



CITY OF TAMPA

Bob Buckhorn, Mayor

CONTRACT ADMINISTRATION DEPARTMENT

Michael W. Chucran, Director

ADDENDUM NO. 7

DATE: December 14, 2015

Contract 16-C-00007; Wayne C. Papy Center Renovations

Bidders on the above referenced project are hereby notified that the following addendum is made to the Contract Documents. BIDS TO BE SUBMITTED SHALL CONFORM TO THIS NOTICE.

Item 1: The Bid Date for the above referenced project is hereby changed to December 22, 2015.

Item 2: Sheet A8.1, Window Type A1 Clarification: Glazing shall be 9/16" laminated glass set in a 2'-1/2" x 5" center glaze impact resistant storefront system.

Item 3: Add the attached Section 07920 – Joint Sealants

Item 4: Add the attached Section 08410 – Aluminum Entrances and Storefronts.

Item 5: Replace page 4 in Section 08800 – Glazing, with the attached revised page 4.

All other provisions of the Contract Documents and Specifications not in conflict with this Addendum shall remain in full force and effect. Questions are to be e-mailed to ContractAdministration@tampagov.net.

Jim Greiner

Jim Greiner, P.E., Contract Management Supervisor

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

SUMMARY

This Section includes sealants for the following applications, including those specified by reference to this Section:

Exterior joints in the following vertical surfaces and nontraffic horizontal surfaces:

Joints between different materials listed above.

Perimeter joints between materials listed above and frames of doors and windows.

Other joints as indicated.

Exterior joints in the following horizontal traffic surfaces:

Joints between different materials listed above.

Other joints as indicated.

Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:

Control and expansion joints on exposed interior surfaces of exterior walls.

Perimeter joints of exterior openings where indicated.

Tile control and expansion joints.

Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.

Joints between plumbing fixtures and adjoining walls, floors, and counters.

Other joints as indicated.

Related Sections include the following:

Division 8 Section "Glazing" for glazing sealants.

Division 9 Section "Gypsum Board Assemblies" for sealing perimeter joints of gypsum board partitions to reduce sound transmission.

Division 9 Section "Acoustical Panel Ceilings" for sealing edge moldings at perimeters of

acoustical ceilings.

PERFORMANCE REQUIREMENTS

Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

SUBMITTALS

Product Data: For each joint-sealant product indicated.

Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

Samples for Verification: For each type and color of joint sealant required. Install joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

Product Certificates: Signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.

SWRI Validation Certificate: For each elastomeric sealant specified to be validated by SWRI's Sealant Validation Program.

Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

Preconstruction Field Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in "Quality Assurance" Article.

Field Test Report Log: For each elastomeric sealant application. Include information specified in "Field Quality Control" Article.

Compatibility and Adhesion Test Reports: From sealant manufacturer indicating the following:

Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.

Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

Product Test Reports: From a qualified testing agency indicating sealants comply with requirements, based on comprehensive testing of current product formulations.

Warranties: Special warranties specified in this Section.

QUALITY ASSURANCE

Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.

Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

Testing will not be required if joint sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

Test elastomeric joint sealants according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in peel, and indentation hardness.

Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.

DELIVERY, STORAGE, AND HANDLING

Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.

Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

PROJECT CONDITIONS

Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:

When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.

When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F (4.4 deg C).

When joint substrates are wet.

Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

WARRANTY

General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

Warranty Period: Two years from date of Substantial Completion.

Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:

Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.

Disintegration of joint substrates from natural causes exceeding design specifications.

Mechanical damage caused by individuals, tools, or other outside agents.

Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

PRODUCTS AND MANUFACTURERS

Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified in the sealant schedules at the end of Part 3.

MATERIALS, GENERAL

Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

ELASTOMERIC JOINT SEALANTS

Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant in the Elastomeric Joint-Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.

Additional Movement Capability: Where additional movement capability is specified in the

Elastomeric Joint-Sealant Schedule, provide products with the capability, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, to withstand the specified percentage change in the joint width existing at the time of installation and remain in compliance with other requirements of ASTM C 920 for uses indicated.

Stain-Test-Response Characteristics: Where elastomeric sealants are specified in the Elastomeric Joint-Sealant Schedule to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

SOLVENT-RELEASE JOINT SEALANTS

Acrylic-Based Solvent-Release Joint-Sealant Standard: Comply with ASTM C 1311 for each product of this description indicated in the Solvent-Release Joint-Sealant Schedule at the end of Part 3.

