SECTION 04 70 10

APPLIED LIMESTONE VENEER

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\*\* NOTE TO SPECIFIER \*\* PROCAL Stone Design; Sprayed and troweled limestone veneer.
This section is based on the products of PROCAL Stone Design, which is located at:
4253 Kellway Circle
Addison, TX 75001
Tel: (972) 733-1314
Email: Sales@procalstone.com
Web: http://www.procalstone.com
click Herefor additional information
PROCAL Stone Design is a company specializing in the art of sprayed and troweled limestone that can be applied almost anywhere vertically to include both interiors and exteriors. We are the inventor, producer, and installer of our proprietary and revolutionary product.
Our company's origin begins roughly 17 years ago in France, with our products creator and companies founder. Through hard work, strong ethics, an honest and dedicated team, and this amazing product "Procal Stone Design" is growing around the world. Our unique "Old World" heritage gives us an artisan and customer driven approach, which is difficult to find in our current day and age.
The desire and demand for stone is everywhere and growing. "Procal Stone Design" uses old world craftsmanship with a twist of new world technology to make natural limestone more easily available and economical to the general public. No longer are you forced to keep the outdated appearance of your home, businesses, or fireplaces. In days, not weeks "Procal Stone design" can transform the old or ordinary to the beautiful and elegant!

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Applied limestone veneer.
		2. Metal lath and accessories.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
		2. Section 03 47 13 - Tilt-Up Concrete.
		3. Section 04 20 00 - Unit Masonry.
		4. Section 05 40 00 - Cold-Formed Metal Framing.
		5. Section 06 10 00 - Rough Carpentry.
		6. Section 06 16 36 - Wood Panel Product Sheathing.
		7. Section 07 27 00 - Air and Moisture Barriers.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
			1. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
			2. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
			3. ASTM C 1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: For each type of product indicated. Include manufacturer's written installation instructions.
		3. Shop Drawings: Show locations and installation of control and expansion joints elevations, sections, details of components, and attachments to other work.
		4. Certificates: Provide manufacturer's "certified applicator" certificate.

\*\* NOTE TO SPECIFIER \*\* Delete if project is not seeking USGBC LEED certification.

* + 1. LEED Submittals:
			1. Credit MR 5.1 and 5.2: Identify each regional material along with the location of its harvest, extraction, or manufacture. Include material cost for each item.
			2. Credit EQ 4.2: Provide printed statement of VOC content confirming compliance with maximum allowable content.
	1. QUALITY ASSURANCE
		1. Certified Applicator: Applicators shall be trained and certified by manufacturer.

\*\* NOTE TO SPECIFIER \*\* Delete if mock-up not required.

* + 1. Mockups: Prior to installing work, construct panels for each type of finish and application required to verify selections made and to demonstrate aesthetic effects as well as qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for final unit of Work.
			1. Locate mockups on-site in the location and of the size indicated or, if not indicated, as directed by Architect.
			2. Erect on-site mockups minimum 48 inch (1200 mm) by 48 inch (1200 mm) by full thickness using materials, including lath, support system, and control joints, indicated for final Work. Step work back to clearly show each application. Construct mock-up separate from work intended to remain.
			3. Notify Architect 3 days in advance of the dates and times when mockups will be constructed.
			4. Demonstrate the proposed range of aesthetic effects and workmanship, including sills, heads, copings, quoins, moldings, and outside corners.
			5. Obtain Architect's approval of mockups before starting Work.
			6. Retain and maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
		2. Pre-installation Conference: Conduct conference at Project site.
		3. Verify that supporting substrate is sufficiently rigid to resist defection of L/360 under code required loads. Verify that surface preparation is properly completed.
	1. PRE-INSTALLATION MEETINGS
		1. Convene minimum two weeks prior to starting work of this section.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Deliver materials to Project site in original packages, containers, or bundles, labeled with manufacturer's name, product brand name, and lot number.
		2. Store materials inside, under cover, and dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes
	3. PROJECT CONDITIONS
		1. Cold-Weather Requirements: Provide heat and protection, temporary or permanent, as required to protect work from freezing for at least 24 hours after application. Distribute heat uniformly to prevent concentration of heat on limestone near heat sources; provide deflection or protective screens.
		2. Warm-Weather Requirements: Protect work against uneven and excessive evaporation and from strong flows of dry air, both natural and artificial. Apply and cure work as required by climatic and job conditions to prevent dry out during cure period. Provide suitable coverings, moist curing, barriers to deflect sunlight and wind, or combinations of these, as required.
		3. Exterior Work:
			1. Apply and cure work to prevent drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
			2. Apply limestone when ambient temperature is greater than 40 deg F (4.4 deg C).
			3. Protect limestone coats from freezing for not less than 48 hours after set of limestone surface has occurred.
		4. Factory-Prepared Finishes: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.
		5. Protect contiguous work from soiling and moisture deterioration caused by work of this section. Provide temporary covering and other provisions necessary to minimize harmful spattering of work onto other work.
	4. WARRANTY
		1. Warrant products to be free from defects in materials and fabrication for the life of the structure, from date of Substantial Completion.
		2. Warrant workmanship for a period of one year from date of substantial completion, to be free from defects, including:
			1. Cracking (not related to curing or structural movement).
			2. Adhesion to substrate.
			3. Surface deterioration (not related to adverse weather conditions, abuse, or damage caused by others).
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: PROCAL Stone Design, which is located at: 4253 Kellway Circle; Addison, TX 75001; Tel: 972-733-1314; Email: [request info (admin@procalstone.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=PROCAL+Stone+Design&coid=50026&rep=&fax=&message=RE:%20Spec%20Question%20(04740pro):%20%20&mf=); Web: [www.procalstone.com](http://www.procalstone.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. LIMESTONE MATERlALS AND ACCESSORlES
		1. Bonding Mortar: Thin-set bonding mortar by Versabond or equal.
		2. Limestone Veneer: Procal Stone Design LLC, and having the following attributes:
			1. Primary Composition: Calcium carbonate.
			2. Cured Density: 6 lb/sf. (2.7 Kg), applied at 1 inch (25 mm) thickness).
		3. Colorant: Mineral oxide composition, of colors necessary to create desired effect. Colorant may be batched into mix to create an overall change in veneer and/or spray applied in field to face of stone for variegated effect.

