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SECTION 04 73 00

MANUFACTURED MASONRY VENEER

GENERAL NOTES TO SPECIFIER:

THIS SPECIFICATION SECTION HAS BEEN PREPARED TO ASSIST DESIGN PROFESSIONALS IN THE PREPARATION OF PROJECT OR OFFICE MASTER SPECIFICATIONS. IT FOLLOWS GUIDELINES ESTABLISHED BY THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI), AND THEREFORE MAY BE USED WITH MOST MASTER SPECIFICATION SYSTEMS WITH MINOR EDITING.

EDIT CAREFULLY TO SUIT PROJECT REQUIREMENTS. MODIFY AS NECESSARY AND DELETE ITEMS THAT ARE NOT APPLICABLE. VERIFY THAT REFERENCED SECTION NUMBERS AND TITLES ARE CORRECT. (NUMBERS AND TITLES REFERENCED ARE BASED ON *MASTERFORMAT*, 2004 EDITION).

THIS SECTION ASSUMES THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS INCLUDING SECTIONS 01 25 13-PRODUCT SUBSTITUTION PROCEDURES, 01 33 00-SUBMITTAL PROCEDURES, 01 62 00-PRODUCT OPTIONS, 01 66 00-PRODUCT STORAGE AND HANDLING REQUIREMENTS, 01 74 00-CLEANING AND WASTE MANAGEMENT, 01 77 00-CLOSEOUT PROCEDURES, AND 01 78 00-CLOSEOUT SUBMITTALS. CLOSE COORDINATION WITH DIVISION 1 SECTIONS IS REQUIRED. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION SHOULD BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

THIS IS A CLOSED PROPRIETARY SPECIFICATION.

NOTES TO THE SPECIFIER ARE CONTAINED IN BOXES AND SHOULD BE DELETED FROM FINAL COPY.

GREY HIGHLIGHTED GREEN TEXT AND NOTES RELATE TO LEED® PROJECTS AND CAN BE DELETED IF THE PROJECT IS NOT INTENDED TO ATTAIN LEED® CERTIFICATION. CREDIT REFERENCES REFER TO LEED® FOR NEW CONSTRUCTION, V2.2.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G. [35] [40] [45]. MAKE APPROPRIATE SELECTIONS AND DELETE OTHERS.

ITEMS REQUIRING ADDITIONAL INFORMATION ARE UNDERLINED BLANK SPACES, E.G. _____ .

OPTIONAL PARAGRAPHS REQUIRING SELECTION OF ONE OF THE OPTIONS ARE SEPARATED BY "OR" WITHIN A BOX, E.G.

OR

BOLD FACE TEXT IDENTIFIES OPTIONAL PARAGRAPHS AND FEATURES THAT MAY BE INCLUDED OR DELETED DEPENDING ON PROJECT REQUIREMENTS. CONVERT THE BOLD FACE TEXT TO REGULAR TEXT WHEN INCLUDING THESE PARAGRAPHS OR FEATURES. WHEN DELETING A PARAGRAPH, BE CERTAIN THAT ALL SUBPARAGRAPHS ARE ALSO DELETED.

REVISE FOOTER TO SUIT PROJECT/OFFICE REQUIREMENTS.

ELECTRONIC VERSIONS OF THIS SPECIFICATION UTILIZE AUTOMATIC PARAGRAPH NUMBERING.

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Portland cement based manufactured [stone] [and] [brick] veneer and trim.
- B. Related Sections:

INCLUDE ALL DIVISION 01 SECTIONS CONTAINING LEED® REQUIREMENTS.

- 1. _____-_____. Wall Framing.
- 2. _____-_____. Wall Sheathing.
- 3. 07 60 00–Flashing and Sheet Metal.
- 4. 07 92 00–Joint Sealants.
- 5. 09 24 00–Portland Cement Plastering.
- 6. 10 30 00–Fireplaces and Stoves.

INCLUDE APPROPRIATE LANGUAGE BELOW IF PRODUCTS SPECIFIED IN THIS SECTION ARE TO BE BID AS ALTERNATES. OTHERWISE DELETE FOLLOWING PARAGRAPH.

C. Alternates:

- 1. Reference Section 01 23 00–Alternates.

1.02 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.
 - 2. ANSI A118.15 Specifications for Improved Latex-Portland Cement Mortar
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 2. ASTM C67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
 - 3. ASTM C144 – Standard Specification for Aggregate for Masonry Mortar.
 - 4. ASTM C177 – Standard Test Method for Steady-State Head Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
 - 5. ASTM C207 – Standard Specification for Hydrated Lime for Masonry Purposes.
 - 6. ASTM C270 – Standard Specification for Mortar for Unit Masonry.
 - 7. ASTM C482 – Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement.
 - 8. ASTM C567 – Standard Test Method for Determining Density of Structural Lightweight Concrete.
 - 9. ASTM C847 – Standard Specification for Metal Lath.
 - 10. ASTM C 932 – Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering.
 - 11. ASTM C979 – Standard Specification for Pigments for Integrally Colored Concrete.
 - 12. ASTM C1032 – Standard Specification for Woven Wire Plaster Base.
 - 13. ASTM C1059 – Standard Specification for Latex Agents for Bonding Fresh To Hardened Concrete.

