Section 10

Play Surfaces

Play Surface

Standard Play Surface 1:

artificial turf over rubber mulch

- Color: project specific
- Installation Pattern: per manufacturer specification
- Product Line: Playground Grass
- Manufacturer: ForeverLawn

Standard Play Surface 2:

Poured in Place Rubber Surface

- Color: project specific
- Installation Pattern: per manufacturer specification
- Product Line: PlayBound
- Manufacturer: Surface America

Standard Play Surface 3:

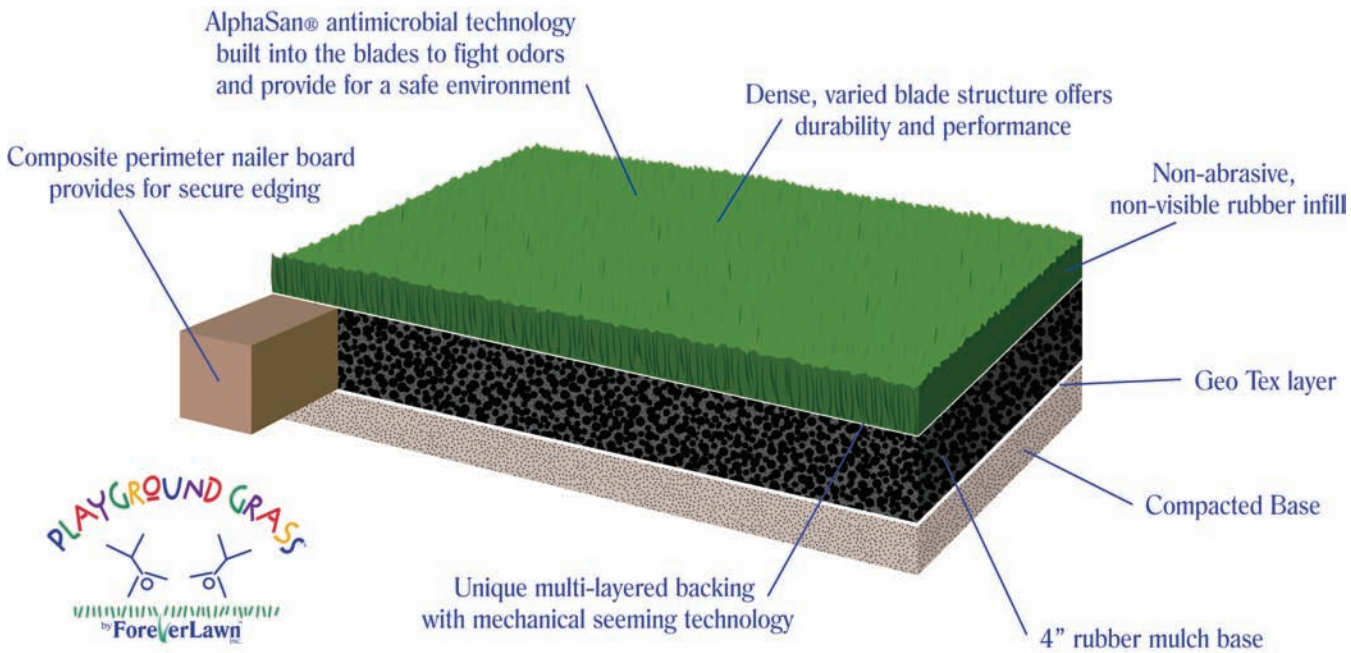
Rubber Tile Surface

- Color: project specific
- Installation Pattern: per manufacturer specification
- Product Line: UltraTile
- Manufacturer: Surface America

Playground Grass

ForeverLawn® INC.

