Cooper Stone Corporation

Natural Thin Veneer Stone

Architectural Specification — CSI Section 04852

This specification establishes the requirements for thin-cut natural stone veneer supplied by Cooper Stone Corporation, including dimensional ashlar, random ashlar, flagstone, and ledgestone patterns, and the installation methods for plywood sheathing, concrete masonry, and metal building substrates.

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PART 1 — GENERAL

Section Includes

Thin-cut veneer masonry construction of natural stone set in cement mortar over a structural wall backing of:

- Plywood sheathing.
- Concrete masonry.
- Metal building.

Special decorative veneer cut stone shapes for trim.

Installation of built-in accessories.

Related Sections

- Section 03300 — Cast-In-Place Concrete: Concrete foundations.
- Section 04810 — Unit Masonry Assemblies: Masonry supporting wall.
- Section 05500 — Metal Fabrications: Shelf angles, structural supports, anchors and other built-in components.
- Section 05400 — Cold-Formed Metal Framing: Formed steel framed supporting wall.
- Section 06112 — Framing and Sheathing: Wood-frame supporting wall.
- Section 07620 — Sheet Metal Flashing and Trim.
- Section 07650 — Flexible Flashing.
- Section 07900 — Joint Sealers: Sealant for perimeter and control joints.
- Section 09220 — Cement Plaster: Metal lath and scratch coat back-up over supporting walls.
- Section 13121 — Pre-Engineered Metal Buildings.

References

- ASTM C 91 — Standard Specification for Masonry Cement.
- ASTM C 97 — Standard Specification for Absorption and Bulk Specific Gravity of Dimension Stone.
- ASTM C 144 — Aggregate for Masonry Mortar.
- ASTM C 150 — Standard Specification for Portland Cement.
- ASTM C 170 — Standard Specification for Compressive Strength of Dimension Stone.
- ASTM C 207 — Standard Specification for Hydrated Lime for Masonry Purposes.
- ASTM C 270 — Mortar for Unit Masonry.
- ASTM C 568 — Standard Specification for Limestone Dimension Stone.
- ASTM C 616 — Standard Specification for Quartz-Based Dimension Stone.
- ASTM C 780 — Preconstruction Evaluation of Mortar for Plain & Reinforced Masonry.
- ASTM C 847 — Standard Specification for Metal Lath.
- ASTM C 880 — Standard Specification for Flexural Strength of Dimension Stone.
- ASTM C 1063 — Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
- ASTM D 226 — Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- ACI 530 / ASCE 5 / TMS 402 — Building Code Requirements for Masonry Structures.
- ACI 530.1 / ASCE 6 / TMS 602 — Specifications for Masonry Structures.
- PCA — Portland Cement Plaster (Stucco) Manual.

Submittals

Submit under provisions of Section 01300.

- **Quarrier or natural stone data sheets** on stone and mortar mix to be used, including preparation instructions, storage and handling, installation methods, and cleaning methods.
- **Design Data:** Submit design mix when Property specification of ASTM C270 is to be used, with required environmental conditions and admixture limitations.
- **Selection Samples:** For each stone product specified, submit two samples, minimum size 6 inches square, representing actual product, color, and texture.
- **Samples:** Submit samples of mortar representing actual mortar color and color range.
- **Mock-Up:** Provide a 4 × 4 ft mock-up for evaluation of surface preparation techniques and application workmanship. Include all stone unit types and sizes to be used including a typical corner condition, special shapes, and mortar joint treatment. Clean using the same materials and tools planned for the final work. Do not proceed with remaining work until workmanship and color are approved by the Architect. Do not remove the sample panel until construction activities of this section have been accepted.

Qualifications

- **Stone Source:** Cooper Stone Corporation specializes in quarrying and processing the products specified in this section, with minimum five years documented experience.
- **Stone Masonry Company:** Company specializing in performing the work of this section, with minimum five years documented experience.

