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SECTION 12 93 00 – STEET BENCHES

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DELETE ALL "SPECIFIER NOTES" WHEN EDITING THIS SECTION.

# GENERAL

## CONDITIONS AND REQUIREMENTS

### The General Conditions, Supplementary Conditions, and Division 01 – General Requirements apply.

## SECTION INCLUDES

## Section 12 93 00 – Street benches of the following types:

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SPECIFIER NOTES: DELETE OPTIONS THAT ARE NOT REQUIRED FOR THIS PROJECT.

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### BR.

### SS.

## RELATED SECTIONS

### Section 12 58 83 – Custom Residential Furniture.

### Section 12 67 23 – Benches.

### Section 12 40 00 – Furnishing and Accessories.

### Section 12 93 43 – Site Seating and Tables.

## REFERENCES

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SPECIFIER NOTES: RETAIN ONLY THOSE REFERENCES THAT ARE REQUIRED AFTER THE SECTION IS EDITED

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### Reference Standards

### Americans with Disabilities Act (ADA).

### ASTM International (ASTM):

#### ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus.

#### ASTM C1371: Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.

#### ASTM D543: Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents,

#### ASTM D790: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

#### ASTM E903: Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.

#### ASTM E1980: Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces,

#### International Organization for Standardization (ISO):

#### ISO 9001:2015: Quality Management System Certificate Number FS 73051.

#### ISO 14001:2015: Environmental Management System Certificate Number EMS 670579.

#### Singapore Standards (SS):

#### SS485:2011: Specifications for Slip Resistance Classification of Public Pedestrian Surface Materials.

#### SS245:1995: Specifications for Water Absorption.

## SUBMITTALS

### Product Data:

#### Submit manufacturer's shop drawings and maintenance instructions.

#### Manufacturer Information:

#### Provide overview literature describing the manufacturer’s overall scope of products.

#### Provide URL of the manufacturer’s website. The website must provide access to technical data, images, and general product information.

#### Provide manufacturers shop drawings.

#### Provide manufacturer’s guide specifications.

## QUALITY ASSURANCE

### Qualifications:

### Manufacturer: Minimum of 20 years experience in the manufacturing of reinforced stone architectural products.

### Sustainability Standards Certifications.

### LEED: USGBC (United States Green Building Council): MR Credit 4: Recycled Content under LEED® (Leadership in Energy and Environmental Design).

### Singapore Green Building Product Certification: Product Leader (SGBP 2019-2728) from Singapore Environmental Council.

### Singapore Green Label Certification: 022-016-0270 Eco-Friendly Building Material from Singapore Environmental Council.

### United States Environmental Protection Agency: US EPA 1311 Toxicity Characteristic Leaching Procedure (PLCP) – Specifications for testing of inorganic contaminants.

### Heavy Metals Testing Standards: Heavy Metals Test Analysis: Specifications for Testing of Hazardous Substances.

## DELIVERY, STORAGE AND HANDLING

### Delivery: Deliver materials to the installation site in manufacturer’s original packaging.

### Storage:

### Store in a clean, dry location until installation.

### If grates are stored for prolonged periods on-site before use or installation, protect the grates from sunlight and rain.

### Handling:

### Handle products in accordance with the manufacturer’s instructions.

### Use provided lifting hooks for lifting high-performance grates. Care must be taken when lifting and moving grates.

### Grates should not be dropped, thrown, or dragged.

## WARRANTY

* + 1. Manufacturer’s Warranty:
       1. Provide manufacturer’s standard limited warranty in effect at the date of purchase.
          1. Jonite® warrants that the Product is suitable for the purpose for which it was made for a period of one year from the date the commercial invoice and packing list issued by Jonite® is endorsed by the purchaser. For the avoidance of doubt, a purchaser means a person, firm, or corporation, jointly and severally if there is more than one, acquiring the Product from Jonite®.

# PRODUCTS

## MANUFACTURERS

### Specified Manufacturer: Jonite®. Allentown, Pennsylvania. 484-224-2972. Email: [info@Jonite®.com](mailto:info@jonite.com). Web: [www.Jonite®.com](http://www.jonite.com).

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SPECIFIER NOTES: DELETE ONE OF THE FOLLOWING TWO PARAGRAPHS.

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### Substitutions: Not Permitted.

### Requests for approved substitutions will be considered in accordance with provisions specified in Section 01 62 00 – Product Options.

## DESCRIPTION

### Jonite® Street Benches: Street benches composed of reinforced stone. Jonite®’s street benches are designed to be sleek, modern, and yet able to withstand the elements – rain, sun, sleet, snow, and more. These benches are ergonomically designed and versatile. They come in fully knock-down or pre-assembled systems to accommodate standard or customize components while being sturdy and cost-efective. These benches can be customized to create a new depth to your designs. In addition, the street benches have low-heat absorption.

### Sustainability: Street benches composed of at least 30 percent recycled materials.

### Core Materials: 95 percent agglomeration of natural stone substrates and mineral oxides formed under a proprietary vacuum and compression process. Composed of a proprietary structural polymer hybrid system of a heterogeneous blend.

### Physical:

#### Water Absorption: 0.09 percent.

#### Slip Resistance Classification: Very low notational contribution of the floor surface to the risk of slipping when wet.

#### Chemical Resistance: Achieved.

#### Rust and Corrosion: Resistant.

#### Finish: Natural stone matte.

#### Colors: [Ivory white], [ Wacky white], [Rosy beige], [Desert beige], [Champagne yellow], [Terracotta red], [Teak brown], [Mocca brown], [Granite gray], [Ash gray], [Steel gray], [Slate gray], [Bamboo green], [Smoky green], [Charcoal black], [Ebony black], or [Color to be customized according to the sample submitted to the manufacturer].

