

Bison Innovative Products

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PAVER TRAY
Specification

Ideal for use with Bison Pedestals, the Bison Paver Tray* offers a simple and lightweight paver backing to enhance the impact resistance and provide additional strength to paver surface materials for outdoor areas, limiting the risk of breakthrough.

Bison Paver Tray System Specification**SECTION 073214 Ceramic and Porcelain Roof Tiles****PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Bison Paver Tray for use with pedestal systems.

1.2 RELATED SECTIONS

**** NOTE TO SPECIFIER **** Delete any sections below not relevant to this project; add others as required.

- A. Section 044000 – Stone Assemblies
- B. Section 044100 – Dry-Placed Stone
- C. Section 075000 – Membrane Roofing
- D. Section 077246 – Roof Walkways
- E. Section 077616 – Roof Deck Pavers
- F. Section 096900 – Access Flooring

1.3 REFERENCES

**** NOTE TO SPECIFIER **** Delete references from the list below that are not actually required by the text of the edited section.

Bison Paver Tray testing:

- A. ASTM D5420-10 Modified Impact Test
- B. ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C
- C. ASTM E108 Standard Test for Spread of Flame
- D. ASTM E2322 Uniform and Concentrated Load on Pedestals
- E. ASTM D7234 (*Modified*) Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers
- F. LARR 26041 – Versadjust Pedestal System to 24", Bison Paver Tray and 2cm Paver

1.4 SUBMITTALS

- A. Submit under provisions of Section 013300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage/Handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Submit shop drawings detailing the installation methods. Coordinate placement with locations noted on the Contract Drawings.
- D. Fire Resistance Ratings: As required for exterior pedestal supported deck systems by the presiding jurisdiction.
- E. Wind Uplift Ratings: As required for exterior air permeable pedestal supported deck systems by the presiding jurisdiction.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single Manufacturer with five (5) years of experience minimum.
- B. Installer Qualifications: Bison recommends the Installer have a minimum of two (2) years proven construction experience, be capable of estimating and building from blueprint plans and details, determining elevations, and properly handling materials. All work must comply with the Bison installation procedures for pedestals specified herein.
- C. Special Considerations: The Contractor assumes the responsibility for and must take into consideration the structural capability and adequacy of the structure to carry the dead and live load weight(s) involved, and when appropriate, make sure that the density of any insulation is satisfactory to resist crushing and damaging the waterproofing membrane.
- D. The Bison Pedestal System is not intended to be part of a ballasted roofing system and does not shield the underlying roofing system from wind or other loads. The underlying roofing system must be capable of resisting the full design wind or other loads appropriate for a specific project.

**** NOTE TO SPECIFIER **** Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

- E. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship is approved by Architect (if applicable).
 - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store Bison Paver Trays and system components with labels intact and legible.
- B. Immediately upon receipt inspect all delivered materials to ensure they are undamaged and in good condition. Claims for damages must be made to the Driver/Carrier *prior* to accepting delivery. Note any visual damage to containers or packaging material on the bill of lading *before* the Driver leaves. Any damage should be noted on the bill of lading, photographed, and then reported to Bison immediately.
- C. Store Bison Paver Trays out of direct sunlight in a dry area and/or cover with tarp.
- D. Store and dispose of solvent-based materials such as construction adhesives or paint thinners in accordance with requirements of local authorities having jurisdiction.

- E. In each Order include an additional 2-5% in spare materials to have on hand for damage replacement; depending on the size of the job and as directed by the Architect.

