

SECTION 04850

NATURAL THIN VENEER STONE

04850.1 – GENERAL:

A. SECTION INCLUDES:

1. Natural thin veneer stone for exterior and interior vertical surfaces.

B. RELATED SECTIONS:

1. Section 01230 – Alternates.
2. Section 03300 – Cast-In-Place Concrete.
3. Section 04090 – Masonry Accessories.
4. Section 04810 – Unit Masonry Assemblies.
5. Section 04860 – Stone Veneer Assemblies.
6. Section 05500 – Metal Fabrications.
7. Section 05810 – Waterproof Expansion Joint Sealing System.
8. Section 06105 – Rough Carpentry.
9. Section 06200 – Finish Carpentry.
10. Section 07250 – Weather Barrier.
11. Section 07460 – Siding.
12. Section 07620 – Sheet Metal Flashing & Trim.
13. Section 07720 – Roof Accessories.
14. Section 07920 – Joint Sealant.
15. Section 09111 – Non-Structural Metal Framing.
16. Division 16 – Electrical.

C. REFERENCES:

1. ACI 530.1/ASCE 6/TMS 602 – Specifications for Masonry Structures.
2. ANSI A118.4 – Specifications for Latex-Portland Cement Mortar.

3. ASTM C 144 – Standard Specification for Aggregate for Masonry Mortar.
4. ASTM C 207 – Standard Specification for Hydrated Lime for Masonry Purposes.
5. ASTM C 270 – Standard Specification for Mortar for Unit Masonry.
6. ASTM C 503 – Standard Specification for Marble Dimension Stone.
7. ASTM C 568 – Standard Specification for Limestone Dimension Stone.
8. ASTM C 615 – Standard Specification for Granite Dimension Stone.
9. ASTM C 616 – Standard Specification for Quartz Based Dimension Stone.
10. ASTM C 629 – Standard Specification for Slate Dimension Stone.
11. ASTM C 847 – Standard Specification for Metal Lath.
12. ASTM C 979 – Standard Specification for Pigments for Integrally Colored Concrete.
13. ASTM C 1063 – Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
14. PCA – Portland Cement Plaster (Stucco) Manual.

D. SUBMITTALS:

1. Comply with Section 01330 – Submittal Procedures.
2. Product Data: Submit manufacturer's product data on stone, mortar products, and sealant products, including:
 - a. Surface preparation and installation instructions.
 - b. Storage and handling instructions.
3. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating layout, dimensions, anchorages, and jointing methods.
4. Verification Samples: Submit 2 manufacturer's full-size samples of natural thin veneer stone for each pattern specified.
5. Warranty: Submit manufacturer's standard warranty for natural thin veneer stone.

E. QUALITY ASSURANCE:

1. Manufacturer's Qualifications: Manufacturer regularly engaged, for preceding 10 years, in manufacture of natural thin veneer stone of similar type to that specified.
2. Mock-Ups: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - a. Finish areas designated by Architect.

- b. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
- c. Refinish mock-up area as required to produce acceptable work.

F. DELIVERY, STORAGE, AND HANDLING:

1. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
2. Storage:
 - a. Store materials in accordance with manufacturer's instructions.
 - b. Store materials in manufacturer's unopened packaging until ready for installation.
 - c. Store stone materials on pallets on dry, level surface and cover with tarps.
 - d. Do not stack pallets.
 - e. Mortar: Store mortar under cover in area where air temperature is maintained between 40 degrees F and 110 degrees F (4 degrees C and 43 degrees C).
3. Handling: Protect materials during handling and installation to prevent damage or contamination.

G. PROJECT ENVIRONMENTAL REQUIREMENTS:

1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install natural thin veneer stone under environmental conditions outside manufacturer's limits.
2. Hot and Cold Weather Requirements: ACI 530.1/ASCE 6/TMS 602.
3. Air Temperature: 40 degrees F (4 degrees C) or above during installation of natural thin veneer stone.
4. Mortar Mixing Water: Heat mortar mixing water when air temperature falls below 50 degrees F (10 degrees C).

04850.2 – PRODUCTS:

A. MANUFACTURER:

1. Basis-of-Design: Natural Stone Veneers International, Inc.; P.O. Box 347, Fond du Lac, Wisconsin 54936; Toll Free: (877) 923-2800; Phone: (920) 923-2800; Fax: (920) 923-3800; Website: www.nsvi.com; E-mail: info@nsvi.com.
 - a. Manufacturer's Distributor: Daco Enterprises, Inc.; 3275 Florence Road, Powder Springs, GA 30127; Tel: 770-222-2425; Fax: 770-222-2445; Email: Maggie@dacoenterprises.com.
2. Section 01600 – Product Requirements; Product Selection Procedures; Substitutions: Permitted.