\*\* NOTE TO SPECIFIER \*\* Delete below if no lathing or accessories are required.

* 1. METAL LATH
		1. Expanded-Metal Lath: Comply with ASTM C 847 for material, type, configuration, and other characteristics indicated below.
			1. Material: Fabricate expanded-metal lath from structural-quality, zinc-coated (galvanized) steel sheet complying with ASTM A 653, G60 (ASTM A653M, Z180) minimum coating designation, unless otherwise indicated.
			2. Diamond-Mesh Lath: Self-furring, with integrally applied felt paper backing. Weight 2.5 lb/sq. yd. (1.4 kg/sq. m).
			3. Acceptable Manufacturers: Alabama Metal Industries Corp., CEMCO, Clark Western Building Systems, Marino-Ware.

\*\* NOTE TO SPECIFIER \*\* Metal accessories are recommended to terminate the system and control cracking, but not required except over full building expansion joints. Delete if not required.

* 1. ACCESSORIES
		1. General: Comply with material provisions of ASTM C 1063 and the requirements indicated below; coordinate depth of accessories with thicknesses and number of coats required.
			1. Galvanized Steel Components: Fabricated from zinc-coated (galvanized) steel sheet complying with ASTM A 653, G40 (ASTM A 653M, Z90) minimum coating designation.
			2. Acceptable Manufacturers: Alabama Metal Industries Corp., CEMCO, Fry Reglet Corp., Gordon Inc., Metalex (Keene Products).
		2. Metal Corner Reinforcement: Expanded, large-mesh, diamond-metal lath fabricated from zinc-alloy or welded-wire mesh fabricated from 0.0475 inch (1.2mm) diameter, zinc-coated (galvanized) wire and specially formed to reinforce external corners of work on exterior exposures while allowing full encasement by limestone application.
		3. Casing Beads: Square-edged style, with expanded flanges of zinc alloy, minimum 0.0207 inch (0.53 mm) thick.
		4. Control Joints: Prefabricated, of zinc alloy, minimum 0.0207 inch (0.53 mm) thick.
			1. One-Piece Type: Folded pair of non-perforated screeds in M-shaped configuration, with expanded or perforated flanges. Provide removable protective tape on face of control joints.
		5. One-Piece Expansion Joints: Fabricated from zinc-coated (galvanized) steel; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.
		6. Foundation Sill (Weep) Screed: Standard profile designed for use at sill plate line to form stop and prevent limestone from contacting damp earth.
			1. Basis of Design Product: SWS Superior Weep Screed (#7 sill screed) as manufactured by Superior Metal Trim.
		7. Lath Attachment Devices: Material and type required by ASTM C 1063 for installations indicated.
		8. Fiberglass mesh: Spider lath.
	2. MISCELLANEOUS MATERIALS
		1. Water for Mixing and Finishing Limestone: Potable.
		2. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of no fewer than three exposed threads.
		3. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.
	3. MIXES AND COMPOSITIONS
		1. Thoroughly mix 1.5 gallons (6.0 L) of water for every bag of limestone veneer in mechanical mixer of sufficient capacity and power to properly blend materials.
		2. Color, Texture, Coursing of Finished Limestone Veneer: As selected by Architect from manufacturer's full range of colors and textures.
1. EXECUTION
	1. EXAMINATION
		1. Examine areas and substrates, with applicator present, for compliance with requirements and other conditions affecting performance of the Work.
		2. Verify that secondary moisture barrier is complete and has been inspected by authorities having jurisdiction.
		3. Proceed with installation only after unsatisfactory conditions have been corrected.
	2. PREPARATION
		1. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by limestone veneer application.