1.7 PROJECT CONDITIONS

- A. Bison Paver Trays listed in this section are for use with pedestrian traffic only. Bison Paver Trays are not designed for supporting decks that carry vehicular traffic or equipment, including but not limited to motorized snow removal equipment, window washing, scaffolding structures, ATV's, forklifts, or any motorized vehicles.
- B. In accordance with NRCA roofing and decking guidelines, the recommended minimum installation temperature is 50°F (10°C) and rising. **IMPORTANT:** Pavers can become brittle in extremely cold conditions. Use additional caution when working with pavers in temperatures colder than 50°F (10°C). If breakage occurs, replace paver and tray immediately.
- C. It is recommended that the Bison Paver Trays sit above the waterproofing, integral flashing, and/or counter flashing. In situations where the perimeter of the deck contacts the flashing material, protective wall covering should be specified if deemed necessary.
- D. **IMPORTANT:** It is the responsibility of the installer to make sure the installation of the Bison Paver Tray system meets all local and national codes, including but not limited to the National Electrical Code, regarding installations around swimming pools or other water features, which may require grounding and/or bonding. Failure to do this may void warranties or cause the risk of shock or serious injury for which Bison is not responsible.
- E. Bison recommends designating zones in each project that provide for heavier features with additional pedestal supports and/or different deck materials under the finished feature. Refer to pedestal specifications and details for additional information on weight capacities and supports. Any feature that creates vibration must be provided for in special consultation and written agreement with Bison. Cell phone towers, heavy planters, and other similar features require their own separate support designed by an Architect or professional Engineer. Any deck features that provide a concentrated load must have extra supports in addition to the main pedestal system that supports the walk deck. Features supported by legs or feet are not advised and are considered unacceptable because of the consequences of point loading. Bison does not recommend point loading pavers as likelihood for damage is greatly increased. Permanent features and items greater than 250 lbs (113 kg) should be installed directly on pedestals in lieu of installing over surface pavers.

1.8 WARRANTY

- A. At project closeout and upon request, Bison can provide to the Owner or Owner's Representative an executed copy of the Manufacturer's standard document outlining the terms, conditions, and limitations of their limited warranty against manufacturing defects for a period of five (5) years. Bison must approve all warranty related repairs, and unauthorized repairs void this limited warranty.
- B. The Contractor warrants that his work will remain free from defects of labor and materials used in conjunction with his work in accordance with the General Conditions for this project or a minimum of five (5) years.
- C. It is the responsibility of the Contractor installing the product listed in this section to coordinate warranty requirements with any related sections or adjacent work. Notify the Architect immediately of any potential lapses or limitations in warranty coverage.
- D. Bison Paver Trays are covered by a limited five (5) year warranty. Bison Paver Trays are warranted to the original Owner to be free of defects in material and workmanship for the period of five (5) years from the date of purchase. Damage to the Bison Paver Tray resulting from impact or broken surface material is not covered by the warranty. Bison is not responsible or liable for the cost of any Bison Paver Tray that breaks unless such breakage is caused by a defect in material or workmanship. This warranty applies to conditions of normal use, as defined herein, and does not apply to damage resulting from abuse, excess weight, impact, or acts of nature. Bison's sole and exclusive liability under this warranty is limited to the replacement cost of any defective Bison Paver Tray. This warranty does not cover shipping damage. Shipping damage must be reported directly to Bison immediately upon receipt of products. Please save all product packaging for a short period of time in case return shipping is required. Bison makes no other warranties, either express or implied, with respect to the use of the Bison Paver Tray, including warranties of merchantability or fitness for a particular purpose.

1.9 MANUFACTURERS

****NOTE TO SPECIFIER**** Retain one of the following paragraphs 1.9 A-C; to coordinate with requirements of Division 1 section on product options and substitutions.

- A. Acceptable Bison Paver Tray Manufacturer: Bison Innovative Products; 701 Osage Street, Unit 120, Denver, CO 80204. Toll Free 800-333-4234. Phone 303-892-0400. Fax 303-825-5988. Email: info@bisonip.com. Web: www.bisonip.com.
- B. Substitutions: Not Permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 012500.

PART 2 PRODUCTS

The Bison Paver Tray will not prevent any surface material from cracking, chipping, or breaking. In the event the surface material cracks, chips, or breaks, the Bison Paver Tray is designed to prevent an individual from falling through the paver surface to the subsurface below. The Bison Paver Tray is intended to support the surface material after absorbing impact for a limited time. To avoid further damage or injury, the customer **MUST REPLACE** any cracked, chipped, or broken surface materials and the accompanying Bison Paver Tray as soon as possible. The Bison Paver Tray is not intended to be a reusable product and must be replaced with the surface paver. When using Bison Paver Trays with customer supplied surface materials, including but not limited to concrete, stone, porcelain, and/or ceramic pavers not sold by Bison, the customer **MUST** independently verify surface material product strength, span, weight bearing capacity, material compatibility, and suitability for the intended use. **IMPORTANT:** Wind Uplift Systems must be installed precisely according to separate Wind Uplift Engineering documents not included herein.

