLICATION

- A. General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated
1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum inter-coat adhesion
 2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes
 3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations
 - a. Apply joint sealant to comply with manufacturer's written recommendations

- B. Primer: Mix and apply primer over properly prepared substrate with strict adherence to manufacturer's installation procedures and coverage rates

FTS 100 w/ FTS 101 (100 SF/Gal) or 16 mils DFT

- C. Integral Cove Base: 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 and top coating of cove base. Round internal and external corners. Refer to detail drawings.

- D. Membrane: Mix base material according to manufacturer's recommended procedures. Uniformly spread mixed material over previously primed substrate using manufacturer's installation tool. Roll material with strict adherence to manufacturer's installation procedures and coverage rates.

FTS 200 (46 SF/Gal) or 35 mils

- E. Body coat: Mix base material according to manufacturer's recommended procedures. Uniformly spread mixed material over previously primed substrate using manufacturer's installation tool. Roll material with strict adherence to manufacturer's installation procedures and coverage rates.

FTS 200 + 1 bag FTS 40# Filler Bag + 8 oz. Pigment yields 40 SF/Gal @ 1/8"

- F. Broadcast: Immediately broadcast silica sand 20/40 mesh into the body coat to rejection. Strict adherence to manufacturer's installation procedures and coverage rates is imperative.

- G. First topcoat: Remove excess un-bonded sand by lightly brushing and vacuuming the floor surface. Mix and apply sealer with strict adherence to manufacturer's installation procedures.

FTS 450 (80 SF/Gal) or 20 mils DFT

- H. Second topcoat: Mix and apply second sealer coat with strict adherence to manufacturer's installation procedures.

FTS 450 (100 SF/Gal) or 16 mils DFT

- I. Applicator is responsible for applying sufficient coating to the substrate.

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4.2 TERMINATIONS

- A. Chase edges to anchor the system into the substrate along the lines of termination
- B. Trenches: Continue coating system into trenches to maintain monolithic protection. Treat cold joints to assure bridging of potential cracks
- C. Treat floor drains by chasing the coating to lock in place at point of termination

4.3 JOINTS AND CRACKS

- A. Treat control joints to maintain a monolithic system
- B. 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
- C. Vertical and horizontal contraction and expansion joints are treated 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

4.4 FIELD QUALITY CONTROL

- A. On site test and inspections performed by the approved applicator
 - 1. Air, substrate temperatures and, if applicable, dew point
 - 2. Bond test of the primer to the substrate
 - 3. Rate for all layers to be monitored by checking quantity of material used against the area covered

4.5 CLEANING

- A. Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer. General Contractor is responsible for cleaning prior to inspection
- B. Refer to the Preventive Maintenance Manual for Neogard Floor Coating Systems for typical cleaning methods.

4.6 CURING AND PROTECTION

- A. 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.
- B. 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

Issued by: Hempel (USA) – Neogard FTS Self-Leveling Heavy Duty Solid Color

This Guide Specification ("Guide Spec") relates to the supplied products/system ("System") and is subject to update from time-to-time. Accordingly, the buyer/applicator should refer to the Guide Spec current as of the time of delivery. In addition to the Guide Spec, the buyer/applicator may receive some or all of the specifications, statements and/or guidelines listed below or available at www.neogard.com (the "Additional Documents"):

No.	Document Description
1	PDS
2	Guide Specification
3	Application Manual
4	Other Technical Support Information (i.e. summary application tables, troubleshooting guides, maintenance manuals, chemical resistance charts and other technical information)

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In the event of a conflict between this Guide Spec and the Additional Documents, the conflict shall be resolved in accordance with the order of priority set forth above. In addition, the buyer/applicator should refer to the relevant Safety Data Sheets current as of the time of delivery of the System and available at www.neogard.com. Buyer/applicator is responsible for determining the suitability of the intended use of the System, and Neogard disclaims all responsibility for any use, handling and storage of any components of the System that are not in accordance with the requirements set forth in the relevant PDS(s), this Guide Spec and the Additional Documents. The terms and provisions hereof apply to this Guide Spec, the Additional Documents and any other documents supplied by Neogard in respect of the System. The System is supplied and all technical assistance is given subject to the General Conditions of Sale of Hempel Products and/or Services available at www.hempel.com. NEOGARD MAKES NO OTHER WARRANTY THAT EXTENDS BEYOND THE WARRANTY REFERENCED THEREIN INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEOGARD WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION, OR THAT IN ANY WAY ARISE IN RELATION TO THE SYSTEM. FTS SL HD Membrane GSCSI sas 03012023.docx

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