

SECTION 33 42 41 – BATHROOM GRATES

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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 33 42 41 – Gratings and Frames for Stormwater Drainage Inlets, Bathroom grates of the following types:

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

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### Slotted Bathroom Grates.

### Waveline Bathroom Grates.

## RELATED SECTIONS

### Section 03 30 00 – Cast-in-Place Concrete.

### Section 22 14 00 – Facility Storm Drainage.

### Section 22 14 26.19 – Facility Trench Drains.

### Section 31 56 26 – Bio-Polymer Trench Drain.

### Section 33 42 36 – Stormwater Trench Drains.

### Section 33 39 13 – Sanitary Utility Sewerage Manholes, Frames, and Covers.

### Section 33 41 00 – Subdrainage

## REFERENCES

### Definitions

### Load Class: Selection of Appropriate Load Class According to BS EN 124:2015.

### Class A15: Strictly for pedestrians and cyclists. Recommended usage is for house drains, pool decks, courtyards, parks, walkways, and pedestrian areas.

### Class B125: For public pathways and car parks. Recommended usage is for slow-moving vehicles under 6614 pounds (3 tonnes) in wheel-load.

### Class C250: For curb-side grates in heavy vehicle parking areas. Recommended usage is for slow-moving vehicles under 12125 pounds (5.5 tonnes) in wheel-load.

### Class D400: For roads, hard-standing areas for fire access. Recommended usage is for slow-moving vehicles under 25353 pounds (11.5 tonnes) in wheel-load.

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

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### Reference Standards

### 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,

#### The British Standards Institution (BSI):

#### BS EN 124:2015: Gully Tops and Manhole Tops for Vehicular and Pedestrian Areas.

#### BS EN 1433:2002: Drainage Channels for Vehicular and Pedestrian Areas.

#### 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. 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® Bathroom Grates: Bathroom grates composed of reinforced stone. The bathroom grates were designed to drain excess and wastewater effectively. The natural stone textures give aesthetically pleasing and cost-effective alternative to stainless steel grates. These grates are used in urinals, cubicles, and even washbasins in public bathrooms. The bathroom grates can be blended with the colours of the floor tiles to create a seamless finish. Jonite®’s bathroom grates have low water absorption to minimise the risk of staining and they are easy to clean without the need for any acid wash.

### Sustainability: Bathroom grates 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.

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SPECIFIER NOTES: DELETE COLORS NOT REQUIRED FOR THIS PROJECT,

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#### 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.

### Reference Standards

#### 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 BS EN124.2015: Standard for Gully Tops and Manhole Tops.

#### Complies with BS EN1433:2002: Drainage Channels for Vehicular and Pedestrian Areas.

#### 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.

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SPECIFIER NOTES: COLLECTIONS, MATERIALS, AND PRODUCTS ARE INDICATED IN THE FOLLOWING PARAGRAPHS. OPTIONS WITHIN ARE INDICATED BY SQUARE BRACKETS. DELETE PARAGRAPHS AND OPTIONS NOT REQUIRED FOR THIS PROJECT.

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## SLOTTED BATHROOM GRATE MATERIALS

### Product Description: Slotted Bathroom Grates manufactured by Jonite®: Minimalistic bathroom grate designs that blend in seamlessly with the bathroom floor.

