

SECTION 32 18 16.13 PLAYGROUND PROTECTIVE SURFACING

INTERLOCKING RUBBER TILES

PART 1 - GENERAL

1.01 SUMMARY

A. Resilient interlocking rubber tiles designed for playground safety surfacing applications.

1.02 REFERENCES

A. ASTM F1292 - Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.

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

C. ASTM D 3676 – Standard Specification for Rubber Cellular Cushion Used for Carpet or Rug Underlay.

D. ASTM D 3389 – Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Double-Head Method).

E. ASTM D 412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers.

F. ASTM D 624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.

G. ASTM C 1026 – Standard Test Method for Measuring the Resistance to Freeze-Thaw Cycling

H. ASTM D 573 – Standard Test Method for Rubber-Deterioration in an Air Oven (Heat Aged).

I. ASTM E 648 – Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

J. ASTM F 1551 – Standard Test Methods for Comprehensive Characterization of Synthetic Turf Playing Surfaces and Materials: Suffix-DIN 18-035, Part 6: Water Permeability of Synthetic Turf Systems and Permeable Bases.

K. ASTM E 303 – Standard Test Methods for Skid Resistance on Coated Tile

L. IPEMA Certified

1.03 SUBMITTALS

A. Submittal Procedures.

B. Product Data: Submit manufacturer's product data, including installation and/or subsurface recommendations.

C. Samples: Submit manufacturer's sample of 1 full tile.

D. Test Reports: Submit upon request, demonstrating compliance with specified performance standards.

E. Certificate of Compliance: Submit manufacturer's certificate of compliance indicating materials comply with specified requirements.

F. Maintenance Instructions: Submit manufacturer's maintenance and cleaning instructions.

G. Warranty: Submit Manufacturer's standard warranty.

H. Provide certificates of compliance for FireFly Sports Testing certification verifying manufacturer's certification of conformance to EPA 1633, EN71-3, ASTM F3496-

Details:

a. PFAS Testing EPA Method 1633 (Revision A – December 2024): Required PFAS test for all solid materials. Note: Must be used in place of outdated water-extraction PFAS methods.

b. Element Migration (Heavy Metals) EN 71 3 – Migration of Certain Elements Testing for 19 restricted elements under simulated gastric conditions.

c. Polyaromatic Hydrocarbons (PAH) ASTM F3496 – PAH content in synthetic turf infill and other surface materials as adapted.

1.04 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer shall have a minimum of five years of experience with at least 20 completed projects involving similar playground safety surfacing systems. Installers must be trained and approved by the manufacturer.

1.05 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.

B. Storage:

1. Store materials in accordance with manufacturer's instructions.

2. Playground Safety Surfacing Tiles:

- a. Store tiles in a dry area prior to installation.
- b. Protect tiles from direct sunlight before installation.

3. Adhesive: Store adhesive in a dry area at a minimum temperature of 40°F. Avoid adhesive applications below 40°F and above 105°F.

C. Handling: Protect materials during handling and installation to prevent damage.

1.06 ATMOSPHERIC CONDITIONS

A. Installation should occur when ambient temperatures are above 40°F and rising. Avoid installation if temperatures are expected to remain below 45°F for extended periods. For temperatures above 85°F, consult manufacturer for modified installation procedures.

1.07 WARRANTY

A. Materials and Workmanship: Playground safety surfacing tiles shall be warranted for defects in materials and workmanship for 10 years from date of Final Acceptance (i.e. Notice of Completion).

PART 2 - PRODUCTS

2.01 MANUFACTURER

Manufacturer: Rubber Designs LLC, 7629 Adairsville Hwy, Adairsville, GA 30103. Toll-Free: 800-858-0519. Website: www.totturf.com

2.02 PLAYGROUND SURFACING TILES

A. Tiles: "INTERLOCKING TILE".

1. Series: Interlocking Tile
2. Description: Resilient, interlocking, playground safety surfacing tiles.
3. Compliance: Meet and exceed CSPC guidelines for impact attenuation.
4. Material: Compression-molded, recycled rubber and binding agents.
5. Tile Locking: U-shaped male and female configuration running full length on all 4 sides to lock tiles to adjacent tiles.
6. Top Edges: Chamfered.
7. Tile Bottom: Hollow core Tunnel Shaped Grid pattern.
8. Wear Layer:
 - A. Standard Buffings: Rubber Buffings: 10 Mesh. Minimum .50 inch thick.
 - B. Standard EPDM: EPDM Granules: .5-1.5mm. Minimum .50 inch thick.

9. Size: 23 13/16" X 23 13/16" Nominal. Installed size: 23 13/16" x 23 13/16"

10. Thickness:

A. Critical Fall Height 4 Feet: 2.25 inches

B. Critical Fall Height 6 Feet: 2.75 inches

C. Critical Fall Height 8 Feet: 3.25 inches

D. Critical Fall Height 10 Feet: 4.25 inches

11. Colors:

A. Standard Buffing Top Colors: [Green] [Brown] [Tan] [Grey] [Red] [Black]

1) Percent Color: [100 percent color].

