

This MANU-SPEC™ utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat™*, *SectionFormat™* and *PageFormat™*. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification.

This MANU-SPEC specifies a Stone Facing Panels. These products are manufactured by StoneSheets, LLC. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

StoneSheets[®]

SECTION 074223

COMPOSITE WALL PANELS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Thin sliced, honeycomb reinforced stone panels for wall applications.

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. Add section numbers and titles per CSI *MasterFormat* and specifier's practice. In the absence of related sections, delete paragraph below.

- B. Related Sections:

1. Division 4 Sections: Exterior Cladding
2. Division 7 Sections: 074223 Composite Wall Panels (Interior)
3. Division 9 Sections: 097500 Wall Panels
4. Division 9 Sections: 090000 Finishes - Stone

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard. It is a listing of all references used in this section.

1.02 REFERENCES

- A. ASTM International:

1. ASTM C615-99 Standard Specifications for Granite Dimension Stone
2. ASTM C119 Terminology Relating to Dimension Stone
3. ASTM C274 Terminology of Structural Sandwich Constructions
4. ASTM D3878 Terminology for Composite Materials
5. ASTM D907 Terminology of Adhesives
6. ASTM C97 Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone
7. ASTM C880 Test Method for Flexural Strength of Dimension Stone
8. ASTM C99 Test Method for Modulus of Rupture of Dimension Stone

9. ASTM C170 Test Method for Compressive Strength of Dimension Stone
10. ASTM C365/365M-05 Standard Test method for Flatwise Compressive Properties of Sandwich Cores
11. ASTM C297/C297M-04 Standard Test method for Flatwise Tensile Strength of Sandwich Construction
12. ASTM B209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate
13. ASTM 5229/D5229M Test method for Moisture Absorption Properties
14. ASTM D1781 Standard Test of Climbing Drum Peel for Adhesives
15. ASTM C635 Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
16. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
17. ASTM E1556 - 08 Standard Specification for Epoxy Resin System for Composite Skin, Honeycomb Sandwich Panel Repair

B. Marble Institute of America:

1. MIA Dimensional Stone Manual

1.03 SYSTEM DESCRIPTION

A. Performance Requirements:

1. **StoneSheets®**
 - a. **6mm Solid Stone Face (Choose One: Granite, Marble, Travertine, Onyx, Quartzite, or Sandstone)
12mm Aluminum Honeycomb Matrix w/ Fiberglass Sheet Backing**
 - b. Flexural Strength of Reinforced Backing (ASTM C880):
 - 1) 3,974 PSI (27.4MPa)
 - c. Flatwise Compressive Strength (ASTM
 - 1) 3,974 PSI (27.4MPa)
 - d. Flatwise Tension Strength (ASTM C297):
 - 1) 87 PSI (.60 MPa)
 - e. Climbing Drum Peel Strength (ASTM D1781):
 - 1) 65.2 Nmm/mm
 - f. Shear Strength (ASTM C273):
 - 1) 74 PSI (.51 MPa)
 - g. Temperature Cycle Resistance -22 F – 158 F (-30 C - 70 C); 50 Cycles
 - 1) No Damage
 - h. Surface Burning Characteristics (ASTM E84):
 - 1) Flame Spread: 15
 - 2) Maximum Smoke Development: 15
 - 3) Maximum Fuel Contribution : 0
 - i. Large Missile Impact (Dade County PA 201-94):
 - 1) 65.2 Nmm/mm

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
 - B. Product Data: Submit manufacturer's product data and installation instructions.
 1. Recommended procedures for normal cleaning and removal of stains including precautions in use of cleaning materials that may be detrimental to surfaces.
 - C. Shop Drawings: Submit shop drawings for Architect's review and approval, prior to fabrication.
 1. Indicate layout of sheet sizes, including custom fabrication details which may be outside the standard scope of products.
 2. Indicate profiles, stone type, backing type, thickness of stone, thickness of backing, finishes, and textures.
 3. Indicate special alignment concerns, trim and other recommendations.
 4. Indicate any anchor placement or holes necessary for installation hardware.
3. Shop drawings must be signed or stamped on each page by the Architect or designated Person In Charge.

- C. Samples: Submit selection and verification samples: [6 inch x 6 inch (152 x 152 mm) sample for each wall panel unit required, showing full range of exposed texture to be expected in completed work].
- D. Quality Assurance/Control Submittals: Submit the following:
 - 1. Test Reports: Upon request, submit certified test reports from recognized test laboratories.
 - 2. Certificates: Submit manufacturer's certificate that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.
- B. Regulatory Requirements and Approvals: [Comply with requirements below.]
 - 1. Dade County Large Missile Impact Protocol:
 - a. PA 201-94
- C. Pre-installation Meetings: [Specify requirements for meeting.].

