

## Playground Protective Surfacing Guide Specification

### We keep tires turning long after they've left the road

Tires keep the world moving. As tires turn, goods are delivered, people are transported, and plans are executed. But what happens when they are worn out and stop turning? Worldwide, more than 5 million tires are scrapped every day. In many parts of the world, they become a waste problem, as there are left to degrade in landfill sites – or are incinerated, emitting large amounts of CO<sub>2</sub>.

At Genan, we have turned this waste problem into a green opportunity. We recycle end-of-life tires (ELT) for the reuse in a variety of ways. Every day, we can recycle up to 150,000 tires and reduce CO<sub>2</sub> emissions to the atmosphere by 280,000 tons a year – that's the equivalent of what 100,000 diesel cars emit in one year. In short, the planet has a problem, and we have a solution. We keep tires turning in an ongoing circle of life – which makes a substantial difference for the well-being of Earth. We call that striving for a sustainable future.

### Sustainability in production and in relations

Sustainability is at the core of what we do – but it is also at the core of how we do it. We consistently strive to minimize energy consumption in our recycling operations and to be as environmentally friendly as possible. And we believe in building sustainable relationships with our customers and business partners as well. We do that by committing to fundamental principles of transparency, the highest quality standards, and an innovative drive.

### Is a used tire the solution to your challenge?

Tires recycled by Genan are used for many different applications. Tire wire is remelted into new steel. Rubber powder and granules are used as raw materials by manufacturers that produce things like asphalt, mats, floors, tiles, noise reduction solutions, handles, paint, coatings, and binding agents. Rubber granulate is used as infill in football fields with artificial turf, and both granulate and pellets become the bouncy base layers of playgrounds and running tracks. And you can even go full circle and make new tires from old ones. The only limit is your imagination.

In our many development partnerships with our customers, we combined their needs for recycled rubber with our product knowledge. Together, we find a green solution to whichever challenge you may be facing - and we keep the wheels turning for a greener tomorrow.

## GENAN SAFE-PLAY

Surveys by the United States Consumer Product Safety Commission (CPSC) and others have shown that falls from playground equipment...are a significant cause of injuries to children...Use of appropriate impact-attenuating surfacing materials in the zone of playground equipment can reduce the risk of fall-related injury. In particular, it is believed that the risk of life-threatening head injuries is reduced when appropriate surfacing materials are installed. -ASTM F1292

Designed to reduce the risk of injury from playground equipment falls, Genan playground protective surfacing consists of a polyurethane-bound cushion layer of recycled rubber engineered buffing pellets overlaid with a polyurethane-bound wear surface of colorful recycled rubber TPV or EPDM granulates. IPEMA certification is based on tested product thicknesses of 3-inches for 6-foot fall height and 5-inches for 10-foot fall height.

Made from 100% recycled material, guaranteed available, and with easy on-site installation. Applications include municipal, school, preschool, and daycare playgrounds, as well as outdoor exercise equipment installations.

### GENAN SAFE-PLAY

- Base Layer: 2-1/2- or 4-1/2-inch-thick GENAN SAFE ELT ENGINEERED BUFFINGS.
- Top Layer: 1/2-inch-thick layer of EPDM, TPV, or GENAN COATED TOP LAYER granulates.

## SECTION 321816.13 – PLAYGROUND PROTECTIVE SURFACING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes: Playground protective surfacing.
- B. Related Sections:

Specifier: Edit or add to list below as required for Project.

- 1. Division 03 Sections for concrete substrate supporting surfacing.
- 2. **[Section 116813 "Playground Equipment"] [Section 116816 "Play Structures"]** for heights of playground equipment.

#### 1.2 REFERENCES

Specifier: If retaining this Article, edit list to correspond to references retained after editing.

- A. References, General: Versions of the following standards current as of the date of issue of the project or required by applicable code apply to the Work of this Section.
- B. ASTM International (ASTM):
  - 1. ASTM F1292 - Standard specification for Impact Attenuation of Surfacing materials Within the Use Zone of Playground Equipment.
- C. International Play Equipment Manufacturers Association (IPEMA):
  - 1. Certification Program.

#### 1.3 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Review handling and installation methods, coordination with other work, and protection.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Sustainable Design Submittals:

Specifier: Add sustainable design submittals if required. Genan surfacing may be eligible for LEED 2009 MR Credit 4 - "Recycled Content."

- 1. Postconsumer and preconsumer recycled content and cost for recycled content.
- C. Shop Drawings: For each type of protective surfacing include the following:
  - 1. Plans, sections, and details.

Specifier: Edit subparagraph below as required.

2. Fall heights and location of use zones for equipment and structures specified in [**Section 116813 "Playground Equipment"**] [**Section 116816 "Play Structures"**]."

D. Samples: Submit two pieces in manufacturer's standard size, showing appearance of specified finish.

#### 1.5 INFORMATIONAL SUBMITTALS

A. Manufacturer Instructions: For the following:

1. Delivery, storage, and handling.
2. Installation.
3. Cleaning and repair.

B. Sample Warranty.

C. Certificates: Indicating IPEMA certification.

#### 1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For playground protective surfacing.

#### 1.7 QUALITY ASSURANCE

A. Installer: Experienced Installer employing workers trained by manufacturer.

**Specifier: Retain "Mock-Ups" below if required for Project.**

B. Mock-Ups: Install at location and in size acceptable to Architect. Accepted mock-up may remain as part of Work.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original unopened packaging with labels intact.

B. Store materials protected from weather elements and at temperatures above 32 degrees F (0 degrees C).

C. Comply with manufacturer's storage instructions.

#### 1.9 WARRANTY

A. Submit surfacing manufacturer's limited warranty against defects in material and workmanship agreeing to repair or replace surfacing components that fail in materials under normal use within the specified warranty period.