B. Standard and Premium EPDM Colors: EPDM Granules

1) Percent Color: 50% color/50% black, 75% color/25% black and 90% color/10%black

Standard colors: [Beige] [Blue] [Green] [Red]

2) Premium Colors: 50% color/50% black, 75% color/25% black and 90% color/10%black

Premium Colors: [Bright Blue] [Dark Blue] [Dark Green] [Pink] [Lilac] [Bright Red] [Bright Green] [Bright Yellow] [Yellow] [Bright Orange] [Beige Brown] [Brown] [White] [Eggshell] [Gray] [Middle Gray] [Dark Gray]

2.03 ACCESSORIES

A. Corners:

1. Interlocking Inside and Outside Corner Ramp.

2. Material: Same as playground safety surfacing tiles.

B. Ramps:

1. Interlocking Ramps:

2. Material: Same as Playground safety surfacing tiles.

3. Prefabricated ADA-Compliant Ramps:

- [Beige] [Blue] [Green] [Red]

- Premium Colors: 50% color/50% black, 75% color/25% black and 90% color/10%black

- [Bright Blue] [Dark Blue] [Dark Green]

- Percent Color: 50% color/50% black, 75% color/25% black and 90% color/10%black
- [Bright Yellow],[Yellow] [Bright Orange] [Beige Brown] [Brown],[White] [Eggshell] [Gray] [Middle Gray] [Dark Gray]
- [Pink] [Lilac] [Bright Red] [Bright Green]

4. Material: Standard Buffing Top

C. Filler Sticks:

1. Material: Black

D. U-Lock:

1. Material Black

E. Adhesive: Isobond ATS T04-37; Furnished by manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas to receive playground safety surfacing tiles. Notify responsible parties if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.02 PREPARATION

A. Prepare subsurface in accordance with manufacturer's instructions to ensure proper slope, support and drainage for playground safety surfacing tiles. The rubber tile manufacturer is not responsible for improper subsurface installation and will not cover subsurface failure. Check warranty information for more details.

Notes: Specify subsurface of concrete, asphalt, or aggregate. It is critical that a proper subsurface drainage system be constructed, or the tile surface may not stay level and may cause damage to the surfacing.

A. Concrete Subsurface: (Preferred subsurface)

1. Concrete subsurface shall be as specified.
2. Apply light broom finish.
3. Ensure concrete is sound with no loose material.
4. Ensure concrete is a minimum of 7 days old.
5. Power wash existing concrete in accordance with manufacturer's instructions.

6. Requires drains to remove water at subsurface level.

B. Asphalt Subsurface:

May require longer curing time to allow the oils to dissipate. Some asphalt surfaces may have a significant amount of tars or oils and the adhesive should be tested to ensure adhesion. After the adhesive, has cured and if the tiles can be pulled up with asphalt or concrete attached to the glue, it is the base that has failed, and not the adhesive.

1. Asphalt subsurface shall be as specified.
2. Ensure asphalt is sound with no loose material or cracks.
3. Power Wash existing asphalt.
4. Requires drains to remove water at subsurface level.

C. Aggregate Subsurface: Check with your rubber tile representative to see if this option is available in your area.

1. 3" minimum of compacted aggregate of (3/4") .75" minus irregular stone with fines compacted to 95%. Placed in 2" water lifts.
2. 1" of top layered (1/4") .25" minus "chip & dust" or "decomposed granite" well compacted to 95%. Placed in water lifts. This layer should be level and have less than +/- 1/4" over 10' in any direction.
3. Geo- Textile fabric placed over aggregate prepared subsurface. Geo textile fabric is permeable polymeric textile, non-woven, and placed in direct contact of compacted top layer of "compacted chip" & dust or "decomposed granite". Suitable product at minimum is medium grade/(200g per yd²) or equivalent. Overall joints at least 12" Sealing joint with equivalent construction sealant as used for tile adhesive.

3.03 INSTALLATION

A. Install "Interlocking tiles" in accordance with manufacturer's instructions at locations indicated.

B. Ensure prepared subsurface and tiles are dry and clean.

C. Layout tile surface manufacturer's instructions.

D. Install tiles in single installation session, if possible.

E. Apply adhesive in accordance with manufacturer's instructions for tile-to-tile as well as tile-to-base for all keystone and strategic tile rows.

3.04 CLEANING

- A. Remove adhesive spills from playground safety surfacing tiles and equipment in accordance with manufacturer's instructions.
- B. Clean tiles in accordance with manufacturer's instructions.

3.05 PROTECTION

- A. Protect playground safety surface tiles from foot traffic for a minimum of 12 hours after installation.
- B. Protect completed tiles from damage during construction.