

PART 1. GENERAL**1.1 GENERAL PROVISIONS**

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

A. Work Included: Provide labor, materials, and equipment necessary to complete the work of this Section, including but not limited to the following:

1. Exterior ultracompact surface panels and attachment system as required for a complete drained and back-ventilated rainscreen system for the following applications:
 - a. Wall panels.
 - b. Storefront panels.

B. Related Work: Coordinate with the following items which are specified in other sections:

1. Section 06 16 00 - SHEATHING for sheathing behind facade system.
2. Section 07 27 00 - AIR BARRIERS for air barrier behind facade system.
3. Section 07 62 00 - SHEET METAL FLASHING AND TRIM for copings, flashings, and other sheet metal work not part of facade assemblies

C. Structural Design: Provide engineered design capable of withstanding combined effects of stresses from dead loads, wind loads, normal thermal movement, and other anticipated stresses without evidence of permanent defects or failure.

1. Wind Load: Uniform pressure (velocity pressure) as indicated on Structural Drawings, acting inward or outward.
2. Dead Loads: Design for loading to accommodate support of cladding systems specified by related sections and shown on Drawings and as required by applicable building code.
3. Seismic Loads: Design and size components to withstand seismic loads and sway displacement.
4. Design all components to deflect, perpendicular to the plane of the wall, no more than L/360 the span, under design wind loading.

D. Thermal Expansion and Contraction: Design for movement due to cyclic day and night temperatures to not exceed safety factors for fasteners, joints, seals, and components.

E. Rain Screen Design: Design ventilating system assembly to accommodate movement of air into and out of the assembly.

F. Cladding Accommodation: Design framing support assembly to maintain dimensions to face of cladding materials indicated on Drawings. Design framing supports configuration, size, spacing, and make adjustments as needed to accommodate support for each Dekton panel.

1.3 SUBMITTALS

- A. Product Data: Include manufacturer's product specifications, standard details, test results, and general recommendations, as applicable to materials and finishes for each component and for total system assemblies.
- B. Shop Drawings: Show layouts of all wall surfaces, details of corner conditions, joints, system profiles, supports, anchorages, trim, flashings, closures, and special details.
 - 1. Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation. Certify system meets wind load and structural loads required by Code in the jurisdiction of the project.
 - 2. Include details indicating relationship with adjacent construction.
- C. Informational Submittals:
 - 1. Design Calculations:
 - 2. Comprehensive analysis of design loads, including dead loads, live loads and wind loads.
 - 3. Design shall be sealed by the designing engineer.
 - a. Test Data: Independent test results or engineered analysis for performance signed by independent agency representative.
 - b. Manufacturer's Instructions: Include installation instructions, clearances, special procedures.
- D. Warranty Draft: Concurrent with initial product data submittal, submit draft of manufacturer's warranty for Architect's review of terms. Draft shall include all specified exceptions and inclusions.
- E. Verification Samples: Submit two 4x4 inch samples of each color selected.
- F. Qualified labor: The contractor, by commencing the work of this section, assumes overall responsibility to assure that all assemblies, components and parts shown or required within the work of this section comply with contract documents and are compatible with each other and with the conditions and expected use.
- G. Sustainable Design Submittals: Provide GEI GREENGUARD, Health Product Declaration, Environmental Product Declaration, and ISO 14001 certification.
- H. Extra Stock Materials: Furnish 2% extra stock materials, minimum one full size panel, for each color on the project.

1.4 QUALITY ASSURANCE

- A. Manufacturing Facility: ISO 9001

B. Installer Qualifications: Engage an experienced installer acceptable to the ultracompact surface panel manufacturer who has completed wall system projects similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

C. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where the Project is located and who is experienced in providing engineering services of the kind indicated.

D. Mockups: Provide an in-place mock-up of wall system at location on the building acceptable to the Architect. Accepted mock-up may remain in place.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

E. Pre-Installation Meeting: Prior to installation, conduct a pre-installation project meeting. Contractor, Subcontractor, Material Suppliers, Architect and Owner representative shall be notified of the meeting. Review methods and procedures related to wall assemblies.

1. Meet with installers whose work interfaces with or affects panels, including installers of doors, windows, and louvers.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to installation, including manufacturer's written instructions.
4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
5. Review flashings, special details, wall penetrations, openings, terminations, and condition of other construction.
6. Review temporary protection requirements during and after installation.
7. Review procedures for repair of panels damaged after installation.
8. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's requirements for packaging, delivery, storage and handling. Use stable, flat pallets that are at least the same dimension as the sheets. Deliver panels in undamaged condition.

B. Exercise care in unloading, storing, and erecting wall system to prevent bending, twisting, and surface damage.

1.6 PROJECT CONDITIONS

EXTERIOR FAÇADE PANELS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of wall system to be performed according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Verify field measurements prior to fabrication. Coordinate fabrication schedule with construction to avoid delays due to fabrication and delivery.

1.7 WARRANTY

- A. Warranty: Provide manufacturer's 25-year standard limited warranty.