Playground Grass System

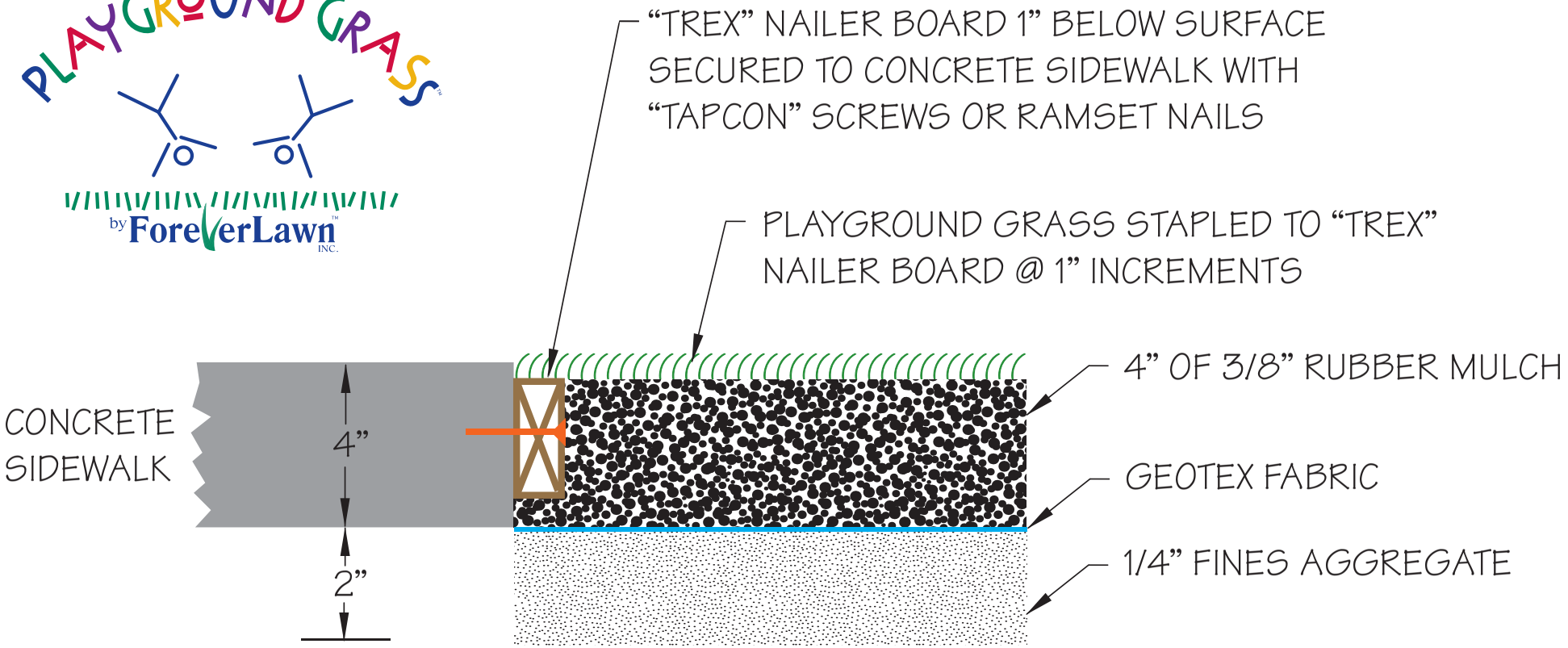


ADDRESS
4500 Bogan Ave. NE
Albuquerque, NM 87109

PHONE
866.992.7876
505.217.0177

WEBSITE
www.foreverlawn.com
www.playgroundgrass.com

PLAYGROUND GRASS™
by ForeverLawn™ INC.



DETAIL #1: EDGING DETAIL AGAINST CONCRETE SIDEWALK

ForeverLawn INC.