Quality Assurance

- **Preconstruction Meetings:** Conduct meetings including the Architect, Contractor, stone-masonry subcontractor, and flashing subcontractor to verify project requirements, substrate conditions, manufacturer's installation instructions, and other requirements. Comply with Division 1 requirements.
- **Mock-Up:** Provide a mock-up for evaluation of surface preparation techniques and application workmanship in areas designated by the Architect. Do not proceed with remaining work until workmanship, color, and texture are approved. Refinish mock-up areas as required to produce acceptable work.

Delivery, Storage, and Handling

- Store products on pallets, under cover, and in manufacturer's unopened packaging until ready for installation.
- Store stone materials on pallets on a dry level surface. Pallets shall not be stacked and shall be covered with tarps.
- Store mortar under cover and in an area where temperature is maintained between 40 °F and 110 °F.

Project Conditions

- Maintain environmental conditions (temperature, humidity, ventilation) within limits recommended by the manufacturer. Do not install products outside the manufacturer's absolute limits.
- **Hot- and cold-weather requirements:** In accordance with ACI 530.1 / ASCE 6 / TMS 602 — Specifications for Masonry Structures.
- Ambient temperature shall be 40 °F or above during erection of stone masonry. When ambient temperature falls below 50 °F, mortar mixing water shall be heated.

PART 2 — PRODUCTS

Manufacturer

Cooper Stone Corporation
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Substitutions are not permitted. Requests for substitutions will be considered in accordance with provisions of Section 01600.

Thin Veneer Stone — Limestone / Sandstone

Style 1: Dimensional Ashlar — Sawn Top & Bottom, Split Face

Antique
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Grey, light to dark brown, buff

Austin White
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: White to off-white

Caramel
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark brown

Cordova Cream
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Cream

Sierra
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Cream, mustard, light to dark gold

Texas Mix
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Cream, mustard, grey, brown

Castle Grey
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark grey

Rusted Earth
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Cream, mustard, rust, light to dark gold

Goldstone
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Mustard, light to dark gold, cream

Georgia Blend
Heights: 4″–6″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark grey, brown, cream

Style 2: Random Ashlar — Chopped All Sides

Mocha
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark brown, dark reds, dark tan

Oklahoma
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Dark tan, dark grey, red, gold

Santa Cruz
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Cream, mustard, rust, light to dark gold

Montana Chop
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Grey, light to dark brown, buff

Aztec Squares
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark rust, mustard, light grey, off-white

Yukon Chop
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark brown and buff

Autumn Blend
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark tans and browns

Tucson Mix
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark gold, mustard, grey, brown, cream

Texas Tan
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light tan, light brown

Wichita White
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: White to off-white

Ozark Chop
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark grey

Santa Maria
Heights: 3″–8″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark grey, brown, cream

Style 3: Flagstone — Random Shape, Split Face

Coffee Flagstone
Heights: 3″–10″ · Lengths: 6″–12″ · Nominal Thickness: 1″–1.5″
Color: Light to dark brown, dark reds, dark tan

Dakota Flagstone
Heights: 3″–10″ · Lengths: 6″–12″ · Nominal Thickness: 1″–1.5″
Color: Light to dark rust, mustard, light grey, off-white

Tulsa Flagstone
Heights: 3″–10″ · Lengths: 6″–12″ · Nominal Thickness: 1″–1.5″
Color: Tan, gold, rust, butterscotch

Delaware Flagstone
Heights: 3″–10″ · Lengths: 6″–12″ · Nominal Thickness: 1″–1.5″
Color: Tan, brown with red tones

Alaska Flagstone
Heights: 3″–10″ · Lengths: 6″–12″ · Nominal Thickness: 1″–1.5″
Color: White to off-white

Sonoma Flagstone
Heights: 3″–10″ · Lengths: 6″–12″ · Nominal Thickness: 1″–1.5″
Color: Light to dark tan

Dover Flagstone
Heights: 3″–10″ · Lengths: 6″–12″ · Nominal Thickness: 1″–1.5″
Color: Dark tan, dark grey, red tones, gold

Bedford Flagstone
Heights: 3″–10″ · Lengths: 6″–12″ · Nominal Thickness: 1″–1.5″
Color: Red tones and tan

Style 4: Ledgestone

Mountain Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Grey, light to dark brown, buff

