

Unitary Bonded Rubber

PART 1 – General

1.01 POURED IN PLACE PLAYGROUND SURFACING

GT Impax® Bonded poured in place playground surfacing consists of a polyurethane binder mixed with 100% recycled, shredded tire material which will make up the attenuated surface. GameTime® surfaces comply with ADA and CPSC guidelines as well as ASTM Standards. GameTime® is also certified by IPEMA, a third-party testing organization for playground surfaces and equipment.

1.02 PERFORMANCE REQUIREMENTS

- A. Area Safety: GT Impax® Bonded poured in place surfacing within the playground equipment use zones shall meet or exceed the performance requirements of the CPSC, ADA and Fall Height Test ASTM F1292-17a. The surface must yield both a peak deceleration of no more than 200 Gmax and a Head Injury Criteria (HIC) value of no more than 1,000 for a head-first fall from the highest accessible portion of play equipment being installed as shown on drawings. IPEMA certification is required. (ASTM F1292-17a section 4.3.3: The laboratory test used to determine critical fall height shall have been conducted on surfacing material samples identical in design, materials, components, thickness and manufactured as the installed playground surface)
- B. Accessibility: NOTE: Children’s outdoor play areas shall be in compliance with the Uniform Federal Accessibility Standards (UFAS) FED-STD-795 and the Architectural and Engineer Instructions (9AEI) Design Criteria. The requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) 28 CFR Part 36 that provide equal or greater accessibility than the requirements of UFAS must also be met in children’s outdoor play areas.
- C. GT Impax® Bonded poured in place surfaces intended to serve as accessible paths of travel for persons with disabilities shall be firm, stable and slip resistant, and shall meet the requirements of ASTM F 1951- 08 and ASTM F1292-17a.
- D. GT Impax® Bonded poured in place surfaces shall be manufactured and installed by trained, experienced company employees or certified installers who have successfully completed the “Certified Installers Training Program” required by GameTime®.
- E. Delivery, Storage and Handling: Materials and equipment shall be delivered and stored in accordance with the manufacturer’s recommendations.
- F. Project Site Conditions: GT Impax® Bonded poured in Place surfacing must be installed on a dry sub-surface, with no prospect of rain within the initial drying period, and within the recommended temperature range of the manufacturer. Installation in weather condition of extreme heat, less than 55 degrees (F), and/or high humidity may affect cure time, and the structural integrity of the final product. Immediate surroundings of the site must be reasonably free of dust conditions as this could affect the final surface appearance. The manufacturer’s Service Center Manager reserves the right to control the installation based on such factors without penalty to the company.

- G. Sequencing and Scheduling: GT Impax[®] Bonded poured in place surfacing shall be installed after all playground equipment, shade structures, signs and any other items within the surfacing area. Surface installation will be coordinated by a GameTime[®] representative.
- H. Warranty: GT Impax[®] Bonded poured in place surface shall maintain required impact attenuation characteristics and be guaranteed against defects in workmanship and material for a limited Three (3) year period or as specified and agreed upon per alternate contract. Warranty will be specific to maintenance requirements and performance standards of completed product.
- I. Submittals: The following shall be submitted:
1. One original hard copy of the submittal package will be provided. Additional hard copies available by request, please contact your local sales representative for specifications, details, colors and testing data.
 2. Products submitted as equal must include hard copies of manufactures written specifications and warranty.
 3. Manufacturer's descriptive data and installation instructions.
 4. Manufacturer's details showing depth of the system, sub-base materials, and edge details.
 5. Mandatory listing of at least 3 installations where products similar to that being proposed for use have been installed and in service for a minimum of 2 years. List shall include: Owner or purchaser, address of installation, date of installation, contact person and phone number.
 6. A signed statement by an authorized official certifying that the surfacing system meets the of AS TM-F1292-09 (if necessary) for a head-first fall from the highest accessible portion of the specified playground equipment. IPEMA certification is required.
 7. A signed statement from the manufacturer of the poured in place surfacing attesting that all materials under this section shall be installed only by the Manufacturer's Trained Installers.
 8. A certificate of Insurance shall be provided by GT Impax[®] for poured in place surfacing for use as playground safety surfacing, covering general and product liability of not less than \$1,000,000 for each occurrence, \$2,000,000 general aggregate, with an excess/ umbrella Liability of \$25,000,000. The issuing underwrite shall be AA rated. Manufacturers submitting as equal must provide a certificate of insurance equal to or greater than GameTime[®].
 9. State specific contractor's license under manufacturers name doing business in the specific state for a minimum of 5yrs or more. (License under another contractor's name unacceptable)
 10. Mandatory samples of the proposed material for this project.