ForeverLawn Inc. Office
4500 Bogan Avenue NE
Albuquerque, NM 87109
Phone: 505.217.0177
Fax: 866.212.1925
www.playgroundgrass.com
www.foreverlawn.com

drawn by	name: T. Smith	date: 12/01/06
reference:	quote #	ref dwg
approved by:		
scale:	Not to Scale	
drawing no.	DETAIL 1	

PlayBound™ Poured-in-Place 10-Part Specification

1. Product Name

PlayBound™ Poured-in-Place Playground Surfacing

2. Manufacturer

Surface America, Inc.
PO Box 157
Williamsville, NY 14231
(800) 999-0555
(716) 632-8413
Fax: (716) 632-8324
E-mail: info@surfaceamerica.com
http://www.surfaceamerica.com

3. Product Description

BASIC USE

PlayBound™ Poured-in-Place Playground Surfacing is designed for playgrounds.

COMPOSITION & MATERIALS

PlayBound™ Poured-in-Place surfacing is a 2-layer system consisting of a basemat of 100% post-consumer recycled SBR (styrene butadiene rubber) and polyurethane and a top surface consisting of recycled post-industrial EPDM (ethylene propylene diene monomer) rubber and polyurethane.

The type of playground equipment determines the required basemat thickness, and the basemat thickness may be different at various locations on the playground site. Depending on ASTM F1292 requirements for critical fall height 4’, 5’, 6’, 7’, 8’, 9’ or 10’ (1.2, 1.75, 1.8, 2.1, 2.4, 2.7, 3.1, or 3.6 m), select basemat thickness from optional

thicknesses 1 1/4 ", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", or 5" (31.75, 38, 51, 64, 76, 89, 102, or 127 mm), respectively. Specify project requirements and coordinate with working drawings.

Typical design edge details include:

• Loose fill poured-in-place crushed stone (contained)

• Loose fill poured-in-place concrete

• Flush poured-in-place

• Overrun poured-in-place

• Saw Cut poured-in-place

BASEMAT THICKNESSES

1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 5" (31.75, 38, 51, 64, 76, 89, 102, 127 mm)

TOP SURFACE THICKNESS

Nominal 1/2" (12.7 mm), minimum 3/8" (9.5mm), maximum 5/8" (15.9 mm)

TOP SURFACE COLORS

- Standard Combination - 50% Terra Cotta Red / 50% Black
- Standard Combination - 50% Beige / 50% Black
- Standard Combination - 50% Hunter Green / 50% Black
- Standard Combination - 50% Royal Blue / 50% Black
- Terra Cotta Red
- Primary Red
- Orange (indoor only)
- Pink
- Gold
- Beige
- Yellow
- Bright Green
- Army Green

- Hunter Green
- Teal
- Sky Blue
- Royal Blue
- Purple
- Pearl
- Eggshell
- Brown
- Light Gray
- Dark Gray
- Black
- Custom color combinations and graphics

LIMITATIONS

The following chemicals may cause damage to the playground surface and should be avoided: disinfectants, concentrated chlorine bleach, gasoline, diesel fuel, hydraulic and lubricating oils, acids and organic solvents.

Though not commonly used in water play areas, pool surrounds and similar applications, dissolved minerals and other chemicals (hydrochlorides) may cause surface discoloration over time. This condition, should it occur, is not considered to be a product failure.

A yellowish shading of the top surface will be noticeable when using standard aromatic polyurethane binder to encapsulate some colors of EPDM granules. This is an industry wide design issue. An aliphatic binder, which does not produce this yellowish shading, is available at a somewhat higher cost. The

specifier should seriously consider its use, especially with the following surface colors: blue, light gray, purple and pearl. Consult manufacturer for more information.

4. Technical Data

APPLICABLE STANDARDS

ASTM International

• ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers- Tension

• ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

• ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish- Coated Floor Surfaces as Measured by the James Machine

• ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials

• ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester

• ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment

• ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment

APPROVALS

PlayBound Poured-in-Place Playground Surfacing is certified by the International Play Equipment Manufacturers Association (IPEMA). Contact manufacturer for information on approvals by major owners, agencies and other industry entities.

ENVIRONMENTAL CONSIDERATIONS

This system makes extensive use of recycled tire rubber as a major component.