1. Warranty Period: Three years.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURER

- A. Manufacturer: Provide products of [Genan Inc.](#), 18038 Beaumont Hwy., Houston, TX 77049: (713) 674-8500.
1. Substitutions not permitted.

Specifier: Retain paragraph above for proprietary specifications or delete and retain below if competitive bidding is required for Project. Do not retain both.

### 2.2 PERFORMANCE CRITERIA

Specifier: Verify that fall heights and use zones are clearly identified on Drawings.

- A. Shock Attenuation Value: ASTM F1292. Provide system with pad thickness and layout as required to achieve, G-max value not exceeding 200 and Head Injury Criteria (HIC) not exceeding 1,000 based on fall heights and use zones for equipment and structures indicated on Drawings.
- B. Recycled Content: 100 percent post-consumer content.

Specifier: If more than one type of Playground Protective Surfacing (PPS) is used, assign a unique number (PPS#) to each type and show location of each type on Drawings. Consult [Genan Inc.](#) for assistance (713) 674-8500.

### 2.3 PLAYGROUND PROTECTIVE SURFACING <PPS# \_\_>

- A. Dual-density, impact-attenuating, seamless playground protective surfacing system consisting of base cushion layer and top wear layer made from recycled rubber mixed with polyurethane binder.
1. Product: Genan Safe-Play by Genan, Inc.

Specifier: Retain first option in paragraph below for 6-foot fall heights; retain second option for 10-ft fall heights.

2. Base Layer: [~~2-1/2-inch-~~] [~~4-1/2-inch-~~] thick layer of cylindrical rubber pellets, 35 mm long with 3.8 mm diameter, manufactured from recycled end-of-life tires free from steel wires, dust, and foreign materials, coated with aliphatic polyurethane binder.
3. Top Layer: 1/2-inch-thick layer of TPV or EPDM rubber granulate, manufacturer from 100 percent recycled end-of-life tire granulates, free from steel wires, dust, and foreign materials, color-coated with inert, non-toxic pigments and aliphatic polyurethane binder.
  - a. Colors as selected by Architect from manufacturer's standards.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with installation tolerances and other conditions affecting performance of the Work. Verify the following for compliance with requirements:
  - 1. Substrate preparation.
- B. Ambient Air Temperature: 49 degrees F (10 degrees C) or higher and rising at time of installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

Specifier: Retain "Compacted Sub-base Preparation" or "Hard Substrate Preparation" as appropriate for Project.

- A. Compacted Sub-base Preparation: Compact and prepare according to manufacturer's instructions.
- B. Hard Substrate Preparation: Fill and repair cracks, holes, high spots, and depressions to produce a smooth surface free of bumps or ridges.
- C. Comply with manufacturer's instructions for preparation and installation of surfacing system.
- D. Allow base layer to cure for 24 hours before placing top layer.

### 3.3 PROTECTION

- A. Protect completed installation from weather elements and other damage.
- B. Protect installed work from other construction activities as installation progresses. Prohibit traffic over system until acceptance by Owner.
- C. Keep area clean throughout construction period.

END OF SECTION

Specifier: Coordinate the following with Drawings:

- Locations and types of known underground items that could be impacted by installation of PPS.
- Plans of areas to receive PPS. Show the use zone for each type of play equipment or play structure.
- Location, details, and placement. Include color differences, if any, on plans.
- Finish elevations of PPS and adjacent surfacing.
- Heights for PPS for each play structure.
- Extent of drainage/separation geotextile under loose-fill surfacing.
- Surface and subsurface drainage systems, including drainage panels or aggregate courses, and the location of the connection to drainage structures and other site drainage systems.
- Patterns, colors, or graphics for PPS if any.

THE ABOVE INSTALLATION GUIDELINES ARE NOT A WARRANTY OR GUARANTEE OF THE PRODUCTS OF ANY KIND. IT IS THE PURCHASER OF THE PRODUCT'S SOLE RESPONSIBILITY TO ASSURE THE CORRECT AND SAFE INSTALLATION OF THE PRODUCT, AND GENAN INC. EXPRESSLY DISCLAIMS ANY LIABILITY OR CLAIMS RELATED TO THE IMPROPER OR FAULTY INSTALLATION OF THE PRODUCT TO THE FULLEST EXTENT ALLOWED BY LAW, THE PURCHASER OF THE PRODUCT DOES HEREBY EXPRESSLY FOREVER RELEASE, DISCHARGE AND SHALL DEFEND AND INDEMNIFY GENAN INC., AND THEIR RESPECTIVE AFFILIATES, PARTNERS, OFFICERS, EMPLOYEES, AGENTS, SUCCESSORS AND ASSIGNS, FROM ANY AND ALL SUCH CLAIMS ("RELEASE AND INDEMNITY"). THIS RELEASE AND INDEMNITY SHALL BE EFFECTIVE AS A BAR TO ALL ACTIONS, CAUSES OF ACTION, LAWSUITS, PROCEEDINGS, OBLIGATIONS, COSTS, EXPENSES, ATTORNEY'S FEES, DAMAGES, LOSSES, CLAIMS, LIABILITIES AND DEMANDS OF ANY KIND, WHETHER BASED ON VIOLATION OF LAW, BREACH OF DUTY, EQUITY, NEGLIGENCE, DURESS OR ANY OTHER CAUSE OF ACTION BASED UPON ANY OTHER THEORY ("CLAIM(S)"). THIS RELEASE AND INDEMNITY MAY BE PLEADED AS A FULL AND COMPLETE DEFENSE TO ANY CLAIMS.