

Revised - August, 2012 by ASC

Product Guide Specification 32 18 16.13

RECMAT® Protective Playground Surfacing

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 this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

Specifier Notes: This section covers the following recreational surfacing materials from Zeager:

RECMAT® interlocking mats are manufactured from 90 percent recycled rubber. Designed to reduce injuries on playgrounds and provide a stable resilient surface. Tested according to ASTM methods to ensure compliance with ADA, ASTM, CPSC, and CSA standards for playground surfacing.

RECBASE® resilient foam base made from recycled foam in a thermal process that does not use chemicals. A layer of geotextile fabric is bonded to the top surface to ensure that the fabric will not get pulled up. Provides excellent vertical and horizontal drainage as well as adding extra fall protection.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Playground Surfacing.

1.2 RELATED SECTIONS

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

- A. Section 312000 – Earth Moving: Sub-grade preparation.
- B. Section 334600 – Sub-drainage: Drainage piping and aggregate drainage material.
- C. Section 116800 - Play Field Equipment and Structures: Playground equipment installed over playground surfacing.

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

Revised - August, 2012 by ASC

1.3 REFERENCES - RECMAT INTERLOCKING TILES

- A. ASTM C 67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
- B. ASTM C 501 – Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser.
- C. ASTM D 395 – Standard Test Methods for Rubber Property - Compression Set.
- D. ASTM D 412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
- E. ASTM D 573 – Standard Test Method for Rubber - Deterioration in an Air Oven.
- F. ASTM D 624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
- G. ASTM D 1667 – Standard Specification for Flexible Cellular Materials – Poly (Vinyl Chloride) Foam (Closed-Cell).
- H. ASTM D 2047 – Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
- I. ASTM D 2240 – Standard Test Method for Rubber Property - Durometer Hardness.
- J. ASTM D 2859 – Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.
- K. ASTM D 3676 – Standard Specification for Rubber Cellular Cushion Used for Carpet or Rug Underlay.
- L. ASTM E 108 – Standard Test Methods for Fire Tests of Roof Coverings.
- M. ASTM E 303 – Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
- N. ASTM F 1292 – Standard Specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment.
- O. ASTM F 1951 – Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.
- P. US Consumer Product Safety Commission (CPSC) Handbook for Public Playground Safety.

1.4 SYSTEM DESCRIPTION - UNITARY SYSTEMS

- A. System 71 RecMat®/RecBase®: RecMats® are manufactured from 90 percent recycled rubber. Designed to reduce injuries on playgrounds and provide a stable resilient surfacing. This tile utilizes a unique, interlocking channel that eliminates seam problems and joins to form a smooth surface for greater play value. Added fall height is achieved by adding layers of RecBase® below the tile.

Revised - August, 2012 by ASC

1. Available Accessories:

- a. Corners – prefabricated outside and inside corners made from same material as tiles.
 - b. Edges: Prefabricated edges made from same material as tiles.
 - c. ADA compliant ramp: made from same material as tiles.
 - d. Adhesive: Furnished by Zeager.
- B. Resilient foam base: RecBase® - A lightweight foam panel made from recycled, closed cell, cross linked, thermally fused polyethylene foam. A layer of fabric is thermally bonded to one side of the surface to prevent sediment from clogging the foam nuggets. For use under unitary surfaces such as rubber tiles, carpet, and artificial turf to add fall protection and improve drainage.

1.5 SUBMITTALS

- A. Comply with Section 013300 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including installation instructions, ASTM F 1292 test results, ASTM F1951 Accessibility test results, ASTM F2075 test results, and IPEMA Certificates of Compliance where applicable.
- C. Samples: Submit manufacturer's samples of each specified material.
- D. Maintenance Instructions: Submit manufacturer's maintenance instructions for playground surfacing.
- E. Warranty: Submit manufacturer's standard warranty.
- F. References: Submit at least 3 customers that have been using the product for at least 3 years.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 1. Member of International Play Equipment Manufacturer's Association (IPEMA).
 2. Total Liability Insurance Coverage: \$11,000,000.
 3. Sales Representatives trained by National Playground Safety Institute (NPSI).
- B. Installer Qualifications: A firm or individual certified, licensed, or otherwise qualified by surfacing manufacturer as experienced and with sufficient trained staff to install manufacturer's products according to specified requirements.

Specifier Notes: Describe requirements for a meeting to coordinate the installation of the playground surfacing and to sequence related work. Delete this paragraph if not required.

- C. Pre-installation Meeting: Convene a pre-installation meeting [2] [] weeks before start of installation of playground surfacing. Require attendance of parties directly affecting work of this section, including Contractor, Architect, and installer. Review installation and coordination with other work.

1.7 DELIVERY, STORAGE, AND HANDLING

Revised - August, 2012 by ASC

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer. Keep RecMat tiles in a cool, dry place and adhesive products from freezing.

1.8 WARRANTY

- A. Warranty Covers Playground Surfacing for Following Periods:
 - 1. Interlocking mats: 10 years.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Zeager Bros., Inc., 4000 East Harrisburg Pike, Middletown, Pennsylvania 17057. Toll Free (800) 346-8524. Phone (717) 944-7481. Fax (717) 944-7681. Web Site: www.zeager.com. E-Mail sales@zeager.com.
- B. Zeager Hardwood Co., 340 Steele Road, Franklin, Kentucky. Toll Free (800) 296-9227. Phone (270) 586-4491. Fax (270) 586-4493. Web Site: www.zeager.com. E-Mail zhc@zeager.com.

2.2 PLAYGROUND SURFACING

Specifier Notes: Consult Zeager Bros. for assistance in editing this article for the specific application.

