

**SECTION 32 18 16.13 PLAYGROUND SAFETY UNDERLAYMENT:
SafetyFoam Pro™**

PART 1 – GENERAL

1.1 RELATED DOCUMENT

- A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and other Division 1 Specification sections apply to this Section.

1.2 DESCRIPTION OF WORK

- A. Resilient EPP foam underlayment for surfaces under and around playground equipment. Finished product fits together through a series of puzzle piece connectors, which join each panel to form a fully connected consistent protective layer. Thickness of the SafetyFoam Pro™ varies depending on required critical fall height. Work includes all labor, materials, tools, equipment, and applicable taxes to perform all work and services for the installation of the sub-surface.

1.3 REFERENCE SPECIFICATIONS AND STANDARDS

- A. Materials and methods of construction shall comply with the latest provisions of the following standards:
 - I. ASTM F 1292-04: Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
 - II. ASTM F1951-99: Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.
 - III. ASTM F1551: Standard Test Methods for Comprehensive Characterization of Synthetic Turf Surfaces and Materials: Part 6: Water Permeability of Synthetic Turf Systems and Permeable Bases.

1.4 SUBMITTALS

Any alternate product must be submitted with prior approval packages a minimum of ten (10) days prior to bid date. Submittal packages shall include but not be limited to:

- A. Laboratory Test Reports: Materials certificates certifying each material item complies with, or exceeds, specified requirements. Certificates of compliance must be signed by materials producer and contractor.
- B. Product Verification: Delivery slip for each material shipment.
- C. Warranties: Product and maintenance warranties must be provided to owner prior to installation.
- D. Field test inspection reports and samples for material including impact attenuation, permeability, and flammability.
- E. Playground Grass Surface Installer Qualifications: A list of ten (10) playground surfacing projects completed with a similar product within the last five (5) years. List shall include names of project representatives and respective telephone numbers. This list shall also contain projects which require the same level of difficulty, e.g. number of poles and cutouts, transitions pieces, and other special requirements. These ten (10) projects shall have been contracted and installed by the company bidding the job.

- F. Product Substitution Submittals: Contractor shall provide the following material for playground grass material substitution.
 - I. At least one project in excess of 5,000 square feet and completed in the two (2) years.
 - II. Two 1'x1' product samples.
 - III. Product warranty and guarantee from manufacture warranting against all defects for a ten (10) year period.
 - IV. A written guarantee from manufacturer for workmanship.
 - V. Impact attenuation (per fall height requirements), permeability, and flammability test results from independent approved and certified testing laboratories.

1.5 TESTING OF MATERIALS

- A. The following are test results from an independent testing laboratory which must also be submitted:
 - I. Impact Attenuation: ASTM 1292-04: Impact attenuation test results will be provided. These test results shall be certified and submitted on the letterhead of an independent testing lab. Impact attenuation test results shall meet or exceed Consumer Product Safety Commission Guidelines for impact attenuation (G-max and Head Injury Criterion "H.I.C."). Test results must be administered and evaluated under the same test and these results must be shown for three drops at each required temperature: 32°, 72°, 120°; yield less than 200 G's and less than 1,000 H.I.C. Only test results from ASTM testing approved laboratories, F8 committee will be acceptable. Approved testing laboratories are TSI and Detroit Testing.
 - II. Permeability: Product shall meet or exceed a coefficient of permeability of 150 gallons per minute per square yard.

NOTE: From a geotechnical standpoint, the permeability of a material is a measure of the velocity at which water will flow through the void spaces or pores under a given hydraulic gradient. The product shall handle a minimum of 500 inches of rainfall per hour.

1.6 WORKMANSHIP AND QUALITY ASSURANCE

- A. The SafetyFoam Pro is to be installed per manufacturer's plans and specifications by manufacturer.
- B. All underlayment safety panels shall be provided by a single source.

1.7 DELIVERY AND STORAGE OF MATERIALS

- A. SafetyFoam Pro shall be delivered on pallets wrapped in 1 year UV protected pallet bags and strapped to avoid materials dispersing in high wind conditions.
- B. Products will be stored out of site (as much as possible) and secured the same to prevent tampering.

1.8 GUARANTEE/WARRANTY OF THE MATERIAL AND WORKMANSHIP

- A. The safety underlayment SafetyFoam Pro installed under this contract will be warranted for a period of ten (10) years for material breakdown. Vandalism and force majeure will not be covered. Written warranty must be submitted by the installer.

- B. When defective material or workmanship is discovered which will require repair or replacement, all such repair work or replacement work shall be done by the contractor at its own expense after written notification is given of such required repairs.
 - I. Any unsafe conditions that arise shall be secured and maintained by the installer until all required repairs or replacements have been completed.
 - II. All resurfacing will conform in kind and quality to the specifications set forth in the plans and specifications will be free of defects in workmanship and material.

PART 2 - PRODUCTS

2.1 DESCRIPTION OF SYSTEM

Resilient EPP foam underlayment shall be SafetyFoam Pro as manufactured by ForeverLawn® Inc. 1-866-992-7876. The foam underlayment shall meet all of the following requirements independently and collectively:

- A. Material: Molded Low Density Expanded Polypropylene (EPP) Beads
- B. Weight: 1.3 # Density
- C. Connectors: Puzzle piece design

PART 3 - EXECUTION

3.1 BASE REQUIREMENTS

- A. The base shall be cleared, leveled, and compacted.

3.2 PREPARATION

- A. The perimeter of the area shall be defined with a composite nailer board, unless an acceptable surface for anchoring the turf currently exists. These nailer boards will be secured into concrete or blacktop, or held in place with rebar spikes.
- B. Cleaning: the entire surface shall be clean and free from any foreign and loose material.

3.3 INSTALLATION

- A. SafetyFoam Pro resilient surfacing: SafetyFoam Pro will be connected in 2' x 4' sections over the stone.