2.1 BISON PAVER TRAYS

- A. Model PT-TRAY-2424-3
 - 1. Dimensions: 23.43"L x 23.43"W x 0.45"H (595 x 595 x 12 mm)
 - 2. Paver Size: Fits 595-602 x 595-602 mm pavers
 - 3. Weight: 9.52 lbs (4.32 kg)
 - 4. Component Materials:
 - a. G90 Galvanized 20 ga. Sheet Steel – LEED Information--contains approximately: 55.2% Scrap Steel; 41.3% Alloys and other Iron Units; 37.2% Post-Consumer Recycled Content; 18.0% Pre-Consumer Recycled Content
 - b. Peel and Stick Butyl Adhesive Pad – Color: Black; Odor: No Objectionable Odors; Service Temperature: -20F-200F; %Solids: >99%; Specific Gravity: 1.60 +/- 0.05 g/cm³; Tensile Yield: Cohesive Failure 17 psi; Weight: 1.55 lbs +/- 0.10 lbs
- B. Model PT-TRAY-4812-3
 - 1. Dimensions: 47.01"L x 11.61"W x 0.45"H (1194 x 295 x 12 mm)
 - 2. Paver Size: Fits 1194-1201 x 295-302 mm pavers

3. Weight: 9.59 lbs (4.35 kg)
4. Component Materials:
 - a. G90 Galvanized 20 ga. Sheet Steel – LEED Information--contains approximately: 55.2% Scrap Steel; 41.3% Alloys and other Iron Units; 37.2% Post-Consumer Recycled Content; 18.0% Pre-Consumer Recycled Content
 - b. Peel and Stick Butyl Adhesive Pad – Color: Black; Odor: No Objectionable Odors; Service Temperature: -20F-200F; %Solids: >99%; Specific Gravity: 1.60 +/- 0.05 g/cm³; Tensile Yield: Cohesive Failure 17 psi; Weight: 1.55 lbs +/- 0.10 lbs
- C. Model PT-TRAY-4824-3
 1. Dimensions: 47.01”L x 23.43”W x 0.45”H (1194 x 595 x 12 mm)
 2. Paver Size: Fits 1194-1201 x 595-602 mm pavers
 3. Weight: 19.07 lbs (8.65 kg)
 4. Component Materials:
 - a. G90 Galvanized 20 ga. Sheet Steel – LEED Information--contains approximately: 55.2% Scrap Steel; 41.3% Alloys and other Iron Units; 37.2% Post-Consumer Recycled Content; 18.0% Pre-Consumer Recycled Content
 - b. Peel and Stick Butyl Adhesive Pad – Color: Black; Odor: No Objectionable Odors; Service Temperature: -20F-200F; %Solids: >99%; Specific Gravity: 1.60 +/- 0.05 g/cm³; Tensile Yield: Cohesive Failure 17 psi; Weight: 1.55 lbs +/- 0.10 lbs

2.2 BISON PAVER TRAY FASTENER

- A. Model: FS-12 Spline* (*US Patent Pending.) – Secures Bison Paver Trays to Bison Pedestals:
 1. Recommended for use with Bison Pedestals and paver tray assemblies.
 2. Components: Spline, long screw, and short screw – long screw for use with Bison Adjustable Pedestals; short screw for use with Bison HD50 and HD75 Fixed Height Pedestals.
 3. Weight: 1.41 oz (40 g)
 4. Material: Mineral Filled High Density Copolymer Polypropylene (Bison #B-PP-2025)