- A. Interlocking rubber mats: RECMAT®.
 - 1. Description: Resilient, interlocking, playground safety surfacing tiles.
 - 2. Compliance: Meet or exceed CPSC guidelines for impact attenuation.
 - 3. Material: Compression-molded, recycled rubber and binding agents.
 - 4. Recycled Content: 90 percent post-consumer recovered materials.
 - 5. Tile Locking: U-shaped male and female configuration on all 4 sides to lock tiles to adjacent tiles.
 - 6. Top Edges: Chamfered.
 - 7. Tile Bottom: Hollow core stanchion pattern.
 - 8. Wear Layer: Combination of elongated SBR rubber and granulated crumb rubber. Pigmentation used to achieve color. Minimum 0.375 inch thick. Colors: Black (natural), Terra Cotta, Green.
 - 9. Weight: 21.5 lbs.
 - 10. Thickness: 1.75 in.
 - 11. Size: 24 inches by 24 inches plus or minus 1/8 inch.
 - 12. Impact Attenuation: ASTM F 1292. Meets criteria.
 - 13. Freeze Thaw, ASTM C 67: No deterioration.
 - 14. Rubber Deterioration/Air Oven, ASTM D 573: No deterioration.
 - 15. Slip Resistance:
 - a. ASTM E 303:

Revised - August, 2012 by ASC

- 1) Dry: 102.
 - 2) Wet: 62.
 - b. ASTM D 2047:
 - 1) Dry: 0.81.
 - 2) Wet: .082.
 - 16. Compression Deflection, ASTM D 1667: 29.5 psi to 25 percent compression.
 - 17. Compression Set, ASTM D 395: 4.37 percent permanent set.
 - 18. Tensile Strength, ASTM D 412:
 - a. Plus Series: 135 psi.
 - b. Premium Series: 99.8 psi.
 - 19. Elongation at Break, ASTM D 412: 165 percent.
 - 20. Tear Strength, ASTM D 624:
 - a. Plus Series: 60 lbs/in.
 - b. Premium Series: 33.7 lbs/in.
 - 21. Flammability:
 - a. Burning Pill, ASTM D 2859: Pass.
 - 22. IPEMA certification: RecMat® over one layer of 1 inch RecBase® rated to 6 feet. RecMat® over two layers of 1 inch RecBase® plus 3 inches gravel rated to 10 feet. RecMat® over one layer of 2 inch RecBase® with 3 inches gravel rated to 8 feet.
- B. Resilient foam base: RECBASE®
- 1. Composition: Recycled closed-cell, cross-linked, polyethylene, foam nuggets permanently fused together.
 - 2. Top surface: each piece covered with one layer of non-woven geotextile fabric that is thermally bonded to the foam.
 - ~~3.~~ Recycled Content: 98 percent pre-consumer recovered materials.
 - 4. Size: 48 inches by 72 inches.
 - 5. Weight: 0.75 inch -16 lbs, 1.125 inch - 20 lbs., 1.5 inch – 22 lbs., 2 inch – 30 lbs.
 - 6. Thickness: 0.75 inch, 1.125 inch, 1.5 inch, and 2.0 inch.
 - 7. Impact Attenuation: ASTM F 1292. Meets criteria.
 - 8. Transmissivity, 1 inch thick: ASTM D4716: 4.25E-004 m² / sec.
 - 9. Transmissivity, 2 inch thick: ASTM D4716: 1.90E-003 m² / sec.
 - 10. Flow Rate, ASTM D2434: 1 inch 1.0270 gal./ min. per sq. ft.
 - 11. Flow Rate, ASTM D2434: 2 inch 4.5910 gal./ min. per sq. ft.

PART 3 - EXECUTION

3.1 EXAMINATION

Revised - August, 2012 by ASC

- A. Examine areas to receive playground surfacing. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

RECMAT® Interlocking Mat System 71.

- A. RECMAT® Interlocking Mat System 71: (see spec 71 for more details)
1. Review project plans and verify that playground equipment use zones, clearances, and reach ranges will comply with ASTM F1487 sections 8, 9, and 10, and with CAN/CSA-Z614 sections 14 and 15.
 2. Prepare the site in accordance with the project engineer's directions and project specifications. Ensure that site drainage is routed away from or around the playground area to prevent sand, soil, silt, or other foreign material from being deposited in the playground area. Inside the play-ground area, grade subsoil to a 1 to 2 percent grade.
 3. Install playground equipment.
 4. Excavate an 8 inch wide and 8 inch deep trench along the low end of the area to a storm drain.
 5. Install drain pipe in the trench to a storm drain. Make sure the drain pipe is at least 12 inches from borders and wrapped with fabric or RecBase®.
 6. Install a border around play area edge (see our recommendations for a wood border).

Specifier Notes: If subsoil is loose or sandy, a layer of geotextile fabric should be installed before installing gravel and resilient foam drainage.

7. Install, and level 1/2 inch max size gravel or crusher run to a minimum depth of 2 inches for below grade application. Make sure gravel fills the trench and surrounds drain pipe. For above grade, use gravel to fill in low areas in the soil and around drain pipe. Mechanically compact the gravel; a smooth surface is necessary to ensure resilient base seams will be flush. (If 3ft. of fall height is all that is needed, skip step 8).
8. Install resilient base on top of gravel with fabric side down. Resilient base should be cut using a knife, sabre saw, or circular saw, to make a snug fit around play equipment and against borders. Make sure there are no visible gaps except as necessary around spring mounted equipment and border. Leave a gap as necessary around spring mounted equipment and leave a min. 1/2 inch gap between the foam base and the border.
9. See complete instructions available from your Zeager representative for RecMat® installation.

END SECTION