

GUIDE SPECIFICATION

StoneLite[®] NATURAL STONE HONEYCOMB REINFORCED WALL CLADDING SYSTEM

Section 04 42 00 EXTERIOR STONE

This suggested guide specification has been developed using the current edition of the Construction Specifications Institute (CSI) "Manual of Practice," including the recommendations for the CSI 3 Part Section Format and the CSI Page Format. Additionally, the development concept and organizational arrangement of the American Institute of Architects (AIA) MASTERSPEC Program have been recognized in the preparation of this guide specification. Neither CSI nor AIA endorse specific manufacturers and products. The preparation of the guide specification assumes the use of standard contract documents and forms, including the "Conditions of the Contract," published by the AIA.

PART 1 – GENERAL

1.01 Summary

A. Section Includes: Natural Stone Honeycomb Reinforced Wall Cladding System(s) / Stone Panels International LLC / including installation anchors and accessories.

1. Stone Panels International LLC StoneLite[®] honeycomb reinforced natural stone wall cladding system(s)
 - a. Exterior Natural Stone Honeycomb Reinforced Wall Cladding System – 1" nominal total thickness dimension
 - b. Interior Natural Stone Honeycomb Reinforced Wall Cladding System – 5/8" nominal total thickness dimension

B. Related Sections:

1. Section 04 40 00 – Stone Assemblies
2. Section 05 40 00 – Cold Formed Metal Framing
3. Section 07 20 00 – Thermal Protection
4. Section 07 62 00 – Sheet Metal Flashing and Trim
5. Section 07 92 00 – Joint Sealant
6. Section 09 23 00 – Gypsum Plastering

1.02 References (Industry Standards)

- A. ASTM E 283 Test Method for Rate of Air Leakage
- B. ASTM E 331 Test Method for Water Penetration
- C. AAMA 501.1 Test Method for Dynamic Water Penetration
- D. ASTM E-84 Test Method for Measuring Flame Spread
- E. UFC 4-010-01 Unified Facilities Criteria (UFC) - DoD Minimum Antiterrorism Standard for Buildings

1.03 System Description

A. Panel System Performance Requirements:

1. U.S. Code Approval – Per International Code Council (ICC-ES) Report ESR – 1500
2. Accelerated Aging by Acid Freeze Thaw by Wiss, Janney, Elstner Assoc. Test Method: Flexural strength loss not to exceed 20% following 100 cycles + 170 (F) to -10(F) while immersed in 4-pH sulfuric acid solution.
3. Large Missile Impact in accordance with Dade County Protocol PA 201-94: Resists large missile impact when fired at 50 ft. per second.
4. Cyclic Wind Pressure Loading in accordance with Dade County Protocol PA 203-94: Resist 1342 repetitions of positive – negative 90 psf design wind pressure.
5. ASTM E-84 Flame Spread: 5 maximum smoke development: 5 maximum. Fuel contributed: 0.
6. Toxicity evaluation according to the University of Pittsburgh test method: No more toxic than Douglas fir wood.
7. ASTM D-2015 Potential heat of combustion: 1150 BTU/lb. Maximum.
8. UBC 17-6 Multi –Story fire evaluation: Meet acceptance criteria.
9. Modified ASTM E-108 Fire evaluation: Resist 30 minute fire exposure.
10. Flat wise tension bond capacity: 385 psi following accelerated aging by rapid temperature cycling from -40 degrees (F) to +160 degrees (F).
11. Flat wise tension bond tests following ASTM C-67, section 8 freeze – thaw: 290 psi flat wise tension bond following 100 cycles freeze thaw consisting of 20 hours freezing at 0 degrees (F) and 4 hours thawing in water at 75 degrees (F).
12. ASTM E-72 Transverse load test: Average 215 lbs. per sq. ft. uniform load on 35.5 inch simple span causing 0.49 inch deflection average.
13. Racking shear load tests: No disengagement or major damage following application of 4,000 lb. load and 0.05” to 1.5” deflection on an 8 ft x 8ft specimen.
14. Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283. Air infiltration rate shall not exceed 0.06 cfm/ft² at a static air pressure differential of 6.24 psf.
15. Water Resistance: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static air pressure differential of 10 psf as defined in AAMA 501.

1.04 Submittals

A. General: Prepare, review, approve, and submit specified submittals in accordance with “Conditions of the Contract” and Division 1. Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in “Conditions of the Contract.”

B. Quality Assurance/Control Submittals:

1. Test Reports: Submit independent laboratory certified test reports showing compliance with specified performance characteristics.
2. Building Authority Acceptance: Submit documentation confirming Building Code Authority Acceptance.

1.05 Warranty

A. Project Warranty: Refer to "Conditions of the Contract" for project warranty provisions.

B. Manufacturer's Product Warranty: Submit, for Owner's acceptance, manufacturer's warranty as follows:

1. Warranty Period: Ten (10) years from Date of Substantial Completion that the panel will be free from defects in lamination or separation of panel components.

1.06 Quality Assurance

A. Qualifications:

1. Manufacturer Qualifications: Manufacturer shall have a minimum of 10 years demonstrated capability to produce reinforced stone veneer panels of the quality and scope required. Manufacturer shall have completed independent laboratory tests verifying performance capabilities and shall be able to furnish a list of references and previous projects of similar size and scope. Manufacturer must have acceptance by the appropriate building code authority with established ongoing building authority quality control. Manufacturer shall be capable of providing detailed shop drawings, field service representation during construction, and approval of acceptable installers and approval of application method.
2. Installer Qualifications: Installer to demonstrate experience (as determined by contractor) to perform work of this section and who has specialized in the installation of work similar to that required for this project and is deemed acceptable to product manufacturer.

B. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

1.07 Delivery, Storage, and Handling

A. Ordering: Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

B. Packing, Shipping, Handling and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle material and components to avoid damage. Protect material against damage from elements, construction activities, and other hazards before, during and after installation.

PART 2 – PRODUCTS

2.01 Manufacturers (Acceptable Manufacturers/Products)

A. Acceptable Manufacturers: Stone Panels International LLC

1. Address: 2400 Hwy. 1431 W., Marble Falls, TX 78654
 - a. Telephone: 800-328 6275

2. Product

- a. **StoneLite**[®]

B. Alternate (Manufacturers/Products): In lieu of providing below specified base bid/contract manufacturer, provide below specified alternate manufacturers. Refer to Division 1 Alternates Section.

1. Base Bid/Contract Manufacturer/Product: Stone Panels International LLC

- a. Product: **StoneLite**[®]

C. Substitutions:

1. General: Refer to Division 1 Substitutions for procedures and submission requirements.

- a. Pre-Contract (Bidding Period) Substitutions: Submit written requests ten (10) days prior to bid date.
 - b. Post-Contract (Construction Period) Substitutions: Submit written request in order to avoid installation and construction delays.

2. Substitution Documentation:

- a. Product Literature and Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.
 - b. Certificates: Submit certificate(s) certifying substitute manufacturer (1) attesting to adherence to specification requirements for system performance criteria, and (2) has been engaged in the design, manufacture and fabrication of natural stone honeycomb reinforced wall cladding system for a period of not less than ten (10) years, and (3) able to provide a list of previous projects of similar size and scope with references. (Company Name and Contact Information) and (4) confirm acceptance by the controlling building code authority.
 - c. Test Reports: Submit independent laboratory test reports verifying compliance with each test requirement for Exterior Natural Stone Honeycomb Reinforced Wall Cladding System required by the project.
 - d. Product Sample and Finish: Submit product sample, representative of panel system for the project with specified stone type and finish.

3. Substitution Acceptance: Acceptance will be in written form, either as an addendum or modification and documented by a formal change order signed by the Owner and Contractor.

2.02 Materials

A. Natural Stone Honeycomb Reinforced Wall Cladding System:

1. Material Standard: Natural stone bonded to lightweight (aircraft quality) aluminum honeycomb having epoxy impregnated glass cloth skins.
2. Facing: 3/16" (4.8mm) +/- 1/16" (1.6 mm) natural stone.
3. Reinforcing: 3/4" (19mm) or 3/8" (10mm) aluminum honeycomb bonded by high strength epoxy impregnated reinforced glass cloth.

2.03 Accessories

A. Connection and anchorage hardware, including interlocking channels, anchor plates, Z-sections, angle clips and threaded inserts.

2.04 Related Materials

A. Sealants: Sealant materials specified in section 07 92 00 shall be tested for compatibility with the natural stone honeycomb reinforced wall cladding specified.

2.05 Fabrication

A. General:

1. Fabricate components on the structure intended to receive panels per manufacturer's installation instructions and with minimum clearances and shim spacing.

2.06 Stone Type and Finishes

EDITOR NOTE: SELECT NATURAL STONE FROM STONE PANELS INTERNATIONAL LLC SAMPLE SUBMITTAL(S) INCLUDING POLISHED, HONED, SANDBLASTED, FLAMED OR TOOLED FINISHES.

2.07 Source Quality Control

A. Source Quality: Provide Natural Stone Honeycomb Reinforced Wall Cladding System specified herein from a single source.

PART 3 – EXECUTION

3.01 Examination

A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions. Verify modules are sized to receive natural stone honeycomb reinforced wall cladding system in accordance with manufacturer's acceptable tolerances.

1. Field Measurements: Verify actual measurements/openings by field measurements before fabrication. Confirm recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

EDITORS NOTE: COORDINATE BELOW ARTICLE WITH MANUFACTURER'S RECOMMENDED DETAILS AND INSTALLATION INSTRUCTIONS.

3.02 Installation

A. General: Install lightweight honeycomb reinforced natural stone panel systems plumb, level and true to line, with manufacturer's prescribed tolerances and installation instructions. Provide supports and anchor in place.

1. Dissimilar Materials: Provide separation of aluminum materials from sources of corrosion or electrolytic action contact points.
2. Weather Tight Construction: Refer to installation instructions & consult sealant manufacture for project specific application. Coordinate installation with wall flashings and other components of construction.

B. Related Products Installation Requirements:

1. Sealants (Perimeter): Refer to Section 7 Joint Treatment (Sealants).

3.03 Protection and Cleaning

A. Protection: Protect installed product's finish surfaces from damage during construction. Protect stone facing from damage from harmful contaminants.

B. Cleaning: Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

DISCLAIMER STATEMENT

This guide specification is intended for use by a qualified construction Specifier. The guide specification is not intended to be verbatim as a project specification without appropriate modifications for the specific use intended. The guide specification must be used and coordinated with the procedures of each design firm, and the particular requirements of a specific construction project.

END OF SECTION 04 42 00