PART 3 EXECUTION

3.1 EXAMINATION

- A. Prior to Bison Paver Tray and paver assembly and/or installation verify the following:
 1. All elevations and deck dimensions are consistent with information submitted to Bison for quoting and/or take-off.
 2. Special features and anticipated live/dead loads on the paver tray assemblies are compatible with the deck system.
 3. Substrates have been properly prepared, and the project is set to proceed. If substrate preparation is the responsibility of another Installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. The substrate surface that will receive the Pedestals and Paver Trays must be:
 1. Well compacted if on-grade.
 2. Structurally capable of carrying the dead and live loads anticipated if over occupied space.
 3. Clean and free of debris that could impair the performance of the Pedestals or Cubes.
- B. Be aware that stone, ceramic, or porcelain tiles/pavers tend to be heavy in addition to being brittle and fragile. Take time to determine how you will handle and install the pavers to ensure they are not damaged during the installation process. Wear puncture resistant work gloves, when handling to protect hands from pinching, cuts, or other possible hand injuries.
- C. Determine a method for assembling the paver to the Bison Paver Tray which:
 1. Prevents damage to the paver surface.
 2. Ensures the Bison Paver Tray is adhered to the paver properly (i.e. square/flush).
- D. Paver Tray Assembly:
 1. The Bison Paver Tray features a peel and stick adhesive pad, which allows for a mess-free bond to the surface paver.
 2. Place paver upside down on a clean flat work surface such as a sheet of plywood. Place an Assembly Guide flush against two corners and screw down each if possible, being careful not to damage the roofing membrane.
 3. Remove the release paper from the adhesive on the Bison Paver Tray, being careful to keep the adhesive free of moisture and debris.
 4. Place the Bison Paver Tray adhesive-side down over the upside down paver in the Assembly Guide, and slowly lower the Bison Paver Tray onto the paver, making sure to keep all of the edges properly aligned. Firmly press the Bison Paver Tray onto the paver prior to stacking.
 5. Starting with the first paver face down, carefully stack the paver tray assemblies face to face in a staggered arrangement prior to installation, making sure to keep the stack stable and balanced. Store overnight out of direct sunlight in a dry area and/or cover with tarp.

3.3 INSTALLATION

- A. General Safety Precautions: Wear safety glasses with side shields (or a safety visor which protects one’s face and eyes) when cutting this product, or during any process which may generate excessive dusts and burrs. Respirators must be worn if the ambient concentration of airborne contaminants exceeds prescribed exposure limits (see OSHA Guidelines). Dust masks may be worn to avoid the inhalation of nuisance dust, but dust masks are not adequate protection in environments above the occupational exposure limit. Any cutting or grinding process which could generate airborne particulates should be done outdoors or in a well-ventilated area. Refer to product SDS for more information. If installing Bison Paver Trays near Bison Wood Tiles take EXTREME CAUTION to cover the Wood Tiles and prevent grinding dusts from settling on them, as the galvanized dust reacting with the acetic acid in the wood can lead to black spotting on the Wood Tiles as the iron in the dust begins to oxidize into a black-colored rust.
- B. Cutting:
 1. Bison recommends cutting pavers after adhering them to the Bison Paver Tray.
 2. When cutting a paver tray assembly, ensure you have all the proper safety equipment: hearing, respiratory, eye, and hand protection are HIGHLY RECOMMENDED.
 3. Make sure that you are using an appropriate wet tile saw and a new saw blade designed for use with porcelain tiles; older, worn blades will affect the quality of the cut.
 4. To minimize the possibility of chipping the paver, Bison recommends cutting paver tray assemblies Paver Tray side up.
 5. After the paver tray assembly has been cut to the desired dimensions, use a metal file to smooth any sharp edges or burrs created along the cut line. DO NOT run your fingers along the cut line or along any visible burrs.
- C. Fastening:

1. Combine the Bison Paver Tray with the Bison FS-12 Spline and Pedestals for an unparalleled combination of collapse resistance, concealed stability, and future cavity accessibility.
2. Bison strongly recommends the use of Bison Pedestals and FS-12 Splines when installing Bison Paver Trays in conjunction with surface pavers. The Bison Pedestal/Fastening System installs quickly, securely, and allows for removal later if desired/required. The FS-12 Splines, available exclusively from Bison, secure the Bison Paver Trays to Bison Pedestals while remaining out of sight without damaging the paver surfaces. A long screw is provided for use with Bison Adjustable Pedestals, and a short screw is provided for use with Bison HD50 and HD75 Fixed Height Pedestals.
3. To install the FS-12 Spline, use the spline posts to slide FS-12 Splines into the channel between two adjacent paver tray assemblies.
4. Use a T-10 star bit and the included long screw to secure the FS-12 Spline to Bison Adjustable Pedestals, or use a #1 square bit and the included short screw to secure the FS-12 Spline to Bison HD50 or HD75 Fixed Height Pedestals. Bison recommends the use of a GRK extended bit from your local hardware store for easier installation.
5. Drive the screw through the center of the spline screw slot and into the center of the pedestal top. Tighten until the screw head base is flush with the top of the spline rib. Remove spline posts with pliers, taking care not to damage the pavers. A small screwdriver can be used to manipulate the spline if the posts have been prematurely removed.
6. All products to be installed per the most recent Bison Paver Tray Installation Details at the time of installation. NOTE: Additional Bison Paver Tray Installation Details are available online at www.bisonip.com.
7. If a scenario is encountered during installation which is not covered in the installation details, please contact Bison.

