Rubber Designs-Spec–PIP-Bonded Rubber Trails

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to thisSection.

1.02 SUMMARY

A. Section Includes:

1. Unitary synthetic poured Single Density rubber seamless surface.

1.03 DEFINITIONS

A. Critical Height: Standard measure of shock attenuation. According to CPSC No. 325, this means "the fall height below which a life-threatening head injury would not be expected to occur."

1.04 PERFORMANCE REQUIREMENTS

A. Accessibility of Surface Systems: According to ASTM F 1951-14 or latest version.

B. IPEMA certified: Product and crew chiefs must be IPEMA certified

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. LEED Submittals:

1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each producthaving recycled content.

C. Shop Drawings: For each trail surface system, include materials, plans, cross sections, drainage, installation, and edge termination. Include patterns made by varying colors of surfacing. Include details of graphics.

D. Samples for Initial Selection:

1. Include similar samples of trail surface system and accessoriesinvolving color selection.

E. Samples for Verification: For each type of trail surface system indicated.

1. Minimum 6x6 Sample of synthetic rubber seamless surface.

F. Product Schedule: For trail surface systems.

1.06 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Plans, drawn to scale, on which the following items areshown and coordinated with each other, using input from Installers of the items involved:
   1. Extent of surface systems.
B. Qualification Data: For qualified Installer and testing agency.
C. Product Certificates: For each type of unitary synthetic trail surface system,from manufacturer.
D. Product Test Reports: Based on evaluation of comprehensive tests performed by aqualified testing agency, for each unitary synthetic trail surface system.
E. Field quality-control reports.
F. Warranty: Sample of Warranty. Minimum of 3 years not pro-rated

1.07 CLOSEOUT SUBMITTALS

A. Maintenance Data: For trail surface system to include in maintenance manuals.
B. Material Certificates: Material certificates will be filled out and signed by

specified manufacturer/supplier that specified materials were shipped and in proper amounts for square footage/thickness/color.

1.08 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged withprotective covering for storage and identified with labels describing contents.

1.09 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer. Crew Chief must be IPEMA Certified.

B. Source Limitations: Obtain trail surface system materials, including primersand binders, from manufacturer specified.

1. Provide secondary materials including adhesives, primers**,** and repair materialsof type and from source recommended by manufacturer of trail surfacesystem materials.

C. Standards and Guidelines: Comply with CPSC No. 325, "Handbook for PublicTrail Safety"; ASTM F1292-18; and ASTM F 1487.

1.10 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit trail surface system installation to be performed according to manufacturers' written instructions and warranty requirements.

1.11 WARRANTY

1.12 Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of trail surface system that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Reduction in impact attenuation.
   b. Deterioration of surface and other materials beyond normal weatheringand wear and tear.

2. Warranty Period: 3 years from date of completion.

   a. Project warranty: Refer to conditions of the contract for project warrantyprovisions.

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

   c. Proper drainage is critical to the longevity of the Rubber Designs BondedRubber Poured in Place surfacing system. Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void thewarranty.

   d. Warranty Period: 3 years (when aromatic urethane for the surface isspecified): 3 years from date of completion of work.

PART 2 - PRODUCTS

2.01 UNITARY SYNTHETIC SINGLE-DENSITY SEAMLESS SURFACE

A. **Surface System:** Poured-in-place, single layer system of desired thickness.

1. Products: Subject to compliance with requirements, provide the following:

Manufacturer:
Rubber Designs
100 Russ Drive SE
Calhoun, GA 3070
www.rubberdesigns.com
877-978-2237

Urethane:
The Dow Chemical
Company2030 Willard H
Dow Center Midland, MI
48674-0000
800-258-2436
800-424-9300 Emergency Contact
Number

SDSQuestion@dow.com

Bonded Rubber Surfacing Impact Course: Minimum 1.5" thick using +4 SBRMulch Buffings Sieves 12.5mm (0%) 20 Sieve (98-100%) and the pan (0-2%). Manufactured from 100% post-consumer waste tire containing no metal or lead. Weight/Packaging: Specific Gravity: 1.25g/cm3 (D-53217); Bulk Density: 20#/cu. ft. (D-1859). Rubber to urethane ratio shall be 20% or 9lbs or urethane per 50lbs of rubber.

Trade name: Rubber Designs Colored Rubber Buffings

Colors: Red, Brown, Green, Yellow, Cyprus, Black and Pre-mixed combinationsof Rainbow, Rustic, Jungle.