Chestnut Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark tan

Kaffee Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark brown, dark reds, dark tan

Seminole Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark gold, mustard, rust, cream

Brazos Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Cream and off-white

Smokey Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark grey

Desert Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Cream, mustard, light to dark gold

Cimarron Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark gold, mustard, grey, brown, cream

Navajo Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Light to dark brown

Alpine Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: White to off-white

Java Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Tan, brown, red tones

Carolina Ledgestone
Heights: 1″–4″ · Lengths: 10″–18″ · Nominal Thickness: 1″–1.5″
Color: Dark tan, dark grey, red, gold

Special Shapes

Provide special shapes as indicated on the drawings and as follows:

- Quoins.
- Sills.
- Transition pieces.

- Surrounds.
- Pier caps.
- Wall caps.

Available colors: cream, grey, caramel.

Accessories

- **Expanded metal lath, paper-backed:** ASTM C847; galvanized, self-furring mesh of weight to suit application; backed with paper.
- **Expanded metal lath:** ASTM C847, galvanized, self-furring.
- **Lath anchorage:** Tie wire, nails, screws, and other metal supports — galvanized, of type and size to suit application and rigidly secure materials in place.
- **Building paper:** ASTM D226, No. 30 asphalt-saturated felt or approved moisture barrier.
- **Concrete bonding agent:** Latex type.
- **Setting buttons and shims:** Lead or plastic.

Mortar

- **Masonry cement** complying with ASTM C91, Type S. Color: grey is recommended; white or brown is optional.
- **Portland cement** complying with ASTM C150, Type I. Color: grey is recommended; white or brown is optional.
- **Mortar aggregate** complying with ASTM C144, standard masonry type.
- **Hydrated lime** complying with ASTM C207, Type S or Type SA.
- **Water:** clean and potable.

Mortar Mixes

- **Mortar for structural masonry:** Complying with ASTM C270, using Proportion Specification, Type S.
- **Mortar mixing:** Mix mortar ingredients in accordance with ASTM C270. Mix only in quantities needed for immediate use.
- Do not use anti-freeze compounds to lower freezing point of mortar.

PART 3 — EXECUTION

Examination

- Do not begin installation until the backing structure is plumb, bearing surfaces are level, and substrates are clean and properly prepared.
- Verify that built-in items are in proper location and ready for roughing into stone masonry.
- Notify the Architect of unsatisfactory preparation before proceeding.

Preparation for Installation over Plywood Sheathing

- Cover sheathing with moisture-proof barrier with all joints lapped shingle-style a minimum of 4 inches.
- Install metal lath in accordance with ASTM C1063. Apply taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (4″ recommended). Secure end laps with tie wire where they occur between supports.
- Attach metal lath to wood supports using galvanized nails at maximum 6 inches on center vertically and 16 inches on center horizontally. Fasten with a minimum of 1-inch penetration of the wood studs. Stop lath no more than 1 inch from finished edges.
- Continuously reinforce internal angles with corner mesh.
- Place lath vertically above each top corner and each side of door and glazed frames.

Preparation for Installation over Concrete or Concrete Masonry

- Clean or sandblast concrete masonry to assure a proper mortar bond. Verify no bituminous, water-repellent, or form-release agents exist on the concrete surface that are detrimental to mortar bond.
- Apply bonding agent in accordance with the manufacturer's printed instructions.

Preparation for Installation over Metal Siding

- Install paper-backed metal lath in accordance with ASTM C1063. Apply taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (4″ recommended). Secure end laps with tie wire where they occur between supports.
- Attach metal lath to metal-siding support members using galvanized 1¼″ Type S-12 Pan-Head Super-Tight Screws as manufactured by United States Gypsum. Screws shall penetrate a minimum of 3/8″ (0.9525 cm) into the metal-siding support members. Provide 1 fastener per ft² of surface area and do not exceed 6 inches on center in any one direction.
- Place minimum 4″-wide strips of metal lath centered over junctions of dissimilar backing materials. Secure rigidly in place.
- Place lath vertically above each top corner and each side of door and glazed frames.
- Apply scratch coat in accordance with PCA Plaster (Stucco) Manual to a nominal thickness of 1/2 to 3/4 inch over metal lath surfaces. Moist-cure scratch coat for a minimum of 48 hours.
- After curing, dampen previous coat prior to applying mortar and thin stone veneer.