1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
 - 1. Prevent soiling, physical damage or wetting.
 - 2. Store cartons open at each end to stabilize moisture content and temperature.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- D. Unloading requires heavy equipment and Supervision of unloading to prevent damage from equipment during unloading.
- E. Material should be stored finished side to finished side to prevent damage from reinforced backings coming into contact with solid stone facings. Corners should be handled carefully when moving to prevent solid stone facing from being damaged.

1.07 PROJECT/SITE CONDITIONS

- A. Environmental Requirements:
 - 1. Do not install reinforced stone panels until building is closed in.
 - 2. Locate materials onsite at least 24 hours before beginning installation to allow materials to reach temperature and moisture content equilibrium.
 - 3. Maintain the following conditions in areas where acoustical materials are to be installed 24 hours before, during and after installation:
 - a. Relative Humidity: 65 - 75%.
 - b. Uniform Temperature: 55 - 70 degrees F (13 - 21 degrees C).

1.08 MAINTENANCE

- A. Extra Materials: Provide [A recommended percentage of] 5% additional material for use by owner in building maintenance and repair.
- B. Provide new unopened cartons of extra materials, packaged with protective covering for storage, identified with appropriate labels.

PART 2 PRODUCTS

2.01 REINFORCED SOLID STONE PANELS

- A. Manufacturer: StoneSheets, LLC.
 - 1. Contact: 1200 Hibiscus Ave PH-1; Telephone: (561) 843-1855, (561) 843-3353; Fax: (888) 868-8997; E-mail: info@StoneSheets.com; website: www.StoneSheets.com.
- B. StoneSheets® Proprietary Systems. Solid Stone Faced Wall Panels with Aluminum Honeycomb Reinforced Backings, including the following:
 - 1. **StoneSheets®**:

- a. Solid Stone Facing: 6mm Solid Slice of Stone (Specify Granite, Marble, Onyx, Travertine, Quartzite, or Sandstone)
- b. Finished: Polished (Specify One: Polished, Honed, Bush Hammered, Sandblasted, Antique, Grooved, Chiseled, or Flamed)
- c. Panel Material: 12mm Aluminum Honeycomb Matrix.
- d. Backing: Fiber-Epoxy Resin Sheets.
- e. Flamespread: Conforms to ASTM E84.
- f. Panel Thickness: [0.7087 inches (18 mm)] [Specify Custom Design].
- g. Panel Width: 48 inches (1220 mm). [Specify Custom length.].
- h. Panel Length: 96 inches (2440 mm) [Specify Custom length.].
- i. Tolerances: Panel Width \pm 1.0mm
 Panel Length \pm 2.0mm
 Thickness \pm 0.2mm
 Bow: max 1% of panel
 Squareness: max 5.0mm

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.03 ACCESSORIES

- A. Provide accessories as follows:

- 1. StoneSheets[®] Trim and Accessories:
 - a. Custom Profile Edges (Bevel, DuPont, Bullnose, Flat, Radius, etc.)
 - b. Soap Dishes, Towel Bars, Shelves, Countertop
 - c. 1-561-843-1855
 - d. www.StoneSheets.com
- 2. Panel –Lok :
 - a. Material: Stainless Steel.
 - b. Length: [1 5/8 inches (41 mm)] [2¼ inches (57 mm)] [3 inches (76 mm) Custom Available].
 - c. 1-800-561-3026
 - d. www.blok-lok.com
- 3. Akemi Adhesives, NA
 - a. Material: Epoxy Adhesive
 - b. 1-877-462-5364
 - c. www.akemina.com/contact.html

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the instructions and recommendations of the solid stone reinforced panel manufacturer.
- B. Install materials in accordance with governing regulations, fire resistance rating requirements and industry standards applicable to work.

3.02 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Examine surfaces scheduled to receive adhesive directly attached to stone face panel for unevenness, irregularities and dampness that would affect quality and execution of work.
 - 2. Do not proceed with installation of stone face panel system until unacceptable conditions are corrected.

3.03 INSTALLATION

- A. Screw head to be flush with panel surface, or panel is to be applied with Epoxy Adhesive to eliminate the use of any screws or mechanical anchors.
- B. Follow Manufacturers Instructions for Safety of Epoxy Application. Do not use epoxy without proper personal protection.
- C. Cover field cut or revealed edges by means of trim or other moldings.

3.04 CLEANING

- A. Clean exposed surfaces of stone faced panel, trim, moldings and suspension members to comply with manufacturer's instructions for cleaning.
- B. Touch up any minor finish damage.
- C. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

3.05 PROTECTION

- A. Protect installed work from damage due to subsequent construction activity, including temperature and humidity limitations and dust control, so that the work will be without damage and deterioration at the time of acceptance by the Owner.
- B. Protect stone faced surfaces from substances such as plumbers puddy, epoxy setting, and other materials, which can damage and stain the natural stone face.

END OF SECTION