

FallZone Poured-in-Place Specification

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PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Poured-in-place playground surfacing system.

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. In the absence of related sections, delete paragraph below.

Specifier Note: Site materials and methods, drainage, playground equipment, fencing, substrate preparation and similar work is provided by others and is described in other sections. Consult manufacturer for specific substrate preparation requirements. Edit, retain or delete paragraph below to suit project requirements and specifier practice.

B. Related Sections: Division 2 Sitework Sections: Materials and Methods, Excavation, Asphalt Paving, Concrete Paving, Sub-Drainage, Storm Drainage, Fencing, Playground Equipment and Structures.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard. It is a listing of all references used in this section.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

B. Deutsche Industry Norm (DIN)

C. Center for Sports Technology (CST)

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

1.03 SYSTEM DESCRIPTION

Performance Requirements: Provide a 2 layer rubber-polyurethane playground surfacing system which has been designed, manufactured and installed to these criteria:

(Testing results may vary)

A. Thermal Resistance: R=2.32

(ASTM C 518-76)

B. Thermal Conductivity: K=0.75

(ASTM D 257)

C. Electrical Conductivity: 1.1 x 10.4

(Slemans-meter)

D. Compression Endurance: No deterioration

(10,000 cycle's w/10 ton load)

E. Flash Point: Between 650 & 800 F

F. Flame Spread/Smoke Density: LLL-T-43 Type -2

G. Flammability: Greatest radius 1''

(CST London 90609/1)

H. Abrasion Resistance: 0.3812G Loss

(ASTM D 1044)

I. Flexibility Factor: 0-1

J. Accelerated Weathering: No change

(2500 Hours)

K. Durability: Wear index (g/1000 revolutions)

(CST London 9609/1)

L. Water Aged: 1.61/UV aged: 1.92/ Pass/Approved

M. Water Permeability (Porous System): 1.7ltr/Sec/Sq. meter

(DIN 18035 G) 0.4 gal/Sec/sq yd

N. Thermal Stability Range: -50C to + 100C

O. Freeze/Thaw: No Change

P. Coefficient of Friction: 1.0 dry/0.9 wet

(ASTM D 2047-82)

Q. Skid Resistance: 89 dry/57 wet

(CST London, ASTM E 303-93)

R. Tensile psi: 200 psi(top surface)

(ASTM D412)

S. Elongation: 173%

T. Tear Strength: 64 psi typical (base mat)

U. Chlorine Resistance: Tensile strength (P SI) 122 immersed in 2.1% sodium hypochlorite solution: Pass

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Verification Samples: Submit manufacturer's standard verification samples of 9" x 9" (229 x 229 mm) minimum.

D. Quality Assurance/Control Submittals: Submit the following:

1. Certificate of qualifications of the playground surfacing installer.

E. Closeout Submittals: Submit the following:

1. Warranty documents specified herein.

Specifier Note: Article below should include statements of prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

1.05 QUALITY ASSURANCE

A. Qualifications: Utilize an installer approved and trained by the manufacturer of the playground surfacing system, having experience with other projects of the scope and scale of the work described in this section.

B. Certifications: Certification by manufacturer that installer is an approved applicator of the playground surfacing system.

Specifier Note: Article below should include specific protection and environmental conditions required during storage. Coordinate article below with Division 1 Product Requirements Section.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

Specifier Note: In article below, state physical or environmental limitations or criteria for installation such as weather, temperature, humidity, ventilation or illumination required for proper installation or application.

1.07 PROJECT/SITE CONDITIONS

A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section. Use this article to require special or extended warranty or bond covering the work of this section.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

C. Proper drainage is critical to the longevity of the porous FallZone Poured-in-Place surfacing system.

Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.

Specifier Note: Coordinate subparagraph below with manufacturer's warranty requirements.

1. Warranty Period: 7 years from date of completion of work.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 Poured-in-Place Playground Surfacing System

Specifier Note: Retain or delete paragraph below per project requirements and specifier's practice.

A. Manufacturer: FallZone Safety Surfacing.

B. Proprietary Products/Systems. Poured-in-place playground surfacing system, including the following:

1. FallZone Poured-In-Place

a. Material: Polyurethane.