B. NATURAL THIN VENEER STONE:

1. Collection: "Mt. Ashlar".
 - a. Variety: 1/3 Blend.
 - 1) Height: 7 inches to 18 inches.
 - 2) Length: 7 inches to 18 inches.
 - 3) Nominal Thickness: 1 inch to 1-1/2 inches.
 - 4) Color: Buff/Tan/Gray.
 - 5) Material: Tennessee Fieldstone.
2. Collection: "Cedar Bluff".
 - a. Variety: 1/3 Blend.
 - 1) Height: 4 inches to 8 inches.
 - 2) Length: 4 inches to 12 inches.
 - 3) Nominal Thickness: 1 inch to 1-1/2 inches.
 - 4) Color: Buff/Tan/Gold/Cream.
 - 5) Material: Chopped Face Tennessee Fieldstone.
3. Collection: "Riverside Fieldstone".
 - a. Variety: 1/3 Blend.
 - 1) Height: 5 inches to 12 inches.
 - 2) Length: 5 inches to 18 inches.
 - 3) Nominal Thickness: 1 inch to 1-1/2 inches.
 - 4) Color: Buff/Tan/Gray.
 - 5) Material: Tennessee Fieldstone.

C. SPECIAL SHAPES:

1. Provide special shapes as indicated on the Drawings and as follows:
 - a. Trimstones.
 - b. Hearthstones.
 - c. Rockface sills.
 - d. Light fixture stones.
 - e. Receptacle stones.
2. Color: To be selected by Architect from manufacturer's full range of color selections.

D. ACCESSORIES:

1. Expanded Metal Lath: ASTM C 847; galvanized, self-furring.
2. Lath Anchorage: Tie wire, nails, screws, and other metal supports; galvanized; type and size to suit application and to rigidly secure materials in place.
3. Weather Barrier: As specified in Section 07250.
4. Concrete Bonding Agent: Latex type.
5. Setting Buttons and Shims: Lead or plastic.
6. Joint Sealants and Joint Fillers: As specified in Section 07920.

E. MORTAR:

1. Mortar:
 - a. Cement: ASTM C 270.
 - b. Lime: ASTM C 207.
 - c. Sand: ASTM C 144, natural or manufactured.
 - d. Color Pigments: ASTM C 979, mineral oxide.
 - e. Water: Potable.
 - f. Pre-Packaged Latex-Portland Cement Mortar: ANSI A118.4.
2. Bonding Agent: Acrylic additive.
3. Sealer: Water-based silane or siloxane masonry sealer, semi-gloss.
4. Mortar Mixes:
 - a. Grouted Joints:
 - 1) Mix Mortar: ASTM C 270, Type S.
 - 2) Add color pigments to mortar in accordance with pigment manufacturer's instructions.

04850.3 – EXECUTION:

A. EXAMINATION:

1. Examine surfaces to receive natural thin veneer stone.
2. Notify Architect of conditions that would adversely affect installation.
3. Do not begin surface preparation or installation until unacceptable conditions are corrected.
4. Do not begin installation until backing structure is plumb, bearing surfaces are level, and substrates are clean and properly prepared.
5. Verify location and secure installation if shelf angles are required.

B. SURFACE PREPARATION:

1. Prepare surfaces in accordance with manufacturer's instructions.
2. Clean surfaces thoroughly before installation.
3. Prepare surfaces using methods for achieving best results for substrate under project conditions.
4. Prepare for Installation Over Plywood Sheathing:
 - a. Weather Barrier: As specified in Section 07250.
 - b. Metal Lath:
 - 1) Install metal lath in accordance with ASTM C 1063.