PART 2 – PRODUCTS

Safety surfacing shall consist of both recycled and synthetic materials meeting the requirements of this specification. The type of safety surfacing shall be GT Impax[®] Bonded manufactured and installed by GameTime[®], or it's Certified Installers. Telephone: 800-235-2440.

Contact: _____

2.01 Product Scope

- A. Poured in Place Surface: The GT Impax® Bonded poured in place surface shall consist of 100 percent recycled shredded tire material mixed with a polyurethane binder.
- B. It shall consist of a uniform material manufactured in such a way that the wear course meets the requirements specified herein for wear surface.
- C. The type of safety surfacing shall be a poured-in-place system and shall be indicated on the drawings.

2.02 Bonded System

- A. Impact Attenuating Cushion Layer: Cushion Layer consists of a colored shredded butadiene rubber (SBR) adhered with a 100 percent solids polyurethane binder to form a resilient porous material.
- B. Strands of SBR may vary from 0.5 mm – 5.0 mm in thickness by 5.0 mm – 50 mm in length.
- C. Foam or rubber granules are not to be permitted in Cushion Layer
- D. Binder shall be between 14-16 percent of the total weight of the material, and shall provide 100 percent coating of the particles.
- E. If specified, a wear pad can be inserted into the Bonded system at high traffic areas. (under swings or at a slide exit) The insert will consist of Thermal Plastic Vulcanized (TPV) or Ethylene Propylene Diene Monomer (EPDM) poured-in-place Material. Urethane for the inserts will be between 18-20 percent of the total weight of the material used in the insert and shall provide 100 percent coating of the particles.

Up to 4' Fall Height 2" System Depth

Up to 6' Fall Height 3" System Depth

Up to 8' Fall Height 4" System Depth

2.03 BINDER

- A. No Toluene Diphenyl Isocyanate (TDI) shall be used.
- B. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.
- C. Weight of polyurethane shall be no less than 8.5 lbs/gal (1.02 Kg/1) and no more than 9.5 lbs/gal (1.14 Kg/1)
- D. Manufacturer is permitted to modify the type of urethane required to match extreme weather conditions. Substitutions must be equal to or exceed Aromatic quality.

MATERIALS

- A. **Bonded System – GameTime Shredded SBR Mixture** As distributed by: GameTime® - (800)235-2440 Location Used: Playground Area
- B. **Binder – VORAMER MR 1099- extreme heat and humidity conditions**
Manufacturer: Dow Chemical
As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area
- C. **Binder – VORAMER MR 1105- normal weather conditions**
Manufacturer: Dow Chemical
As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area

- D. **Binder- Voramer MR 1108- humid conditions**
Manufacturer: Dow Chemical

As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area
- E. **Binder- Voramer MR 1160**
Manufacturer: Dow Chemical
As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area
- A. **Binder- Ryvec BFLV - 5**
Manufacturer: Ryvec Inc.
As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area
- B. **Binder- Ryvec BFLV - 6**
Manufacturer: Ryvec Inc.
As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area
- C. **Binder- Aliphatic**
Manufacturer: Marchem Pacific, Inc.
As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area
- D. **Binder- Stockmeier 106.00**
Manufacturer: Ryvec Inc.
As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area
- E. **Binder- Stockmeier 136.00**
Manufacturer: Ryvec Inc.
As distributed by: GameTime® - (800) 235-2440 Location Used: Playground Area