Butyl-Rubber-Based Solvent-Release Joint-Sealant Standard: Comply with ASTM C 1085 for each product of this description indicated in the Solvent-Release Joint-Sealant Schedule at the end of Part 3.

Pigmented Narrow Joint Sealant: For each product of this description indicated in the Solvent-Release Joint-Sealant Schedule at the end of Part 3 provide manufacturer's standard, solvent-release-curing, pigmented, synthetic-rubber sealant complying with AAMA 803.3 and formulated for sealing joints 3/16 inch (5 mm) or smaller in width.

LATEX JOINT SEALANTS

Latex Sealant Standard: Comply with ASTM C 834 for each product of this description indicated in the Latex Joint-Sealant Schedule at the end of Part 3.

ACOUSTICAL JOINT SEALANTS

Acoustical Sealant for Exposed and Concealed Joints: For each product of this description indicated in the Acoustical Joint-Sealant Schedule at the end of Part 3, provide manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:

Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

PREFORMED JOINT SEALANTS

Preformed Silicone-Sealant System: For each product of this description indicated in the Preformed Joint-Sealant Schedule at the end of Part 3, provide manufacturer's standard system consisting of precured low-modulus silicone extrusion, in sizes to fit joint widths indicated, combined with a neutral-curing silicone sealant for bonding extrusions to substrates.

Preformed Foam Sealants: For each product of this description indicated in the Preformed Joint-Sealant Schedule at the end of Part 3, provide manufacturer's standard preformed, precompressed, impregnated, open-cell foam sealant manufactured from high-density urethane foam impregnated with a nondrying, water-repellent agent; factory produced in precompressed sizes and in roll or stick form to fit joint widths indicated and to develop a watertight and airtight seal when compressed to the degree specified by manufacturer; and complying with the following:

Properties: Permanently elastic, mildew resistant, nonmigratory, nonstaining, and compatible with joint substrates and other joint sealants.

Impregnating Agent: Neoprene rubber suspended in water-based emulsion.

Density: Manufacturer's standard.

Backing: Pressure-sensitive adhesive, factory applied to one side with protective wrapping.

JOINT-SEALANT BACKING

General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

Cylindrical Sealant Backings: ASTM C 1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

Type C: Closed-cell material with a surface skin.

Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F (minus 32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and otherwise contribute to optimum sealant performance.

Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

MISCELLANEOUS MATERIALS

Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.

Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

EXAMINATION

Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

Proceed with installation only after unsatisfactory conditions have been corrected.

PREPARATION

Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:

Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include the following:

Remove laitance and form-release agents from concrete.

Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

- Metal.
- Glass.
- Porcelain enamel.
- Glazed surfaces of ceramic tile.

Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

INSTALLATION OF JOINT SEALANTS

General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

Acoustical Sealant Application Standard: Comply with recommendations of ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

Do not leave gaps between ends of sealant backings.

Do not stretch, twist, puncture, or tear sealant backings.

Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

Install bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints.

Install sealants by proven techniques to comply with the following and at the same time backings are installed:

Place sealants so they directly contact and fully wet joint substrates.

Completely fill recesses provided for each joint configuration.

Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

Remove excess sealants from surfaces adjacent to joint.

Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

Use masking tape to protect adjacent surfaces of recessed tooled joints.

Installation of Preformed Silicone-Sealant System: Comply with the following requirements:

Apply masking tape to each side of joint, outside of area to be covered by sealant system.

Apply a bead of silicone sealant to each side of joint to produce a bead of size complying with preformed silicone-sealant system manufacturer's printed schedule and covering a bonded area of not less than a 3/8 inch (10 mm). Hold edge of sealant bead inside of masking tape by 1/4 inch (6 mm).

Within 10 minutes of sealant application, press silicone extrusion into sealant to wet extrusion and substrate. Use a roller to apply consistent pressure and ensure uniform contact between sealant and both extrusion and substrate.

Complete installation of horizontal joints before installing vertical joints. Lap vertical joints over horizontal joints. At end of joints, cut silicone extrusion with a razor knife.

Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, to produce seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant to comply with sealant manufacturer's written instructions.

FIELD QUALITY CONTROL

Field-Adhesion Testing: Field-test joint-sealant adhesion to joint substrates as follows:

Perform one test for each 1000 feet (300 m) of joint length thereafter or one test per each floor per elevation.