2. FallZone Poured-in-Place Base mat:

a. Material: Blend of 100% recycled SBR (styrene butadiene rubber) and 100% MDI based elastic polyurethane w/minimal odor and excellent weathering and binding characteristics.

Specifier Note: The type of playground equipment determines the required base mat thickness, and the base mat thickness may be different at various locations on the playground site.(FallZone Safety Surfacing does not determine fall heights) Depending on ASTM F1292 requirements for critical fall height (4', 5', 6', 7', 8', 9' or 10' (1219, 1524, 1829, 2134, 2438, 2743 or 3048 mm)), select base mat thickness from options provided in subparagraph below (1 1/4 ", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4" or 5" (31.75, 38, 51, 64, 76, 89 or 102 mm), respectively). Specify project requirements below and coordinate with working drawings.

b. Thickness: [1 1/4 " (31.75 mm)] [1 1/2" (38 mm)] [2" (51 mm)] [2 1/2" (64 mm)] [3" (76 mm)] [3 1/2" (89 mm)] [4" (102 mm)] [5" (127mm)].

c. Formulation Components: Blend of strand and granular material.

3. FallZone Poured-In-Place Top Surface:

- a. Material: UV Stable Blend of recycled EPDM (ethylene propylene diene monomer) and 100% MDI based elastic polyurethane w/minimal odor and excellent weathering and binding characteristics.
- b. Thickness: Nominal 1/2" (12.7 mm), minimum 3/8" (9.5 mm), maximum 5/8" (15.9 mm).
- c. Color: [Standard Combination - 50% Terra Cotta Red / 50% Black] [Standard Combination - 50% Beige / 50% Black] [Standard Combination - 50% Hunter Green / 50% Black] [Standard Combination - 50% Royal Blue / 50% Black] [Terra Cotta Red] [Primary Red] [Orange (indoor only)] [Pink] [Gold] [Beige] [Yellow] [Bright Green] [Army Green] [Hunter Green] [Teal] [Sky Blue] [Royal Blue] [Purple] [Pearl] [Eggshell] [Brown] [Light Gray] [Dark Gray] [Black][Custom color (specify requirements)].

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

Specifier Note: Specify proportions and procedures for site mixing materials. Mixing is the preparation of materials for use and is considered to be part of the manufacturing process.

2.03 MIXES

A. Required mix proportions by weight:

- 1. Basemat: 14% polyurethane, 86% rubber.
- 2. Top Surface: 18% polyurethane, 82% rubber.

PART 3 EXECUTION

Specifier Note: Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the playground surfacing manufacturer.

Specifier Note: Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the playground surfacing system.

B. Do not proceed with installation until unsuitable conditions are corrected.

C. Proper drainage is critical to the longevity of the pourous FallZone Poured-in-Place surfacing system.

Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.

Specifier Note: Specify actions required to physically prepare the surface, area, or site or to incorporate the primary products of the section.

3.03 PREPARATION

A. Surface Preparation: Using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).

Specifier Note: Coordinate article below with manufacturer's recommended installation requirements.

3.04 INSTALLATION

A. Do not proceed with playground surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.

B. Base mat Installation:

1. Using screeds and hand trowels, install the base mat at a consistent density of 29 pounds, 1 ounce per cubic foot (466 kg/m³) to the specified thickness.
2. Allow base mat to cure for sufficient time so that indentations are not left in the base mat from applicator foot traffic or equipment.
3. Do not allow foot traffic or use of the base mat surface until it is sufficiently cured.

C. Primer Application: Using a brush or short nap roller, apply primer to the base mat perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).

D. Top Surface Installation:

1. Using a hand trowel, install top surface at a consistent density of 58 pounds, 9 ounces per cubic foot (938 kg/m³) to a nominal thickness of 1/2" (12.7 mm).
2. Allow top surface to cure for a minimum of 48 hours.
3. At the end of the minimum curing period, verify that the top surface is sufficiently dry and firm to allow foot traffic and use without damage to the surface.
4. Do not allow foot traffic or use of the surface until it is sufficiently cured.

Specifier Note: Specify provisions for protecting work after installation but prior to acceptance by the owner. Coordinate article below with Division 1 Execution Requirements Section.

3.05 PROTECTION

A. Protect the installed playground surface from damage resulting from subsequent construction activity on the site.