### Product Basis of Design: Slotted Bathroom Grate 12110: TGS-200.

#### Load Class: A15.

#### Drain Width: 159 to 164 millimeters (6.3 to 6.5 inches).

#### Width: 200 millimeters (7.9 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (1 inch).

### Product Basis of Design: Slotted Bathroom Grate 12112: TGS-250.

#### Load Class: A15.

#### Drain Width: 209 to 214 millimeters (8.2 to 8.4 inches).

#### Width: 250 millimeters (9.8 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (1 inch).

### Product Basis of Design: Slotted Bathroom Grate 12113: TGS-300.

#### Load Class: A15.

#### Drain Width: 259 to 264 millimeters (10.2 to 10.4 inches).

#### Width: 300 millimeters (11.8 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (1 inch).

### Product Basis of Design: Slotted Bathroom Grate 12114: Bone-500.

#### Load Class: 6KN.

#### Drain Width: 455 to 464 millimeters (17.9 to 18.3 inches).

#### Width: 500 millimeters (19.7 inches).

#### Length: 250 millimeters (9.84 inches).

#### Thickness: 30 millimeters (1.2 inch).

### Product Basis of Design: Slotted Bathroom Grate 11110: Waveline-185.

#### Load Class: A15.

#### Drain Width: 150 to 155 millimeters (5.9 to 6.1 inches).

#### Width: 185 millimeters (7.2 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 20 millimeters (0.7 inch).

### Product Basis of Design: Slotted Bathroom Grate 11112: Waveline-220.

#### Load Class: A15.

#### Drain Width: 179 to 184 millimeters (5.9 to 6.1 inches).

#### Width: 220 millimeters (7.2 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (0.7 inch).

### Product Basis of Design: Slotted Bathroom Grate 11113: Waveline-250.

#### Load Class: A15.

#### Drain Width: 209 to 214 millimeters (5.9 to 6.1 inches).

#### Width: 250 millimeters (7.2 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (0.7 inch).

### Product Basis of Design: Slotted Bathroom Grate 11114: Waveline-275.

#### Load Class: A15.

#### Drain Width: 234 to 239 millimeters (9.2 to 9.4 inches).

#### Width: 275 millimeters (10.8 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (1 inch).

### Product Basis of Design: Slotted Bathroom Grate 11115: Waveline-500.

#### Load Class: 6KN.

#### Drain Width: 459 to 464 millimeters (18.1 to 18.3 inches).

#### Width: 500 millimeters (19.7 inches).

#### Length: 250 millimeters (9.8 inches).

#### Thickness: 25 millimeters (1 inch).

## WAVELINE BATHROOM GRATE MATERIALS

### Product Description: High Performance Trench Grates manufactured by Jonite®: This waves-inspired collection of bathroom grates lend a modern touch to the bathroom floor for an additional creative aesthetic.

### Product Basis of Design: Waveline Bathroom Grate 11110: Waveline-185.

#### Load Class: A15.

#### Drain Width: 150 to 155 millimeters (5.9 to 6.1 inches).

#### Width: 185 millimeters (7.2 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 20 millimeters (0.7 inch).

### Product Basis of Design: Waveline Bathroom Grate 11112: Waveline-220.

#### Load Class: A15.

#### Drain Width: 179 to 184 millimeters (5.9 to 6.1 inches).

#### Width: 220 millimeters (7.2 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (0.7 inch).

### Product Basis of Design: Waveline Bathroom Grate 11113: Waveline-250.

#### Load Class: A15.

#### Drain Width: 209 to 214 millimeters (5.9 to 6.1 inches).

#### Width: 250 millimeters (7.2 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (0.7 inch).

### Product Basis of Design: Waveline Bathroom Grate 11114: Waveline-275.

#### Load Class: A15.

#### Drain Width: 234 to 239 millimeters (9.2 to 9.4 inches).

#### Width: 275 millimeters (10.8 inches).

#### Length: 500 millimeters (19.7 inches).

#### Thickness: 25 millimeters (1 inch).

### Product Basis of Design: Waveline Bathroom Grate 11115: Waveline-500.

#### Load Class: 6KN.

#### Drain Width: 459 to 464 millimeters (18.1 to 18.3 inches).

#### Width: 500 millimeters (19.7 inches).

#### Length: 250 millimeters (9.8 inches).

#### Thickness: 25 millimeters (1 inch).

## ACCESSORIES

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SPECIFIER NOTES: OPTIONAL ACCESSORIES ARE INDICATED IN THE FOLLOWING PARAGRAPHS. DELETE PARAGRAPHS NOT REQUIRED FOR THIS PROJECT.

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### 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™ 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 grates 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 grate is dry.

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

### Repair or replace the product if damaged.

### PROTECTION

### Protect grates in accordance with the manufacturer’s instructions.

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

### Do not expose grates to:

### Heavy cleaning chemicals.

### Cement.

### Do not use grates as structural elements.

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

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

### Cleaning Adjacent Floors:

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

### Place grates back only when floors are clean and dry.

### Ensure the drain shoulders and surrounding where grates will be put back into place are cleaned thoroughly.

END OF SECTION