CLEANING

Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

PROTECTION

Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

ELASTOMERIC JOINT-SEALANT SCHEDULE

- A. Bituminous based (Type B): Single component, asphalt compound, elongation capability of 2% of joint width.

1. Use for roof sealant and dissimilar material separation at roof.
 2. Approved Manufacturers:
 - a) Barrier International "BR-30".
 - b) Kamak "AR Elastomeric.
- B. Acrylic Emulsion Latex (Type C): ASTM C834, single component; color as selected.
1. Formulated to be non-sag printable.
 2. Approved Manufacturers:
 - a) Bostik "Chem-Calk 600."
 - b) Pencia "AC-20."
 - c) Sonneborn "Sonolac."
 - d) Tremco "Tremco Acrylic Latex 834."
- C. Polyurethane Sealant (Type G): ASTM C920, Grade NS, Class 25, Use for exterior sealant joints except where specified herein for silicone type; single component, chemical curing, non-staining, non-bleeding, capable of continuous water immersion, none-sagging type; color as selected.
1. Approved Manufacturers
 - a) Bostik "Chem-Calk 900."
 - b) Mameco "Vulkem 921."
 - c) Pecora Dynatrol 1."
 - d) Sika "Sikaflex IA."
- D. Silicone Sealant (Type K): ASTM C920, Grade NS, Class 25, Use for exterior sealant joints where both faces are metal, glass or other non-porous material; single component, fungus resistant, acidic curing, non-sagging, non-staining, non-bleeding; color as selected.
1. Approved Manufacturers:
 - a) Bostik "Chem-Calk 1200."
 - b) Dow "Dow Corning 999A."
 - c) General Electric "Construction 1200."
 - d) Pecora Corp. "863."
 - e) Tremco, Inc. "Proglaze."
- E. Coating System for Exterior Wall: Single Component Elastomeric Polyurethane seamless coating, color as selected.
1. Approved Manufacturers:
 - a) Mameco "Vulkem 450."

Pro-Series SC-170 Rubber Base Sound Sealant; Ohio Sealants, Inc.
BA-98; Pecora Corporation.
Tremco Acoustical Sealant; Tremco.

END OF SECTION 07920

SECTION 08410 - ALUMINUM ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

SUMMARY

This Section includes the following:

Exterior storefront systems.

Related sections include the following:

Division 7 Section "Joint Sealants" for joint sealants installed as part of aluminum entrance and storefront systems.

Division 8 Section "Glazing."

SYSTEM DESCRIPTION

General: Provide aluminum entrance and storefront systems capable of withstanding loads and thermal and structural movement requirements indicated without failure, based on testing manufacturer's standard units in assemblies similar to those indicated for this Project. Failure includes the following:

Air infiltration and water penetration exceeding specified limits.

Framing members transferring stresses, including those caused by thermal and structural movement, to glazing units.

Glazing: Physically and thermally isolate glazing from framing members.

Thermally Broken Construction: Provide systems that isolate aluminum exposed to exterior from aluminum exposed to interior with a material of low thermal conductance.

Wind Loads: Provide entrance and storefront systems, including anchorage, capable of withstanding wind-load design pressures calculated according to requirements of authorities having jurisdiction or the American Society of Civil Engineers' ASCE 7, "Minimum Design Loads for Buildings and Other Structures," 6.4.2, "Analytical Procedure," whichever are more stringent.

Deflection of framing members in a direction normal to wall plane is limited to 1/175 of clear span or 3/4 inch (19 mm), whichever is smaller, unless otherwise indicated.

Static-Pressure Test Performance: Provide entrance and storefront systems that do not evidence material failures, structural distress, failure of operating components to function normally, or permanent deformation of main framing members exceeding 0.2 percent of clear span when tested according to ASTM E 330.

Test Pressure: 150 percent of inward and outward wind-load design pressures.

Duration: As required by design wind velocity; fastest 1 mile (1.609 km) of wind for relevant exposure category.

Hurricane-Resistance Test Performance: Provide entrance and storefront systems that pass large and small missile-impact tests, as required by systems' location above grade, and cyclic-pressure tests according to testing requirements of authorities having jurisdiction.

Dead Loads: Provide entrance- and storefront-system members that do not deflect an amount which will reduce glazing bite below 75 percent of design dimension when carrying full dead load.

