Zeager Bros. Inc. Main Office - Middletown, Pa. 1-800-346-8524

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Product Guide Specification 32 18 16.13

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:

WOODCARPET® Engineered wood fiber surfacing containing 100 percent pre-consumer recovered wood. It is designed to reduce injuries on playgrounds and provide a stable resilient surface for trails. Tested according to ASTM methods to ensure compliance with ADA, ASTM, CPSC, and CSA standards for playground surfacing.

WOODCARPET® Geotextile fabric is placed both below and above aggregate drainage material to create a weed barrier and to prevent the aggregate from mixing with the subsurface and the engineered wood fiber. This in combination with aggregate will help to extend the life of your WoodCarpet® surfacing. (See system 1 spec.)

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.

1.3 REFERENCES - WOODCARPET, GEOTEXTILE FABRIC

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.

A. ASTM D 2434 – Standard Test Method for Permeability of Granular Soils (Constant Head).

B. ASTM D 2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.

C. ASTM D 3776 – Standard Test Methods for Mass Per Unit Area (Weight) of Fabric.

D. ASTM D 3786 – Standard Test Method for Bursting Strength of Textile Fabrics - Diaphragm Bursting Strength Tester Method.

E. ASTM D 4491 – Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

F. ASTM D 4533 – Standard Test Method for Trapezoid Tearing Strength of Geotextiles.

G. ASTM D 4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

H. ASTM D 4716 – Standard Test Method for Determining the (In plane) Flow rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.

I. ASTM D 4751 – Standard Test Method for Determining Apparent Opening Size of a Geotextile.

J. ASTM D 4833 – Standard Test Method for Index Puncture Resistance of Geomembranes, and Related Products.

K. ASTM D 5199 – Standard Test Method for Measuring the Nominal Thickness of Geosynthetics.

L. ASTM F 1292 – Standard Specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment.

M. ASTM F3351 – Standard Test Method for Impact Testing in a Laboratory at a Specified Test Height.

N. ASTM F 1951 – Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

O. Firmness & Stability surface test using Rotational Penetometer portable instrument. Lab test results.

P. ASTM F 2075 – Standard Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment.

1.4 SYSTEM DESCRIPTION – LOOSE FILL SYSTEM

A. Engineered Wood Fiber Surfacing: WoodCarpet® - A recreational surface manufactured from 100 percent pre-consumer recovered wood. It is designed to reduce injuries on playgrounds and provide a stable resilient surface for trails. Tested according to ASTM methods to ensure compliance with ADA, ASTM, CPSC, and CSA standards for playground surfacing.

B. Geotextile Fabric: - Placed both below and above aggregate drainage material to create a weed barrier and to prevent the aggregate from mixing with the subsurface and the engineered wood fiber.

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 F3351 test results, ASTM F1951 Accessibility test results, ASTM F2075 test results, D2859 Flammability test results, and Protect Plus+ 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. Total Liability Insurance Coverage: $11,000,000.
2. 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

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer. Deliver engineered wood fiber playground surfacing to site in bulk.

B. Storage: Store materials in a clean, dry area in accordance with manufacturer's instructions. Store engineered wood fiber playground surfacing to prevent contamination.

C. Handling: Protect materials during handling and installation to prevent damage. Handle engineered wood fiber playground surfacing to prevent contamination.

1.8 WARRANTY

A. Warranty Covers Playground Surfacing for Following Periods:

1. Engineered Wood Fiber Playground Surfacing: 15 years. See warranty for details.

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.

2.2 PLAYGROUND SURFACING

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

A. Engineered Wood Fiber Playground Surfacing: WOODCARPET®

1. Composition: Engineered wood fiber. No chemical treatments or additives.
2. Compliance: Meet or exceed CPSC guidelines for impact attenuation.
3. Recycled Content: 100 percent pre-consumer recovered materials.
4. Dimensions: Per sieve analysis, ASTM F2075 / 4.4: Meets Criteria.
5. Hazardous Metal, ASTM F 2075 / 4.5: Meets Criteria.
6. Tramp Metal, ASTM F 2075 / 4.6: Meets Criteria.
7. Coefficient of Permeability, ASTM D 2434: Greater than 0.6 cm/s.
8. When bonded: Permeability per falling head test, EM1110-2-1906-VII-13: 191.19 gal/min/sq.ft.
9. Moisture Absorption: Maximum of 150 percent by weight.
10. Moisture Content: 25 to 60 percent by weight.
11. Density: 15 to 24 pounds per cubic foot.
12. Impact Attenuation: ASTM F 1292-CFH, ASTM F3351 for specific test height at 12”/ 12ft- meets criteria at least 20% below fail results.
13. Protect Plus+ Certification: 12 inch thickness to 12 feet- F1292 & F3351, F2075, F1951, D2859

Protect Plus+ certification uses independent third party labs to verify all Zeager products. Test results available upon request. More info is available at; www.zeager.com/protect-plus/

14. Accessibility, ASTM F 1951: Meets criteria.
15. Firmness & Stability test per Rotational Penetrometer : Meets Criteria
16. Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials- D2859: Meets criteria.

B. Drainage Fabric:
   1. Composition: nonwoven geotextile filter fabric of staple fibers that is formed into a random network, needle punched and heat-set for dimensional stability.
   2. Recycled content: N/A
   3. Size: 5 feet wide x 300 feet long. / 1.5 m wide x 91.4 m Long
   4. Weight, ASTM D5261 Min. 3.5 ounces per square yard
   5. Grab Tensile Strength: ASTM D4632 0.45 kN / 57 lbs
   6. Grab Tensile Elongation " " 50%
   7. CBR Puncture: ASTM D6241 .064kN/ 145 lbs
   8. UV Resistance: ASTM D4355 70% @500 hrs
   9. Trapezoidal Tear : ASTM D45330.13kN / 29 lbs
   10. Permittivity ASTM D4491 2.20 sec
   11. Water Flow Rate: " " 6112 lpm/m 150 gpm/ft
   12. Apparent Opening size ASTM D4751-0300 mm/50 US Std Sieve.

PART 3 - EXECUTION

3.1 EXAMINATION

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

Specifier Notes: The WOODCARPET® Aggregate System is Not Recommended For Play Areas Over A Hard Surface (asphalt, concrete, etc.)

A. WOODCARPET® Aggregate System 1.

   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 sub-grade as specified in Section 312000. Ensure that site drainage is routed away from or around the playground area. Grade subsoil to a 2 percent grade toward the drainpipe.
   3. Install playground equipment in accordance with manufacturer's instructions at locations indicated on the drawings.
   4. Geotextile Fabric:

      a. Lap seams a minimum of 10 inches or a minimum of 5 inches if a double bead of exterior grade construction adhesive is applied to lap.
      b. Place seams parallel to direction of slides and travel of swings.

   5. Install drainage piping and aggregate drainage material as specified in Section 334600.
   6. Install a containment system around the play area edge.
   7. Install fabric as described in step 4.
   8. Engineered Wood Fiber Playground Surfacing:

a. Place wood fiber surfacing to a minimum depth of 8 inches after compaction for play equipment under 4 feet high and to a minimum depth of 12 inches after compaction for play equipment over 4 feet high.
b. Use mechanical equipment to uniformly compact and level material as described in Zeager installation instructions.

9. Inspect the playground and verify that playground equipment use zones, clearances, and reach ranges comply with ASTM F1487 sections 8, 9, and 10, and with CAN/CSA-Z614 sections 14 and 15.

END SECTION