

THIS IS A SAMPLE SPECIFICATION FOR THE INDICATED PRODUCT. IT IS THE RESPONSIBILITY OF THE SPECIFIER AND/OR END USER TO DETERMINE THE SUITABILITY OF A PRODUCT OR SYSTEM FOR A PARTICULAR PURPOSE.

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including *MasterFormat* (2004 Edition), *SectionFormat*, and *PageFormat*, contained in the CSI *Manual of Practice*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate with other specification sections and the drawings.

SECTION 09 67 23

PurCem[®] 22N

Heavy Duty Troweled Urethane Concrete Flooring

Specifier Notes: This section covers Sika Flooring's "PurCem[®] 22N."

PurCem[®] 22N is a urethane cement medium duty system (3/16 – 1/4-inch/4.5mm – 6.25mm) used to overlay, resurface and repair worn or eroded floors in medium to heavy-duty industrial use.

PurCem[®] 22N conforms to USDA guidelines for use in federally inspected meat and poultry plants.

Consult Sika Corporation (Industrial Flooring) for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Polyurethane/cementitious corrosion resistant industrial flooring for interior concrete surfaces.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list as required for the project. List other sections with work directly related to the floor coating.

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 03 01 00 - Concrete Rehabilitation.
- C. Section 03 39 00 – Concrete Curing

1.3 REFERENCES

Specifier Notes: List standards referenced in the section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. ASTM C 307 - Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing.
- B. ASTM C 413 - Absorption of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacing.
- C. ASTM C 579 - Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
- D. ASTM D 696 - Coefficient of Linear Thermal Expansion of Plastics.
- E. ASTM D 2240 - Rubber Property - Durometer Hardness.
- F. ASTM D 4258 - Surface Cleaning Concrete for Coating.
- G. ASTM D 4259 - Abrading Concrete.

- H. ICRI Guideline 03732 – Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings and Polymer Overlays

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including physical properties and colors available.
- C. Maintenance Instructions: Submit manufacturer's maintenance instructions, including maintenance procedures and materials, procedures for stain removal and surface repair, and recommended schedule for cleaning.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Applicator: Use applicator experienced in application of specified materials on projects of similar size and complexity. Provide list of completed projects including project name and location, name of architect, name of material manufacturer, and approximate quantity of materials applied.
 - 2. Applicator's Personnel: Employ only persons trained for application of specified materials.

Specifier Notes: Describe requirements for a meeting to coordinate the application of the floor coating and to sequence related work.

- B. Pre-application Meeting: Convene a pre-application meeting [2] [Two] weeks before start of application of floor coating. Require attendance of parties directly affecting work of this section, including Contractor, Architect, applicator, and manufacturer's representative. Review surface preparation, priming, application, curing, protection, and coordination with other work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, manufacturer, batch or lot number, and date of manufacture. Do not store materials in direct sunlight.
- B. Storage:
 - 1. Store between 50-75°F (10°-25°C), do not store in direct sunlight or high heat conditions.
 - 2. Keep containers sealed until ready for use.
 - 3. Do not subject material to freezing; do not apply material that has been subjected to freezing. Material subjected to freezing shall be separated from inventory and destroyed by mixing all three components. The solid reacted product shall be disposed of in environmentally sound and regulatory compliant manner.
- C. Handling: Protect materials during handling and application to prevent damage or contamination.
- D. Condition materials for use to 60°-70°F (15-21°C) for 24 hours prior to application.

1.7 ENVIRONMENTAL CONDITIONS

- A. Do not apply materials if floor or air temperature is below 45°F/7°C or above 85°F/30°C.
- B. Do not apply materials if relative humidity is above 85% (percent) or within 5° (3°) of dew point at time of application.
- C. Utilities, including electric, water, heat and finished lighting to be supplied by General Contractor
- D. Maintain room temperature between 45°F – 85°F (7°C - 30°C) for 48 hours before, during and 48 hours after installation, or until cured.

- E. At the time of application ensure the minimum substrate temperature is above 45°F (10°C) and the substrate temperature is 5°F (3°C) above the measured dew point.
- F. Erect suitable barriers and post legible signs at points of entry to prevent traffic and trades from entering the work area during application and cure period of the floor.
- G. Protection of finished floor from damage by subsequent trades shall be the responsibility of the General Contractor.

1.8 WARRANTY

- A. Provide a warranty covering materials and workmanship for a period of [one] year after date of installation.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer shall be certified under ISO 9001: All liquid materials, including primers, resins, curing agents, finish coats, and sealants are manufactured and tested under an ISO 9001 registered quality system.
- B. Approved Manufacturer shall be Sika Corp., Industrial Flooring, 201 Polito Avenue, Lyndhurst, NJ 07071
Phone 201.933.8800
Fax 201.933.6225 www.sikafloorusa.com