Provide a minimum 1/8-inch (3.18-mm) clearance between members and top of glazing or other fixed part immediately below.

Provide a minimum 1/16-inch (1.59-mm) clearance between members and operable windows and doors.

Live Loads: Provide entrance and storefront systems, including anchorage, that accommodate the supporting structures' deflection from uniformly distributed and concentrated live loads indicated without failure of materials or permanent deformation.

Air Infiltration: Provide entrance and storefront systems with permanent resistance to air leakage through fixed glazing and frame areas of not more than 0.06 cfm/sq. ft. (0.3 L/s/sq. m) of fixed wall area when tested according to ASTM E 283 at a static-air-pressure difference of 1.57 lbf/sq. ft. (75.2 Pa).

Water Penetration: Provide entrance and storefront systems that do not evidence water leakage through fixed glazing and frame areas when tested according to ASTM E 331 at minimum differential pressure of 20 percent of inward-acting wind-load design pressure as defined by ASCE 7, "Minimum Design Loads for Buildings and Other Structures," but not less than 6.24 lbf/sq. ft. (299 Pa). Water leakage is defined as follows:

Uncontrolled water infiltrating systems or appearing on systems' normally exposed interior surfaces from sources other than condensation. Water controlled by flashing and gutters that is drained back to the exterior and cannot damage adjacent materials or finishes is not water leakage.

Thermal Movements: Provide entrance and storefront systems, including anchorage, that accommodate thermal movements of systems and supporting elements resulting from the following maximum change (range) in ambient and surface temperatures without buckling, damaging stresses on glazing, failure of joint sealants, damaging loads on fasteners, failure of doors or other operating units to function properly, and other detrimental effects.

Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

Structural-Support Movement: Provide entrance and storefront systems that accommodate structural movements including, but not limited to, sway and deflection.

Condensation Resistance: Provide storefront systems with condensation resistance factor (CRF) of not less than 45 when tested according to AAMA 1503.1.

Average Thermal Conductance: Provide storefront systems with average U-values of not more than 0.63 Btu/sq. ft. x h x deg F (3.57 W/sq. m x K) when tested according to AAMA 1503.1.

Dimensional Tolerances: Provide entrance and storefront systems that accommodate dimensional tolerances of building frame and other adjacent construction.

SUBMITTALS

Product Data: For each product specified. Include details of construction relative to materials, dimensions of individual components, profiles, and finishes.

Shop Drawings: For entrance and storefront systems. Show details of fabrication and installation, including plans, elevations, sections, details of components, provisions for expansion and contraction, and attachments to other work.

For entrance systems, include hardware schedule and indicate operating hardware types, quantities, and locations.

Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for units with factory-applied color finishes.

Samples for Verification: Of each type of exposed finish required in manufacturer's standard sizes. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.

Cutaway Sample: Of each vertical-to-horizontal framing intersection of systems, made from minimum 6-inch (150-mm) lengths of full-size components and showing details of the following:

Joinery.

Anchorage.

Expansion provisions.

Glazing.

Flashing and drainage.

Structural-sealant joints.

Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.

Sealant Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating that materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with sealants; include joint sealant manufacturers' written interpretation of test results relative to sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.

Field Test Reports: Indicate and interpret test results for compliance with storefront systems' performance requirements.

Product Test Reports: Based on evaluation of tests performed by manufacturer and witnessed by a qualified independent testing agency, indicate compliance of entrance and storefront systems with requirements based on comprehensive testing of current systems.

QUALITY ASSURANCE

Installer Qualifications: Engage an experienced installer to assume engineering responsibility and perform work of this Section who has specialized in installing entrance and storefront systems similar to those required for this Project and who is acceptable to manufacturer.

Engineering Responsibility: Prepare data for entrance and storefront systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

Testing Agency Qualifications: Demonstrate to Architect's satisfaction, based on Architect's evaluation of criteria conforming to ASTM E 699, that the independent testing agency has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.

Source Limitations: Obtain each type of entrance and storefront system through one source from a single manufacturer.

Product Options: Drawings indicate size, profiles, and dimensional requirements of entrance and storefront systems and are based on the specific systems indicated. Other manufacturers' systems with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."

Do not modify intended aesthetic effect, as judged solely by Architect, except with Architect's approval and only to the extent needed to comply with performance requirements. Where modifications are proposed, submit comprehensive explanatory data to Architect for review.