Preparation for Installation of Thin Veneer Stone

- Stone back should be moistened with water prior to installation.
- Coordinate placement of reinforcement, anchors and accessories, flashings, weep holes, and other moisture-control products supplied by other sections.
- Clean all built-in items of loose rust, ice, mud, or other foreign matter before incorporating into the wall. All ferrous metal built into the wall shall be primed or galvanized.
- If required, provide temporary bracing during installation of masonry work. Maintain bracing in place until the building structure provides permanent support.

Installation of Thin Veneer Stone

Install thin veneer stone and mortar in accordance with ACI 530.1 / ASCE 6 / TMS 602 — Specifications for Masonry Structures. Maintain masonry courses to uniform dimension(s). Form vertical and horizontal joints of uniform thickness.

Pattern:

- Lay stone with the split-face, honed-face, or weather-edge exposed, as described in the stone veneer section above. Avoid a concentration of any one color on any one wall surface.
- Maintain an approximate 3/8″ joint, as stone allows.
- Do not use stacked vertical joints.
- Lay out work in advance and distribute color range of stone uniformly over total work area.

Placing and Bonding:

- Dampen substrate as required to reduce excessive suction.
- Apply mortar in accordance with PCA Plaster (Stucco) Manual to a thickness of 1/2 to 3/4 inch. Do not spread more than a workable area of 5 to 10 ft² so that mortar will not set before the stone is applied.
- Lay thin veneer stone in a full bed of mortar with full head joints.
- Work from the bottom up, laying corner pieces first.
- Remove excessive mortar as work progresses.
- Do not shift or tap veneer stone after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
- Isolate top of veneer stone from horizontal structural framing members and slabs or decks with compressible joint filler and sealant in accordance with Section 07900.

Joining Work — Where fresh masonry joins partially set masonry:

- Remove loose stone and mortar.
- Clean and lightly wet surface of set masonry.
- To avoid a horizontal run of masonry, rack back 1/2 the length of stone in each course.

Joints:

- Lay stone with an approximate 3/8″ mortar joint, as stone allows.
- Tool joints when "thumb-print" hard with a round jointer slightly larger than the width of the joint.
- Trowel-point or concave-tool exterior joints below grade.
- Flush cut joints to be finished with a soft brush only.
- Retempering of mortar is not permitted.

Flashing:

- Clean surface of masonry smooth and remove any projections which could damage flashings.
- Place flashing on a bed of mortar.
- Cover flashing with mortar.

Control and Expansion Joints:

Keep joints open and free of debris. Coordinate control joints in accordance with Section 07900 for sealant performance.

Sealant Recesses:

Provide open joint 3/4″ deep and 1/4″ wide where masonry meets doors, windows, and other exterior openings. Coordinate sealant joints in accordance with Section 07900.

Cutting and Fitting:

Cut and fit for chases, pipes, conduit, sleeves, grounds, and other penetrations and adjacent materials. Coordinate with other sections of work to provide correct size, shape, and location.

Field Quality Control

- Test mortar and grout in accordance with Section 01110.
- Testing of mortar mix: in accordance with ASTM C780, Annex A4 (mortar aggregate ratio), and ASTM C780, Annex A5 (mortar water content).

Protection

- Protect installed products until completion of project.
- Cover the top of unfinished stone masonry work to protect it from the weather.
- Touch-up, repair, or replace damaged products before Substantial Completion.

Cleaning

- Keep the face of stone free of mortar as the work progresses. If residual mortar is on the face of the stone, allow to dry partially and brush the mortar off the surface; sponge off the residue.
- When the work is completed and the mortar has set for 2 to 3 days, the surface may be cleaned from top to bottom using a mild masonry detergent acceptable to the stone manufacturer. Do not use metal brushes or acids for cleaning.

— END OF SECTION 04852 —