3.4 FIELD QUALITY CONTROL

A. During Installation:

1. Inspect construction progress regularly to ensure that grid lines and spacing are being maintained in a straight and consistent pattern, lateral motion is restricted, and the paver tray assemblies and Pedestals are level and not rocking; shim as required. Particular attention should be paid to pedestrian entrances or access points to eliminate potential trip hazards.
2. Inspect to ensure that all perimeter sides of the deck system are securely contained to restrain all sides of the deck. Surface materials must fit tightly against all pedestal spacing tabs, and the gap or space at all perimeter edges must not exceed one tab width or 3/16" (4.5 mm).
3. While pavers are durable, they can be damaged by mishandling or careless treatment. Please note that if tools or equipment are carelessly dropped on the paver surface, chips, scratches, surface damage, cracking, and breakage can occur, especially in cold temperatures. Replace cracked, chipped, or damaged paver tray assemblies immediately.

B. Immediately Following Installation: The Owner, or the Owner's Agent, shall carefully inspect the deck system to be positive that:

1. The new deck system is adequately blocked on all sides to contain and prevent lateral movement of the surface decking and related components.
2. There is no more than one tab width spacing between any pavers or from perimeter containment [not to exceed 3/16" (4.5 mm)].
3. There is no rocking of paver tray assemblies as foot traffic is applied to the surface decking.
4. All required spacer tabs and fastening kits are installed and secure.
5. The installed pavers are protected from damage which may result from continued site construction.

C. After Installation: The Installer and/or Architect has the responsibility of informing the Owner about performing routine maintenance on the deck.

This includes:

1. Checking for rocking pavers and properly applying shims as the substrate can settle and require Pedestal adjustment.
2. Periodically checking for broken, damaged, or missing tab sets and replacing them to limit deck movement.
3. Maintaining intact and structurally sound perimeter containment.
4. IMMEDIATELY replacing cracked, chipped, broken, or damaged paver tray assemblies or pedestals. If a paver requires replacement, then the Bison Paver Tray which accompanied it *also requires replacement* even if the damage to the paver appears to be only on the "surface".
5. Retaining extra Bison Paver Trays and pavers in a convenient location for future replacements.



3.5 CARE & MAINTENANCE

- A. If available, follow surface paver Manufacturer instructions for cleaning, sealing, etc. If no information is provided by the Manufacturer, the following can serve as a general guideline.
- B. Cleaning: After installing paver tray assemblies, Bison recommends sweeping paver surfaces thoroughly and mopping with a clean damp mop using a pH-balanced household detergent such as diluted dish soap as residue could discolor pavers.

PROPOSITION 65

⚠WARNING: This product can expose you to chemicals including nickel (metallic), which are known to the State of California to cause cancer, and lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

END OF SECTION

<p>PT-TRAY-2424 PAVER SUPPORT TRAY</p> 	<p>PT-TRAY-2424</p> <p>Dimensions: 23.43"L x 23.43"W x 0.45"H (595 x 595 x 12 mm) Available in Custom Sizes</p> <p>Paver Compatibility: 595-602 x 595-602 mm Pavers</p> <p>Weight: 9.52 lbs (4.32 kg) Weight PSF: 2.4 PSF (11.72 kg/m²)</p> <p>Origin: Denver, CO USA</p>	<p>FS-12 12" Spline</p> 	<p>FS-12</p> <p>Secures Bison Paver Trays to Bison Pedestals. Long screw for use with Bison Adjustable Pedestals; Short screw for use with Bison HD50 and HD75 Fixed Height Pedestals.</p>
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