PROJECT CONDITIONS

Field Measurements: Verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating systems without field measurements. Coordinate construction to ensure actual dimensions correspond to established dimensions.

WARRANTY

General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

Special Warranty: Submit a written warranty executed by the manufacturer agreeing to repair or replace components of entrance and storefront systems that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, the following:

Structural failures including, but not limited to, excessive deflection.

Adhesive sealant failures.

Cohesive sealant failures.

Failure of system to meet performance requirements.

Deterioration of metals, metal finishes, and other materials beyond normal weathering.

Failure of operating components to function normally.

Water leakage through fixed glazing and frame areas.

Warranty Period: 2 years from date of Substantial Completion.

PART 2 - PRODUCTS

MANUFACTURERS

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

EFCO Corporation.
Kawneer Company, Inc.
Coral Industries, Inc.

MATERIALS

Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated, complying with the requirements of standards indicated below.

Sheet and Plate: ASTM B 209 (ASTM B 209M).

Extruded Bars, Rods, Shapes, and Tubes: ASTM B 221 (ASTM B 221M).

Extruded Structural Pipe and Tubes: ASTM B 429.

Bars, Rods, and Wire: ASTM B 211 (ASTM B 211M).

Welding Rods and Bare Electrodes: AWS A5.10.

Steel Reinforcement: Complying with ASTM A 36 (ASTM A 36M) for structural shapes, plates, and bars; ASTM A 611 for cold-rolled sheet and strip; or ASTM A 570 (ASTM A 570M) for hot-rolled sheet and strip.

Glazing as specified in Division 8 Section "Glazing."

Glazing Gaskets: Manufacturer's standard pressure-glazing system of black, resilient glazing gaskets,

setting blocks, and shims or spacers, fabricated from an elastomer of type and in hardness recommended by system and gasket manufacturer to comply with system performance requirements. Provide gasket assemblies that have corners sealed with sealant recommended by gasket manufacturer.

Spacers, Setting Blocks, Gaskets, and Bond Breakers: Manufacturer's standard permanent, nonmigrating types in hardness recommended by manufacturer, compatible with sealants, and suitable for system performance requirements.

Framing system gaskets, sealants, and joint fillers as recommended by manufacturer for joint type.

Sealants and joint fillers for joints at perimeter of entrance and storefront systems as specified in Division 7 Section "Joint Sealants."

Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements, except containing no asbestos, formulated for 30-mil (0.762-mm) thickness per coat.

COMPONENTS

Provide manufacturer's standard 2 ½" x 5"; Non-Thermal; center glazed frames similar to Coral FL500 Impact-Resistant Storefront.

Glazing Stops and Gaskets: Provide manufacturer's standard snap-on extruded-aluminum glazing stops and preformed gaskets.

Brackets and Reinforcements: Provide manufacturer's standard brackets and reinforcements that are compatible with adjacent materials. Provide nonstaining, nonferrous shims for aligning system components.

Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

Reinforce members as required to retain fastener threads.

Do not use exposed fasteners, except for hardware application. For hardware application, use countersunk Phillips flat-head machine screws finished to match framing members or hardware being fastened, unless otherwise indicated.

Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123 or ASTM A 153 requirements.

Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing, compatible with adjacent materials, and of type recommended by manufacturer.

Concealed Flashing: Dead-soft, 0.018-inch- (0.457-mm-) thick stainless steel, complying with ASTM A 666, of type selected by manufacturer for compatibility with system.

FABRICATION

General: Fabricate components that, when assembled, will have accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

Fabricate components for screw-spline frame construction.

Forming: Form shapes with sharp profiles, straight and free of defects or deformations, before finishing.

Prepare components to receive concealed fasteners and anchor and connection devices.

Fabricate components to drain water passing joints and condensation and moisture occurring or migrating within the system to the exterior.

Welding: Weld components to comply with referenced AWS standard. Weld before finishing components to greatest extent possible. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

Glazing Channels: Provide minimum clearances for thickness and type of glass indicated according to FGMA's "Glazing Manual."

Metal Protection: Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

Storefront: Fabricate framing in profiles indicated for flush glazing (without projecting stops). Provide subframes and reinforcing of types indicated or, if not indicated, as required for a complete system. Factory assemble components to greatest extent possible. Disassemble components only as necessary for shipment and installation.

ALUMINUM FINISHES

General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.

Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.

Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 606.1 or AAMA 608.1.