2.2 MATERIALS

- A. PurCem® 22N Flooring.
 1. Description: Three-component, trowelable polyurethane/cementitious concrete floor resurfacer, (3/16 – 1/4-inch/4.5mm – 6.25mm) thickness. 22n PurCem, a seamless, self-leveling, solid color, neutral odor, high strength, water based polyurethane cement floor screed system that provides improved thermal shock resistance, excellent chemical, impact and abrasion resistance. 22N PurCem is broadcast with quartz aggregate to increase surface texture and slip resistance.
 2. Compressive Strength: ASTM C 597: 5,800 psi.
 3. Tensile Strength: ASTM C 307, 950 psi (6.5 Mpa)
 4. Thermal Conductivity: ASTM C-518-98: 6.5 Btu
 5. Coefficient of Thermal Expansion: ASTM C-531: 0.89 x 10⁻⁵ in./in./F°
 6. Impact Resistance: ASTM D-2794) 5.02 ft/lb (6.81 joules) at 1/8-inch (3 mm) of thickness
 7. Hardness: ASTM D 2240, Shore D: 80-85
 8. Flexural Strength: ASTM C 580, 2,100 psi (14.7 Mpa)
 11. Water Absorption: ASTM C-413 <0.1%
 12. Abrasion Resistance: ASTM D 4060 0.110 g loss, CS-17 wheel, 1,000g/1,000 cycles
 13. Coefficient of Friction: ASTM D 1894-61T 0.8
 14. Bond Strength: ASTM D-4541) > 250 psi (1.75 MPa) (substrate failure)
 15. Heat Resistance:
 - a. Continual Exposure: 212° F. (100° C)
 - b. Resists hot water wash down at sanitizing temperatures with PurCem 31N topcoat.
 16. PurCem® Color: _____ [Refer to PurCem® color chart]
- B. PurCem 31N Thin Film Coating
 1. Description: Three-component, high solids, polyurethane/cementitious-based thin-film coating to be used as stand-alone coating or as final/lock coat for 22N quartz broadcast system.
 2. Application Thickness: Apply to broadcast quartz surface of 22N with squeegee and nap roller. Refer to PurCem 31N technical bulletin for recommended coverage rates.
 3. Alternate Top Coats: As specified by the Architect.

Specifier Notes: Determine if cove base or other detail treatment is required by the Architect. Describe requirements for cove base or curb rendering here. Omit if not required.

- C. PurCem[®] 29N Cove Mortar/Vertical Grade.
 - 1. Description: Three-component, high solids, polyurethane/cementitious-based trowelable cove base, integral with floor
 - 2. Height: 4 inches, or as required by Architect.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive PurCem[®] 22N urethane concrete floor resurfacer. Notify Architect if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.
- B. Application of PurCem[®] can be installed over concrete less than 30 days old. Consult Technical Service prior to application when concrete has not cured for 30 days.
- D. Do not apply Sika PurCem[®] 22N to sand-cement setting beds, regardless of condition. Sand-cement beds shall be removed to structural concrete substrate and re-leveled/sloped as necessary to achieve grade and/or adequate drainage.
- E. Do not apply to asphaltic or bitumen membranes, glazed or vitrified brick and tile, soft wood, aluminum, copper or fiberglass reinforced polyester/vinyl ester composites.

3.2 SURFACE PREPARATION

- A. Prepare concrete surfaces in accordance with manufacturer's instructions and ASTM D 4258.
- B. Remove dirt, oil, grease, wax, laitance, curing compounds, water-soluble concrete hardeners, and other surface contaminants.
- C. Remove sealers, finishes, and paints.
- D. Remove unsound concrete by scarifying, sand blasting, shot blasting, or high pressure water blasting.
- E. Chemical Surface Preparation:
 - 1. Chemical surface preparation (acid etching) is unacceptable and will void Manufacturer's warranty.
- F. Mechanical Surface Preparation:
 - 1. Mechanically abrade concrete surface in accordance with manufacturer's instructions.
 - 2. Leave concrete surface with an aggressive texture.
 - 3. Remove concrete dust.
 - 4. Conform to ASTM D 4259.
 - 5. Surface profile shall conform to IRCI Guideline 03732, CSP 3-6
 - 6. All outside edges that do not terminate against a wall or curb must be "keyed" to avoid featheredges. All through floor penetrations such as drains and trenches require a keyed edge that maintains a uniform 1/8" (3 mm) thickness.

3.3 CONTROL JOINTS, CRACKS

- A. Provide repair and treatment of control joints and surface cracks utilizing manufacturer's standard materials and installation details.

3.4 APPLICATION

- A. Repair concrete substrate as required using materials approved by the Manufacturer. Repair concrete substrate as required using SikaQuick® 1000 cementious repair/resurfacer in accordance with Manufacturer's instructions.
- B. Do not add thinners to materials. No thinners shall be approved or allowed.
- C. For coverage rates, consult data sheet for the specific grade of PurCem®.
- D. Finish surface to be smooth, with uniform texture, free of surface defects, and without porous areas.
- E. Follow Manufacturer's recommendations on terminations and connections to walls, drains, doorways, columns and floor-to-floor transitions.

3.4 CLEANUP

- A. Remove masking, draping, and other protection from adjacent surfaces.
- B. Remove remaining materials and debris from job site and dispose of them in according with local rules and regulations. Leave area in clean condition free of debris.

3.5 PROTECTION

- A. Protect PurCem® floor resurfacer during curing from traffic and chemical spillage. Based on air temperature of 68°F/20°C
 1. Foot Traffic: 10 –12 hours.
 2. Full Cure: 5 days

END OF SECTION

See legal disclaimer and pertinent information following

All information provided by Sika Corporation ("Sika") concerning Sika products, including but not limited to, any recommendations and advice relating to the application and use of Sika products, is given in good faith based on Sika's current experience and knowledge of its products when properly stored, handled and applied under normal conditions in accordance with Sika's instructions. In practice, the differences in materials, substrates, storage and handling conditions, actual site conditions and other factors outside of Sika's control are such that Sika assumes no liability for the provision of such information, advice, recommendations or instructions related to its products, nor shall any legal relationship be created by or arise from the provision of such information, advice, recommendations or instructions related to its products. The user of the Sika product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with the full application of the product(s).

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Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Technical Data Sheet, product label and Material Safety Data Sheet that are available at www.sikaconstruction.com or 1-800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Technical Data Sheet, product label and Material Safety Data Sheet prior to product use.

Quality Certification Numbers: Lyndhurst: FM 69711 (ISO 9000), FM 70421 (QS 9000), Marion: FM 69715, Kansas City: FM 69107, Santa Fe Springs: FM 69408

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