Composition/information on ingredients:

CAS #	Component	Percent (%)
1334-86-4	Carbon Black	< 50
1314-13-2	Zinc Oxide	1-5
26780-96-1	Trimethyl Dehydroquinoline, Homopolymer	< 3
9003-55-8	Styrene Butadiene Rubber	< 60
9006-04-6	Natural Rubber	< 40
9003-35-4	Phenol Formaldehyde Resin	< 5
64742-54-7	Heavy Paraffinic Distillate	< 20
137-26-8	Tetramethylthiuram Disulfide	< 4

1. **Binder:** No Toluene Diphenyl Isocyanate (TDI) shall be used. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals. Weight of polyurethane shall be no less than 8.5 lbs. /gal (1.02 Kg/1) and no more than 9.0 lbs. /gal (1.14 Kg/1). Manufacturer is permitted to modify the type of urethane required to match extreme weather conditions. Substitutions must be equal to or exceed original quality, such as

   DOW Voramer MR 1105 and MR 1165 Urethanes.

2. Primer/Adhesive: Manufacturer's standard primer and weather-resistant, moisture-cured polyurethane adhesive suitable for unit, substrate, and location indicated.

3. Bonded Rubber Surfacing Color(s): Red, Brown, Green, Yellow, Cypress, Black and Pre-mixed combinations of Rainbow, Rustic, Jungle.

B. Leveling and Patching Material: Portland cement-based grout or epoxy- or polyurethane-based formulation suitable for exterior use and approved by trailsurface system manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION:

Examine substrates and conditions, with Installer present, for compliance with requirements for maximum moisture content, sub grade and substrate conditions, drainage, and other conditions affecting performance of the Work. Drainage at thelow end of the site is of the utmost importance. Any brick or concrete walls or curbs at the low end of the area to receive the play surface must have drainage access via weep holes. Weep holes must extend a minimum of 2 inches above the top of the newconcrete slab and a minimum of 1/8" below the top of the new concrete slab. The latter is necessary because the rubber surfacing system is porous, and water will permeate (drain downward) to the concrete slab.

A. Hard-Surface Substrates: Verify that substrates are satisfactory for unitary trail surface system installation and that substrate surfaces are dry, cured, and uniformly sloped to drain within recommended tolerances according to trail surface system manufacturer's written requirements for cross-section profile.

1. Asphalt Substrates: Verify that substrates are dry, sufficiently cured to bond with adhesive, free from surface defects, and free of dust, dirt, loose particles, grease, oil, and other contaminants incompatible with trail surface system or that may interfere with adhesive bond.

2. Concrete Substrates: Verify that substrates are dry, free from surface defects, and free of laitance, glaze, efflorescence, curing compounds, form-release agents, hardeners, dust, dirt, loose particles, grease, oil, and other contaminants incompatible with trail surface system or that may interfere with adhesive bond. Determine adhesion, dryness, and acidity characteristics by performing procedures recommended in writing by trail surface system manufacturer.

3. Stone Substrates: Verify that substrates are a minimum of 4" thick with proper drainage and compacted to 95%. Stone used shall be ¾ minus with screenings or suitable equivalent and shall vary no more than 1/8" within a 10 ft radius. Core drillings for equipment poles shall be filled flush to the top of the stone with concrete to prevent sinkholes after

installation of Bonded Rubber surface.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. General: Prepare substrates to receive surfacing products according to trail surface system manufacturer's written instructions. Verify that substrates are sound and without high spots, ridges, holes, and depressions.

B. Substrates: Provide sound surface free of laitance, efflorescence, curing compounds, and other contaminants incompatible with trail surface system.

1. Repair unsatisfactory surfaces and fill holes and depressions.
2. Mechanically scarify or otherwise prepare concrete substrates to achieve recommended degree of roughness.
3. Saw cut for terminal edges of trail surface systems as indicated.
4. Treat control joints and other nonmoving substrate cracks to prevent telegraphing through trail surface system.
5. Confirm slope and drainage are correct and in place.

3.03 INSTALLATION, GENERAL

A. General: Comply with trail surface system manufacturer's written installation instructions. Install trail surface system over area and in thickness indicated.

3.04 INSTALLATION OF SEAMLESS TRAIL SURFACE SYSTEMS

A. Seamless Surface: Mix and apply components of trail surface system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface.

1. Bonded Rubber Surface: Spread evenly over primed substrate to form a uniform layer applied at manufacturer's standard spreading rate in

one continuous operation, with a minimum of cold joints.

2. Edge Treatment: Fully adhere edges to substrate with full coverage of substrate. Maintain fully cushioned thickness as required to comply with safety performancerequirements.

4.01 FIELD QUALITY CONTROL

A. Testing Agency: A qualified testing agency to perform tests and inspections.

B. Testing Services: Testing and inspecting of completed applications of trail surface system shall take place according to ASTM F1292-18 or latest version.

C. Remove and replace applications of trail surface system where test results indicate that it does not comply with requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed todetermine compliance of replaced or additional work with requirements.

4.02 PROTECTION

A. Provide protection of surface during curing process.

END OF DOCUMENT