Color: As selected by Architect from the full range of industry colors and color densities.

PART 3 - EXECUTION

EXAMINATION

Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of entrance and storefront systems. Do not proceed with installation until unsatisfactory conditions have been corrected.

INSTALLATION

General: Comply with manufacturer's written instructions for protecting, handling, and installing entrance and storefront systems. Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Seal joints watertight.

Metal Protection: Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

Install components to drain water passing joints and condensation and moisture occurring or migrating within the system to the exterior.

Set continuous sill members and flashing in a full sealant bed to provide weathertight construction, unless otherwise indicated. Comply with requirements of Division 7 Section "Joint Sealants."

Install framing components plumb and true in alignment with established lines and grades without warp or rack of framing members.

Install glazing to comply with requirements of Division 8 Section "Glazing," unless otherwise indicated.

Prepare surfaces that will contact structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.

Install structural silicone sealant according to sealant manufacturer's written instructions.

Mechanically fasten glazing in place until structural sealant is cured.

Remove excess sealant from component surfaces before sealant has cured.

Install secondary-sealant weatherseal according to sealant manufacturer's written instructions to provide weatherproof joints. Install joint fillers behind sealant as recommended by sealant manufacturer.

Install perimeter sealant to comply with requirements of Division 7 Section "Joint Sealants," unless otherwise indicated.

Erection Tolerances: Install entrance and storefront systems to comply with the following maximum tolerances:

Variation from Plane: Limit variation from plane or location shown to 1/8 inch in 12 feet (3 mm in 3.7

m); 1/4 inch (6 mm) over total length.

Alignment: Where surfaces abut in line, limit offset from true alignment to 1/16 inch (1.5 mm). Where surfaces meet at corners, limit offset from true alignment to 1/32 inch (0.8 mm).

Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch (3 mm).

FIELD QUALITY CONTROL

Testing Agency: Engage a qualified independent testing agency to perform field quality-control testing indicated.

Structural-Silicone-Sealant Adhesion Test: Test installed structural silicone sealant according to field adhesion test method described in AAMA CW #13, "Structural Sealant Glazing Systems (A Design Guide)."

Test a minimum of 2 areas.

Water Spray Test: After completing the installation of test areas indicated, test storefront system for water penetration according to AAMA 501.2 requirements.

Repair or remove and replace Work that does not meet requirements or that is damaged by testing; replace to conform to specified requirements.

ADJUSTING AND CLEANING

Adjust doors and hardware to provide tight fit at contact points and weather stripping, smooth operation, and weathertight closure.

Remove excess sealant and glazing compounds, and dirt from surfaces.

PROTECTION

Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure entrance and storefront systems are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 08410

Install liquid sealants at ambient and substrate temperatures above 40 deg F (4.4 deg C).

WARRANTY

General: Warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

Manufacturer's Warranty on Coated Glass Products: Submit written warranty signed by coated glass manufacturer agreeing to furnish replacements for those coated glass units that deteriorate as defined in "Definitions" article, f.o.b. point of manufacture, freight allowed Project site, within specified warranty period indicated below. Warranty covers only deterioration due to normal conditions of use and not to handling, installing, and cleaning practices contrary to glass manufacturer's published instructions.

Warranty Period: Manufacturer's standard but not less than 5 years after date of Substantial Completion.

PART 2 - PRODUCTS

MANUFACTURERS

Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the products specified in Product Data Sheets at end of this Section.

PRIMARY FLOAT GLASS PRODUCTS

HEAT-TREATED LAMINATE SAFETY GLASS

Coated, Tinted, Heat-Treated Laminated Safety Glass: ASTM C 1048, Condition A (uncoated surfaces), Type I (transparent glass, flat), Class 3 tinted, Quality q3, glazing select, with tint color and performance characteristics for 9/16" exterior glass matching those indicated for annealed primary tinted float glass; kind as indicated below:

Kind FT (fully tempered) where indicated.

COLORS: Selected from manufacturer standard ranges of colors.

WIRED GLASS

Wired Glass: ASTM C 1036, Type II (patterned and wired glass, flat), Class 1 (clear), Quality q8 (glazing); 1/4" thick; of form and mesh pattern indicated below:

Polished Wired Glass: Form 1 (wired, polished both sides), and as follows:

Mesh m1 (diamond).

Manufacturers: Subject to compliance with requirements, provide heat-treated glass by one of the following companies.