### Structural and Mechanical Properties:

#### Tensile Strength: 8 to 25 Megapascal.

#### Compression Strength: 47.8 Megapascal.

#### Flexural Strength: 21.1 Megapascal.

#### Modulus of Elasticity: 20 to 40 Gigapascals.

#### Standard Density: 20 to 2400 Kilograms per cubic meter.

#### Elongation at Rupture: 3 percent.

#### Thermal Coefficient of Expansion: 106C-1.

#### Loading Specifications: 5KN – Strictly for pedestrian application.

### Reference Standards

#### ADA compliant models comply with ADA.

#### Complies with ASTM B117-11: Salt resistance.

#### Complies with ASTM C1371-15: Determination of emittance.

#### Complies with ASTM D543:2014: Chemical resistance.

#### Complies with ASTM D790-92: Flexural properties.

#### Complies with ASTM E903-20: Solar absorptance, reflectance, and transmittance.

#### Complies with ASTM E1980: Solar Reflectance.

#### Complies with ISO 9001: 2015: Quality Management Systems.

#### Complies with ISO 14001:2015: Environmental Management Systems.

#### Complies with: SS245:1995 Appendix F - Water Absorption Test.

#### Complies with: SS485:2011: Slip Resistance.

## BR STREET BENCHES MATERIALS

### Product Description: BR Street Benches manufactured by Jonite®: The BR series consists of street benches with ergonomic backing designed for the comfort of users. Available in 2-seater or 3-seater standard configurations.

### Product Basis of Design: BR Street Benches 21110: BR 300-2 SEATER.

#### Width: 1150 millimeters (45.3 inches).

#### Length: 823 millimeters (32.4 inches).

#### Thickness: 780 millimeters (30.7 inches).

### Product Basis of Design: BR Street Benches 21111: BR 300-3 SEATER.

#### Width: 1700 millimeters (66.9 inches).

#### Length: 823 millimeters (32.4 inches).

#### Thickness: 780 millimeters (30.7 inches).

## SS STREET BENCHES MATERIALS

### Product Description: SS Street Benches manufactured by Jonite®: The SS series comprises of benches without backing, to provide uninterrupted sightlines, bringing the spotlight onto the natural surroundings. Available in 2 seating configurations.

### Product Basis of Design: SS Street Benches 21112: SS 210-2 SEATER.

#### Width: 1150 millimeters (45.3 inches).

#### Length: 638 millimeters (25.1 inches).

#### Thickness: 447 millimeters (17.6 inches).

### Product Basis of Design: SS Street Benches 21113: SS 210-3 SEATER.

#### Width: 1700 millimeters (66.9 inches).

#### Length: 623 millimeters (24.5 inches).

#### Thickness: 447 millimeters (17.6 inches).

## ACCESSORIES

### Embossed Insignia: Contact Jonite® for custom embossed insignia.

### Maintenance Accessories:

#### Repair Kit: Repair Kit is a proprietary epoxy putty filler for repair of gaps, cracks, and large chips.

#### Colors: [Standard color: \_\_\_\_] or [Custom color].

#### Perform repairs on gaps, cracks, and large chips in accordance with manufacturer’s instructions.

#### SealFix™ 103: A two-part epoxy mortar formulated for fixing Jonite® components such as L-Trimmers™. It has high strength bonding, is impermeable, chemical-resistant, and suitable for dry fixing.

#### Perform repairs on Jonite® components in accordance with manufacturer’s instructions.

#### ArmorFix™ 108: All Jonite® products are impregnated with a coat of ArmorFix™ 108 for protection, strength, and wear resistance.

#### Apply ArmorFix™ 108 in accordance with manufacturer’s instructions.

#### Kleansol™ 511: A proprietary algae and stain removal solution for Jonite® products.

#### Use Kleansol™ 511 in accordance with manufacturer’s instructions.

#### Lifting Hooks: Recommended for lifting heavy-duty grates.

# EXECUTION

## EXAMINATION

### Examine Project conditions and completed Work and verify that the site is adequately prepared.

### Immediately correct all deficiencies and conditions which would cause improper execution of Work specified in this Section and subsequent Work.

### Proceeding with Work specified in this Section shall be interpreted to mean that all conditions were determined to be acceptable prior to start of Work.

## PREPARATION

### Clean the surface thoroughly before installation.

### Ensure the area is free of dirt and debris.

### Prepare the surface in accordance with manufacturer’s instructions.

## INSTALLATION

### Ensure the installation site is cleaned and prepared.

### Install in accordance with the manufacturer’s instructions and recommendations.

### Install street benches after danger of damage from construction traffic is passed.

## CLEANING

### Clean promptly after installation in accordance with the manufacturer’s instructions.

### Clear dust and debris frequently.

### Dislodge dirt and grime with a high-pressure water jet spray.

### Use soap-less cleaners, mild soap, or neutral pH detergent, clean water, and a non-metal scrub brush. Remove stains with Kleansol™ 511. Apply Armorfix™ 108 after the street benches is dry.

### Do not use harsh cleaning materials like an acid wash as this can damage the street benches.

### Repair or replace the product if damaged.

### PROTECTION

### Protect street benches in accordance with the manufacturer’s instructions.

### Perform regular visual checks of street benches. Ensure street benches are not structurally compromised and there are no visible cracks.

### Do not expose street benches to:

### Heavy cleaning chemicals.

### Cement.

### Do not use street benches as structural elements.

### Do not permit street benches to contact construction debris, masonry, gravel, or organic material.

### Do not wash flooring with chemicals and permit waste to flow through street benches.

### Cleaning Adjacent Floors:

### Remove street benches systematically to prevent confusion by stacking on raised timber or bricks.

### Place street benches back only when floors are clean and dry.

END OF SECTION