PART 3 – EXECUTION

3.01 SITE PREPARATION (OWNER OR OWNERS REPRESENTATIVE SHALL)

- A. Finished Grade/Slope: General contractor/Owner verify that finished elevations of adjacent areas are as indicated on the architectural or site plans, that the appropriate sub-grade elevation has been established for the particular safety surface to be installed, and that the subsurface has been installed per architectural, site or equipment plans while meeting accessibility and use zones requirements.
- B. Sub base: General contractor/Owner verify the tolerance of concrete or bituminous sub base shall be within 1/8 inch (3.0 mm) in 10 feet (3050 mm). Tolerance of aggregate sub base shall be within 3/8 inch (10mm) in 10 ft (3050 mm). Verify that aggregate sub base has been fully compacted in 2" watered lifts to 95 percent or greater.
- C. Curing of Asphalt and Concrete: If poured in place surfacing is installed, verify that concrete sub base has cured (All areas appear white in color usually between 3-7 days, may be shorter) and that all concrete curing compounds and other deleterious substances that might adversely affect adhesion have been removed. Surface shall be clean and dry.

- D. Asphalt cure time requires fourteen (14) days (actual site situations may vary). Once the new asphalt has cured, it must be pressured washed prior to the surfacing being installed. The contractor shall be responsible for flooding the pad to insure proper slope and tolerance. Any areas holding enough water to cover a flat nickel shall be patched prior to arrival of the installation crews.
- E. Drainage: Verify that sub-surfacing drainage, if required, has been installed to provide positive drainage per architectural plans.

3.02 INSTALLATION

- A. GT Impax[®] Bonded poured in Place Surfacing: Components of the poured in place surfacing shall be mixed on site in a rotating tumbler to ensure components are thoroughly mixed and are in accordance with manufactures recommendations. Installation of surfacing shall be seamless up to 2,000 square feet per day and completely bonded to a concrete sub base. Material shall cover all foundations and fill around all elements penetrating the surface.
- B. Cushion Layer: Whenever practical, cushion layer of the surfacing material shall be installed in one continuous pour on the same day of up to 2,000 square feet. When a second pour is required, step the seam (see detail) and fully coat the step of the previous work with a primer binder to ensure 100 percent bond with new work. Apply adhesive in small quantities so that new material can be placed before the adhesive dries.
- C. Perimeter: For installations over existing concrete, the perimeter must be saw cut to provide a way 1" deep x 1" wide, or formed during the pour, with surfacing rolled down inside void.

Primer adhesive must be applied to all sides of the void. When connecting to a concrete curb or boarder the inside vertical edge shall be primed with adhesive and the final 12-18" of the system shall be compacted tighter to achieve a firmer surface with less movement where it joins the concrete edge.

- D. When installing over new or existing asphalt, a curb or other type of border must be installed around the entire pad. Primer adhesive must be applied to the inside vertical edge of the border before PIP surface installation.
- E. Thickness: Construction methods, such as the use of measured screeds or guides shall be employed to ensure that full depth of specified surfacing material is installed. Surfacing system thickness throughout the playground equipment use zone shall be as required to meet the impact attenuation requirements specified herein.
- F. Clean Up: Manufacturer's installers shall work to minimize excessive adhesive on adjacent surfaces or play equipment. Spills of excess adhesive shall be promptly cleaned.
- G. Protection: The GT Impax[®] Bonded safety surface shall be allowed to fully cure in accordance with Manufacturer's instructions. The surface shall be protected by the owner from all traffic during the curing period of 48 hours or as instructed by the manufacturer.
- H. Manufacturer's Services: For GT Impax[®] Bonded poured in place safety surfacing, a manufacturer's representative who is experienced in the installation of playground safety surfacing shall be provided. The representative shall supervise the installation to ensure that the system meets the impact attenuation requirements as specified herein.