- 2) Apply metal lath with long dimension perpendicular to supports and with joints lapped a minimum of 1 inch (25 mm).
 - 3) Secure laps with tie wire where they occur between supports.
 - c. Fastening Metal Lath:
 - 1) Fasten lath to wood supports using galvanized nails at maximum 6 inches (152 mm) on center vertically and 16 inches (406 mm) on center horizontally.
 - 2) Fasten with a minimum of 1-inch (25-mm) penetration of metal studs.
 - 3) Stop lath 1 inch (25 mm) from finished edges.
5. Prepare for Installation Over Formed Concrete Surface:
 - a. Metal Lath:
 - 1) Install metal lath in accordance with ASTM C 1063.
 - 2) Apply metal lath with long dimension perpendicular to supports and with joints lapped a minimum of 1 inch (25 mm).
 - 3) Secure laps with tie wire where they occur between supports.
 - b. Fastening Metal Lath:
 - 1) Attach lath to concrete using galvanized concrete nails at maximum 6 inches (152 mm) on center vertically and 16 inches (406 mm) on center horizontally.
 - 2) Stop lath 1 inch (25 mm) from finished edges.
6. Prepare for Installation Over Concrete Masonry Units: Adhere stone directly to concrete masonry units with mortar.
7. Application of Base Coat Stucco:
 - a. Apply scratch coat in accordance with PCA Plaster (Stucco) Manual.
 - b. Apply scratch coat to nominal thickness of 1/2 inch to 3/4 inch (13 mm to 19 mm) over metal lath surfaces.
 - c. If weather is hot or surface is dry, dampen previous coat before applying mortar and thin stone veneer.
 - d. If scratch coat is done in advance, use notch trowel to create texture for better bond. Smooth surface is not acceptable for bond.
8. Prepare for Installation of Thin Veneer Stone:
 - a. Coordination: Coordinate placement of reinforcement, anchors, accessories, flashings, weep holes, and other moisture-control products specified in other sections.
 - b. Cleaning: Clean built-in items of loose rust, ice, mud, and other foreign matter before incorporating into wall.
 - c. Prime or galvanize ferrous metal built into wall.
 - d. Temporary Bracing:
 - 1) Provide temporary bracing as required during installation of masonry.
 - 2) Maintain bracing in place until building structure provides permanent support.

C. INSTALLATION:

1. Install thin veneer stone and mortar in accordance with manufacturer's instructions and ACI 530.1/ASCE 6/TMS 602.

2. Maintain masonry courses to uniform dimensions. Form vertical and horizontal joints of uniform thickness.
3. Pattern Bond:
 - a. Lay out work in advance and distribute color range of stone uniformly over total work area.
 - b. Lay stone with face exposed.
 - c. Take care to avoid concentration of any 1 color to any 1 wall surface.
 - d. Maintain approximate 1/2-inch (13-mm) joint, as stone allows.
 - e. Do not use stacked vertical joints.
4. Placing and Bonding:
 - a. Dampen substrate as required to reduce excessive suction.
 - b. Apply mortar in accordance with PCA Plaster (Stucco) Manual to thickness of 1/2 inch to 3/4 inch (13 mm to 19 mm).
 - c. Do not spread more than workable area of 5 to 10 square feet, so mortar will not set before stone is applied.
 - d. Lay thin veneer stone in full bed of mortar with full head joints.
 - e. Work from bottom up, laying corner pieces first.
 - f. Remove excessive mortar as work progresses.
 - g. Do not shift or tap veneer stone after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
 - h. Isolate top of veneer stone from horizontal structural framing members and slabs or decks with compressible joint filler and sealant as specified in Section 07920.
5. Joining Work: Where fresh masonry joins partially set masonry.
 - a. Remove loose stone and mortar.
 - b. Clean and lightly wet surface of set masonry.
 - c. To avoid horizontal run of masonry, rack back 1/2 the length of stone in each course.
 - d. Tothing is not permitted.
6. Joints:
 - a. Lay stone with approximate 1/2-inch (13-mm) mortar joint, as stone allows.
 - b. Tool joints when "thumb-print" hard with round jointer, slightly larger than width of joint.
 - c. Trowel point or concave tool exterior joints below grade.
 - d. Flush cut joints to be finished with soft brush only.
 - e. Retempering of mortar is not permitted.
 - f. Use non-corrosive stone shims as required to maintain uniform joint thickness.
7. Control and Expansion Joints:
 - a. Keep joints open and free of debris.
 - b. Coordinate control joints as specified in Section 07920 for sealant performance.
8. Sealant Recesses:
 - a. Provide open joints 3/4 inch (19 mm) deep and 1/4 inch (6 mm) wide, where masonry meets doors, windows, and other exterior openings.
 - b. Coordinate sealant joints as specified in Section 07920 for sealant performance.
9. Cutting and Fitting:

- a. Cut and fit thin veneer stone for chases, pipes, conduit, sleeves, grounds, and other penetrations and adjacent materials.
- b. Coordinate with other work to provide correct size, shape, and location.

10. During progress of the work, cover top of unfinished stone masonry work for protection from weather.

D. CLEANING:

1. Keep face of stone free of mortar as work progresses.
2. If residual mortar is on face of stone, allow to dry partially and brush mortar off surface and sponge off residue.
3. When work is completed and mortar has set for 2 to 3 days, clean surface from top to bottom using mild masonry detergent acceptable to natural thin veneer stone manufacturer.
4. Do not use harsh cleaning materials or methods that could damage stone.
5. Do not use metal brushes or acids for cleaning.

E. PROTECTION:

1. Protect installed natural thin veneer stone to ensure that, except for normal weathering, stone will be without damage or deterioration at time of Substantial Completion.
2. Touch-up, repair, or replace damaged stone before Substantial Completion.

END OF SECTION 04850