PHYSICAL/CHEMICAL PROPERTIES

• Shock attenuation (ASTM F1292) Gmax - Less than 200

• Head injury criteria - Less than 1000

• Tensile strength (ASTM D412) - 60 psi (413 kPa)

• Tear resistance (ASTM D624) - 140%

• Water permeability - 0.4 gal/yd2/second

• Dry static coefficient of friction (ASTM D2047) - 1.0

• Wet static coefficient of friction (ASTM D2047) - 0.9

• Dry skid resistance (ASTM E303) - 89

• Wet skid resistance (ASTM E303) - 57 Required mix proportions by weight:

• Basemat - 14% polyurethane, 86% rubber

• Top course - 18% polyurethane, 82% rubber

Test reports and additional product information are available upon request.

FIRE PERFORMANCE

Flammability (ASTM D2859) - Pass

5. Installation

PREPARATORY WORK

Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C).

METHODS

Do not proceed with playground surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.

Substrate preparation must be in accordance with surfacing manufacturer’s specification.

Surface Preparation

Using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft2/gal (7.5 m2/L).

Basemat Installation

Using screeds and hand trowels, install the basemat at a consistent density of 29 pounds,

10 ounces per cubic foot (475 kg/m3) to the specified thickness.

Allow basemat to cure for sufficient time so that indentations are not left in the basemat from applicator foot traffic or equipment. Do not allow foot traffic or use of the basemat surface until it is sufficiently cured.

Primer Application

Using a brush or short nap roller, apply primer to the basemat perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft2/gal (7.5 m2/L).

Top Course Installation

Using a hand trowel, install basemat at a consistent density of 58 pounds, 9 ounces per cubic foot (938 kg/m3) to a nominal thickness of 1/2" (12.7 mm).

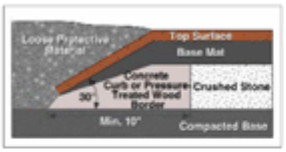
Allow top course to cure for a minimum of 48 hours. At the end of the minimum curing period, verify that the top course is sufficiently dry and firm to allow foot traffic and use without damage to the surface. Do not allow foot traffic or use of the surface until it is sufficiently cured.

Complete installation recommendations are available from the manufacturer.

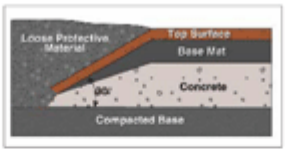
PRECAUTIONS

Protect the installed playground surface from damage resulting from subsequent construction activity on the site.

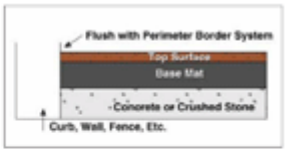
BUILDING CODES



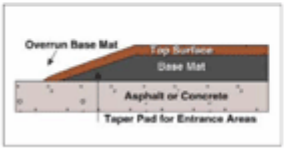
Typical Edge Detail: Loose-Fill with Crushed Stone (contained)



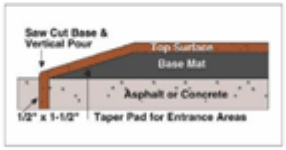
Typical Edge Detail: Loose-Fill with Concrete



Typical Edge Detail: Flush



Typical Edge Detail: Overrun



Typical Edge Detail: Saw Cut

Current data on product compliance may be obtained from the manufacturer’s technical support specialists.

6. Availability & Cost

AVAILABILITY

PlayBound Poured-in-Place Surfacing System is available through Surface America, Inc. Contact Surface America, Inc., for more information.

COST

Budget installed cost information may be obtained from Surface America, Inc.

7. Warranty

The standard warranty period is 5 years from date of completion of work (though not recommended in water play areas, pool surrounds or similar applications, when installed, the warranty is 2 years). Contact Surface America, Inc., for more information on warranty terms.