\*\* NOTE TO SPECIFIER \*\* Prior to beginning a direct application of system to concrete or masonry substrate, verify that surfaces to which system must bond, are not contaminated with curing compounds, bond breakers, or other contaminates that might affect bond. Delete if not required.

* + 1. Properly prepare solid substrates for application of limestone veneer which must directly bond to the substrate. Remove contaminates, including curing compounds and bond breakers by necessary means to leave substrate sufficiently absorptive for an adhered hydraulically applied limestone veneer system.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. INSTALLATION OF LATH
		1. Expanded-Metal Lath: Install according to ASTM C 1063.
		2. Install supplementary framing, blocking, and bracing at terminations in work and for support of fixtures, equipment services, and similar work to comply with details indicated or, if not otherwise indicated, to comply with applicable written instructions of lath and furring manufacturer.
		3. Install metal lath in accordance with manufacturer's recommendations,

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. INSTALLATION OF ACCESSORIES
		1. General: Install according to ASTM C 1063 and at locations indicated on Drawings.
		2. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to bases to hold accessories in place and in alignment during limestone installation. Install accessories of type indicated at following locations:
			1. External Corners: Install corner reinforcement at external corners.
			2. Terminations: Install casing beads, unless otherwise indicated.

\*\* NOTE TO SPECIFIER \*\* Delete control joints for a more natural appearance and where occasional cracking is a desirable feature.

* + 1. Control Joints: Install at locations indicated or, if not indicated, at locations complying with the following criteria and approved by Architect:
			1. Where an expansion or contraction joint occurs in surface of construction directly behind membrane.
			2. Distance between Control Joints: Not to exceed 12 feet (3.6 m) in either direction or a length-to-width ratio of 2 to 1.
			3. Where work areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.
	1. LIMESTONE VENEER APPLICATION
		1. Apply materials, composition, and mixes to comply with manufacturer's recommendations.
		2. Do not use materials that are frozen, caked, lumpy, dirty, or contaminated by foreign materials.
		3. Do not use excessive water in mixing and applying limestone materials.
		4. Hydraulically apply limestone veneer with equipment of sufficient capacity to apply material at not less than 140 psi pressure at nozzle.
		5. Apply limestone veneer to a nominal thickness of 1 inch (25 mm), and not less than 1/2 inch (12 mm) over top of lath at tooled joints.
		6. Pot Life: Do not apply materials that have been discharged from mixed longer than 30 minutes.
		7. After initial application of limestone veneer, allow surface to set-up sufficiently to allow proper application of texture, coursing, and colorant.
		8. Test surface with veneer with moisture meter to determine optimal time for application of field applied sprayed colorants.
		9. Moist-cure finished work in accordance with manufacturer's recommendations.
	2. CUTTING AND PATCHING
		1. Cut, patch, replace, repair, and point-up work as necessary to accommodate other work. Repair cracks and indented surfaces. Point-up surfaces around items that are built into or penetrate limestone surfaces.
		2. Repair or replace work to eliminate cracking, dry outs, efflorescence, and similar defects. Repair or replace work as necessary to comply with required visual effects
	3. CLEANING AND PROTECTING
		1. Remove temporary covering and other provisions made to minimize spattering of limestone veneer on other work. Promptly remove over-spray from door frames, windows, and other surfaces. Repair surfaces stained, marred or otherwise damaged during work. When work is completed, remove unused materials, containers, equipment, and debris.
		2. Provide final protection and maintain conditions, in a manner acceptable to manufacturer that ensure work is without damage or deterioration at the time of Substantial Completion

END OF SECTION