14. ASTM D226 – Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
15. ASTM C1063 –Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
16. ASTM C1329 Standard specification for Portland cement
17. ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
18. ASTM C1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
19. ASTM E2556/E2556M – Standard Specification for Vapor Permeable Flexible Sheet Water-Resistive Barriers Intended for Mechanical Attachment
20. ASTM C1670 Standard Specification for Adhered Manufactured Stone Masonry Veneer Units.
21. ASTM C1780 Standard Practice for Installation Methods for Adhered Manufactured Stone Masonry Veneer.

C. Other Standards:

1. UBC Standard No. 14-1, Kraft Waterproof Building Paper
2. ICC AC38 Acceptance Criteria for Water Resistive Barriers
3. UU-B-790 Building Paper, Vegetable Based, Kraft , waterproofed, water repellent and fireproof

D. International Code Council (ICC):

1. ESR Report.

E. **LEED®: US Green Building Council’s Leadership in Energy and Environmental Design Green Building Rating System™.**

F. Underwriter's Laboratory (UL): Building Materials Directory.

G. .

1.03 SUBMITTALS

A. Reference Section 01 33 00–Submittal Procedures; submit following items:

1. Product Data.
2. Samples:
 - a. Standard sample board consisting of small-scale pieces of veneer units showing full range of textures and colors.
 - b. Full range of mortar colors.
3. Verification Samples: Following initial sample selection submit “laid-up” sample board using the selected stone and mortar materials and showing the full range of colors expected in the finished Work; minimum sample size: 3 by 3 feet (1 by 1 m).
4. Quality Assurance/Control Submittals:
 - a. Qualifications:
 - 1) Proof of manufacturer qualifications.
 - 2) Proof of installer qualifications.
 - b. Regulatory Requirements: Evaluation reports.
 - c. Veneer manufacturer’s installation instructions.
 - d. Installation instructions for other materials.

5. **LEED® Submittals:**

- a. Credit MR 4.1, 4.2 Recycled Content: Provide percentage of recycled content (post-consumer and pre-consumer).
- b. Credit MR 5.1, 5.2 Regional Materials:
 - 1) Provide distance between Project site and extraction site.
 - 2) Provide distance between Project site and final manufacturing location.

MANUFACTURED MASONRY CAN ALSO CONTRIBUTE TO CREDIT EA 1 FOR OPTIMIZING ENERGY PERFORMANCE AND CREDITS ID 1.1-1.4 FOR INNOVATION IN DESIGN, HOWEVER, NO SPECIFIC SUBMITTALS ARE REQUIRED IN THIS SECTION.

- B. Closeout Submittals: Reference Section 01 78 00–Closeout Submittals; submit following items:
 - 1. Maintenance Instructions.
 - 2. Special Warranties.

1.04 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications: Stonecraft Industries .
 - 2. Installer Qualifications: Experienced mason familiar with installation procedures and related local, state and federal codes masonry.
- B. Certifications:
 - 1. **ICC Evaluation Service – Evaluation Report ESR-2826.**
 - 2.
 - 3.
 - 4. **LARR – Research Report RR25589**
 - 5.
 - 6. **UL – Classification listing in Building Materials Directory: UL F8022.**
- C. Field Sample:

COMPLETE FOLLOWING SUBPARAGRAPH TO INCLUDE DESIRED DETAILS SUCH AS CORNERS, TRIM, MORTAR JOINTS AND JOINT DETAILS ABUTTING OTHER MATERIALS.

- 1. Prepare [4 by 4 foot (1200 by 1200 mm)] [__ by __ foot (____ by ____ mm)] sample at a location on the structure as selected by the Architect. Use approved selection sample materials and colors. Include _____.
- 2. Obtain Architect’s approval.
- 3. Protect and retain sample as a basis for approval of completed manufactured stone work. Approved sample may be incorporated into completed work.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Reference Section 01 66 00–Product Storage and Handling Requirements.
- B. Follow manufacturer’s instructions.

1.06 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: When air temperature is 40 degrees F (4.5 degrees C) or below, consult local building code for Cold-Weather Construction requirements.

1.07 WARRANTY

- A. Special Warranty: Manufacturer’s standard warranty coverage against defects in materials when installed in accordance with manufacturer’s installation instructions.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Stonecraft Industries

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Tel: (800) 925-1491

Website: www.stonecraft.com

- B. Product: [_____ veneer] [Veneer types as shown on Drawings].
- C. Substitutions: None Allowed.

2.02 MATERIALS

- A. Stone Veneer:

SELECT DESIRED PROFILE FROM THE STONECRAFT WEBSITE [PRODUCTS](#) DROP DOWN MENU; CLICK ON "STONE VENEER" THEN CLICK ON THE APPROPRIATE REGION. INSERT PROFILE BELOW.