8. Maintenance

Hose off entire playground surface to remove food, drink, sand, dirt and loose debris. A pressure washer may be used, but do not exceed 1500 psi (10 MPa) pressure or place nozzle closer than 12" (305 mm) to surface. While surface is still damp, apply a mild household or commercial cleaner to a small area using a sprayer. Scrub using a medium bristle brush. Repeat as necessary on heavily stained areas. Once entire surface has been cleaned, rinse using a garden hose with spray nozzle attachment. Complete maintenance recommendations are available from the manufacturer.

9. Technical Services

Surface America, Inc., works closely with the contractor to ensure the site is prepared and the installation is on schedule. For technical assistance, contact Surface America, Inc.

10. Filing System

Additional product information is available from Surface America, Inc., upon request.

UltraTile™ 10-Part Specification

1. Product Name

UltraTile™ Playground Surfacing

2. Manufacturer

Surface America, Inc.
PO Box 157
Williamsville, NY 14231
(800) 999-0555
(716) 632-8413
Fax: (716) 632-8324
E-mail: info@surfaceamerica.com
www.surfaceamerica.com

3. Product Description

BASIC USE

UltraTile™ Playground Surfacing is designed for playgrounds of all types. It is installed over a poured asphalt, concrete or crushed stone substrate. The product line features an extensive range of standard tile designs and accessory pieces.

COMPOSITION & MATERIALS

UltraTile™ is a factory-molded surface composed of high-quality, 100% post-consumer SBR (Styrene Butadiene Rubber) tire rubber and EPDM colored granules bound together by a wear and weather resistant polyurethane and a 3 mm top wear layer with tapered, conical support legs.

The type of playground equipment determines the required tile thickness. Depending on ASTM F1292 requirements for critical fall height 6’ or 8’ (1.8 or 2.4 m), select tile thickness from optional thicknesses 2 1/2" or 4 1/4" (63.5 or 108 mm), respectively.

Accessories include:

• Reducer
• ADA Access Ramp
• L/R Side Reducer for ADA Access
• Outside 45 Corner Reducer
• Inside 45 Corner Reducer
• Outside 90 Corner Reducer
• Inside 90 Corner Reducer
• Quad Blok Connector

TILE THICKNESSES & WEIGHTS

• 2 1/2" or 4 1/4" (63.5 or 108 mm

• Safari colors: 24 or 30 lb (11 or 13.5 kg)

• Carnival colors: 26 or 36 lb (12 or 16 kg)

COLORS

Carnival Colors:

• Blueberry Pie

• Caramel Corn

• Cherry Blast

• Grape Ape

• Orange Aide

• Rock Candy

• Sour Apple

Safari Colors:

• Butterflies

• Cheetah Gold

• Fire Flies

• Midnight

• Rain Drops

• Red Rover

• River Rapids

• Zappy Zebra

Accessories Colors:

(Accessories are not manufactured with an UltraTile top wear layer. The EPDM colored granules are homogeneously mixed throughout to produce coordinated designs for all UltraTile colors.)

• PG60A

• PG61A

• PG62A

• PG63A

• PG64A

• PG65A

• PG66A

LIMITATIONS

The following chemicals may cause damage to the playground surface and should be avoided: disinfectants, concentrated chlorine bleach, gasoline, diesel fuel, hydraulic and lubricating oils, acids and organic solvents.

In water play areas, pool surrounds and similar applications; dissolved minerals and other chemicals (hydrochlorides) may cause surface discoloration over time. This condition, should it occur, is not considered to be a product failure.

Due to the elastic characteristics of rubber, some variation in tile dimensions may be expected. This amount is approximately +/ to 2 mm in thickness and -2 to 5 mm in length and in width.

4. Technical Data

APPLICABLE STANDARDS

American Society for Testing & Materials (ASTM)

1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.

2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.

3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.

4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.

5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.

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

7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

8. ASTM D3389 Abrasion Testing.

9. ASTM D297 Standard Test Methods for Rubber Products-Chemical Analysis-Density.

10. DIN 1835 Part 6-Permeability to Water.

11. U. S. Environmental Protection Agency Method 3052:1996.

APPROVALS

Contact manufacturer for information on approvals by major owners, agencies and other industry entities.