- 1. Profile: _____. Include matching corner pieces.

SELECT DESIRED STONE ACCENTS FROM THE STONECRAFT WEBSITE [PRODUCTS](#) DROP DOWN MENU; CLICK ON "STONE ACCENTS." INSERT DESIRED ACCENTS BELOW AND INSERT TEXTURE IF REQUIRED. VERIFY THAT DIMENSIONS, IF REQUIRED, ARE SHOWN ON THE DRAWINGS.

- 2. Stone Accents: _____.
 - a. Color: [As shown on Drawings].
 - b. Texture: _____.

- B. Veneer Unit properties: Precast veneer units consisting of portland cement, lightweight aggregates, and mineral oxide pigments.
 - 1. Compressive Strength: ASTM C 192 and ASTM C 39, 5 sample average: greater than 2,100psi (12.4MPa), no single test less than 1800 psi.
 - 2. Shear Bond: ASTM C 482: 50 psi (345kPa), minimum.
 - 3. Freeze-Thaw Test: ASTM C 67: Less than 3 percent weight loss and no disintegration.
 - 4. Thermal Resistance: ASTM C 177: 0.445 at 1.5inches thick
 - 5. Weight per square foot: ASTM C1670, less than 15 pounds, saturated.
 - 6. Linear Drying Shrinkage: Less than 0.10%, ASTM C1670,

EDIT MATERIALS PER BUILDING CODE REQUIREMENTS. DELETE FROM THIS SECTION IF SPECIFIED IN OTHER SECTIONS.

- C. Weather Barrier: [ASTM D 226, Type 1, No. 15, non-perforated asphalt-saturated felt paper] [UBC Standard 14-1, kraft waterproof building paper] or [UBC Standard No. 14-1, Kraft Waterproof Building Paper] or [ICC AC-38, synthetic house wrap]

- D. Reinforcing: [ASTM C 847, 2.5lb/yd² (1.4kg/m²) galvanized expanded metal lath] [ASTM C 847, 3.4lb (1.8 kg/m²) galvanized 3/8" rib lath] [ASTM C 1032, 17 gauge (1.3 mm) woven wire mesh] [ASTM C933 welded wire] complying with code agency requirements for the type of substrate over which stone veneer is installed.
- E. Mortar:
 - 1. Cement: Portland cement complying with ASTM C 1329.
 - 2. Lime: ASTM C 207.
 - 3. Sand: ASTM C 144, natural or manufactured sand.
 - 4. Color Pigment: ASTM C 979, mineral oxide pigments.
 - 5. Water: Potable.
 - 6. Pre-Packaged Latex-Portland Cement Mortar: ANSI A118.4 or ANSI A118.15.
- F. Water Repellent: Water based silane or siloxane masonry water repellent

2.03 MORTAR MIXES

- A. Standard Installation (Grouted Joints):
 - 1. Mix mortar in accordance with ASTM C 270, Type S.
 - 2. Polymer modified mortar complying with ANSI A118.4 or ANSI A118.15
 - a. Add color pigment in grout joint mortar in accordance with pigment manufacturer's instructions not to exceed 10% by weight of cement.

OR

- A. Jointless/Dry-Stacked Installation:
 - 1. Polymer modified mortar complying with ANSI A118.4 or ANSI A118.15
 - 2. Mortar prepared to comply with ASTM C270. Type S mortar.
 - a. Add color pigment in accordance with pigment manufacturer's instructions not to exceed 10% weight of cement.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates upon which work will be installed.
- B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.
- C. Commencement of work by installer is acceptance of substrate.

3.02 PREPARATION

- A. Protection: Protect adjacent work from contact with mortar.
- B. Surface Preparation: Prepare substrate in accordance with manufacturer's installation instructions for the type of substrate being covered.

3.03 INSTALLATION

- A. Install and clean stone in accordance with manufacturer's installation instructions for Standard Installation (Grouted Joint) or Jointless/Dry-Stacked installation as specified above.
- B. Apply water repellent in accordance with repellent manufacturer's application instructions.

3.04 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Manufacturer's Field Service Representative shall make [one] [two] [_____] periodic site visits review of on-going installation process but is not responsible for any errors or omissions that are not observed or are previously completed.

3.05 CLEANING

- A. Reference Section 01 74 00–Cleaning and Waste Management.
- B. Remove protective coverings from adjacent work.
- C. Cleaning Veneer Units:
 - 1. Wash with soft bristle brush and water/granulated detergent solution
 - 2. Rinse immediately with clean water
- D. Removing Efflorescence:
 - 1. Allow veneer to dry thoroughly
 - 2. Scrub with soft bristle brush and clean water
 - 3. Rinse immediately with clean water; allow to dry
 - 4. If efflorescence is still visible, contact Stonecraft Industries Customer Service for assistance

END OF SECTION¹

¹ This specification was prepared specifically for Stonecraft Industries. Comments or suggestions for improvement should be addressed to Stonecraft Industries via the contact information on page one.