ENVIRONMENTAL CONSIDERATIONS

This system makes extensive use of recycled tire rubber and other rubber products as a major component.

PHYSICAL/CHEMICAL PROPERTIES

1. Shock Attenuation (ASTM F1292) - 2-1/2" meets 6' critical fall height, 4-1/4" meets 8' critical fall height.

a. Gmax - Less than 200.

b. Head Injury Criteria - Less than 1000.

2. Flammability (ASTM D2859) - Pass.

3. Tensile Strength (ASTM D412) - 180 lbs/in^2 min.

4. Water Permeability Rate: 0.034 cm/sec.

5. Accessibility: Comply with requirements of ASTM F1951-08 - Pass.

6. Lead Content: (US EPA Method 3052: 1996) - Pass.

7. Void Volume: 42% min 2-1/2”. 50% min 4-14”.

8. Coefficient of Thermal Expansion: .0011 in/ft/º F.

9. Wear Surface Density: 70 lbs/cu ft min.

10. Abrasion Testing (ASTM D3389): Less than 0.010” lost or less than 1 g lost.

11. Elongation At Break (ASTM D412): 70% min.

FIRE PERFORMANCE

Flammability (ASTM D2859) - Pass. Class A flammability tile per ASTM E108 and ASTM E648 available by special order

5. Installation

PREPARATORY WORK

Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 20 degrees F (-7 degrees C) and a maximum temperature of 100 degrees F (38 degrees C). Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C).

METHODS

Do not proceed with playground surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.

Verify that substrate conditions are suitable for installation of the playground surfacing system and do not proceed with installation until unsuitable conditions are corrected.

Apply adhesive on tight asphalt or concrete at a rate of approximately 65 ft2/gal (1.6 m2/L) square feet per gallon. Adhesive consumption will increase as asphalt porosity increases. Apply adhesive to the base using a notched trowel. Apply adhesive to tile sides using a putty knife, roller or adhesive tube.

Adhesive should be applied to approximately 60 perimeter inches (1.5 m) of the total 120 perimeter inches (3 m) of the tile, when bonding side-to-side, to allow for rainwater drainage.

Maintain a straight line at the tile joints. Because of the elastic nature of rubber, a perfect fit from tile to tile is not possible. To keep lines straight, adjust tiles using a rubber mallet and place like-size tiles together as they are laid.

PRECAUTIONS

The concrete or asphalt substrate must be level or uniformly sloped since variations will be telegraphed through to the tile surface. Avoid installation when large temperature swings during the time between adhesive application and final curing (12 - 36 hours, depending on temperature and humidity) are expected, as gapping between tiles may result.

Protect the installed playground surface from damage resulting from subsequent construction activity on the site.

BUILDING CODES

Current data on product compliance may be obtained from the manufacturer's technical support specialists.

6. Availability & Cost

AVAILABILITY

Contact Surface America, Inc., for information on availability.

COST

Cost information may be obtained from Surface America, Inc.

7. Warranty

The standard warranty period is 10 years from date of product shipment. Contact Surface America, Inc., for more information on warranty terms.

8. Maintenance

Hose off entire playground surface to remove food, drink, sand, dirt and loose debris. A pressure washer may be used, but do not exceed 1500 psi (10,335 kPa) pressure or place nozzle closer than 12" (305 mm) to surface. While surface is still damp, apply a mild household or commercial cleaner to a small area using a sprayer. Scrub using a medium bristle brush. Repeat as necessary on heavily stained areas. Once entire surface has been cleaned, rinse using a garden hose with spray nozzle attachment. Complete maintenance recommendations are available from Surface America, Inc.

9. Technical Services

A staff of factory trained service personnel offers design assistance and technical support. For technical assistance, contact Surface America, Inc.

10. Filing Systems

Additional product information is available from Surface America, Inc., upon request.