PART 2. PRODUCTS**2.1 EXTERIOR PANELS**

A. Ultracompact Surfacing Sheet: Dekton by Cosentino USA; Tel 774-504-4144, www.dekton.com. No substitutions allowed.

1. Composition: Flat slabs of selected materials utilizing 25,000-ton press and sintered particle technology (TSP), fabricated with applied mesh backing.
2. Dekton Collection: _____
3. Color: _____ As selected from manufacturer's full color range **OR** Custom color as selected.
4. Thickness: 8 mm (0.31 inches) **OR** 12 mm (0.47 inches).
5. Sustainable Design Certifications: ISO 14001, GEI GREENGUARD Gold Certified.
6. Fire Performance:
 - a. Non-Combustible: per ASTM E-136
 - b. Flame Spread: non-combustible.
 - c. Smoke Development: non-combustible.
 - d. Ignition Temperature: non-combustible.
 - e. Burning Classification: non-combustible.
 - f. No Degradation: ASTM E119.g. NFPA 285: As non-combustible, tested as part of an assembly when combustible materials are present, where required by code. Meets performance requirements for multi-story construction. When required for compliance with local building codes, the wall cladding assembly shall not ignite when exposed to a radiant heat energy source, NFPA 268.
7. Physical Characteristics:
 - a. Moisture Expansion: 0.005 percent minimum, tested to ASTM C370.
 - b. Breaking Strength: 3963 lbf minimum, tested to ASTM C648.
 - c. Flexural Strength: 7100 psi minimum, tested to ASTM C674.
 - d. Water Absorption: 0.03 percent maximum, tested to ASTM C373.
 - e. Resistance to Wear: 182.2 average wear index, tested to ASTM C501.
 - f. Thermal Shock Resistance: No defects, tested to ASTM C484.
 - g. Bond Strength: 423 psi average, tested to ASTM C482.
 - h. Specific Absorption and Gravity, tested to ASTM C97/C97M: Average percent of absorption per weight 0.02 percent; average density 156 pounds per cubic foot.

EXTERIOR FAÇADE PANELS

- i. Breaking Module, tested to ASTM C99/C99M: Average dry breaking strength 8128 PSI; average wet breaking strength: 7490 PSI.
 - j. Flexural Strength, tested to ASTM C880: Average dry flexural strength 6840 PSI; average wet flexural strength 6205 PSI.
 - k. Resistance to Compression, tested to ASTM C170/C170M: Average dry compression 34,409 PSI; average wet compression 17,823 PSI.
 - l. Resistance to Abrasion, tested to ASTM C1353/C1353M: 349 average abrasion index.
 - m. Resistance to Chemical Substances; tested to ASTM C650: Per manufacturer's published data. Household Cleaning products: Unaffected. Swimming pool chemicals: Unaffected.
 - n. Humidity Resistance: No formation of blisters when subjected to condensing water fog at 100% relative humidity and 100-degree F (38 degree C) for 3000 hours, ASTM D 2247.
 - o. Salt Spray Resistance: At the completion of a 300-hour ASTM B117 test, results indicate no deleterious effects as defined by the test standard.
 - p. Weather Exposure: Minimum 5000 hours in Q-Sun Accelerated Weathering Type Weatherometer using cycle of 90 minutes light and 30 minutes diminished light and demineralized water with a maximum color change of 1 Delta E units from original color.
- B. Mounting System: Designed to withstand structural loading due to wind load and the dead load of the panel. Provide in conjunction with design of a drained and back ventilated. rainscreen assembly, consistent with material properties of panel as provided by manufacturer.
- C. Panel Clip Anchor: Tested to meet applicable pull-out strength values.
- D. Exposed Trim: Extruded aluminum trim as indicated on the Drawings:
- 1. Finish: Clear anodized aluminum.
 - 2. Finish: Color anodized aluminum.
 - 3. Finish: 2-coat fluoropolymer finish, 70% resin.
 - 4. Finish: 3-coat fluoropolymer finish, 70% resin.
 - 5. Color: As selected by Architect.

2.2 SUPPORT SYSTEMS

- A. Gridworx support system as designed by Precision Wall Systems.
10980 Alder Circle, Dallas, TX 75239
214.774.4502, No substitutions allowed.
- B. Proprietary Design/Build panel, modified curtain wall cladding system for project use which includes all materials required to provide a completed system including, but not limited to the following:
- 1. Gridworx Discrete Girt, allows continuous insulation
 - 2. Gridworx Vertical Mullions

3. Gridworx Cladding System

C. Gridworx Furring Channels (if applicable)

1. Subframe components (if applicable) - vertical mullions provided in twelve-foot (12') lengths. Thermally broken discrete clips are specified in length by the curtain wall engineer. Insulation is not provided by Precision Wall Systems and is the responsibility of others.

D. Gridworx "ULTRA" Extruded Aluminum Cladding System; Floating Mount Anchors:

1. Material: Alloy – 6005 with a T5 temper; optional black anodized finish of AA M12C22A21 meeting the standard of AAMA 611-98
2. Gridworx "ULTRA" Substrate channels extruded in J configurations and align with engagement anchors. All channels are extruded in twelve-foot (12') lengths and cut to length in the field.
3. Gridworx "Ultra" Engagement anchors are spaced on back of panel at dead load and wind load locations as determined by curtainwall engineer and attached using Gridworx lock washer and KEIL undercut anchor.
4. Subframe components (if applicable) - vertical mullions provided in twelve-foot (12') lengths. Thermally broken discrete clips are specified in length by the curtain wall engineer. Insulation is not provided by Precision Wall Systems and is the responsibility of others.

E. Screw Fasteners:

1. Steel Stud
 - a. Elco Drill-Flex or HILTI Kwik-Flex fasteners, 1/4-20 X 2 1/2" self-drilling structural fasteners – SAE J 429 / Grade 5 with a Stallard Coating. Installation to be on studs with a minimum of 18 gauge set on 16" centers.
2. Concrete or CMU
 - a. Elco Con-flex #14x2 1/4" Dual Hardened with Stalgard Coating, 1" Minimum thread engagement. Installation of fasteners for the "Intermediate T" to be on 24" centers with top and bottom screw to alternate so as to not have both invading the same cavity of the CMU block. "Top J" and "Starter J" to be installed on 24" centers.
3. Wood
 - a. SPAX Powerlag 1/4"x3" HWH Wood Fastener. 1 1/2" Minimum

thread engagement, to be installed on minimum 2"X6" studs set on 16" centers.

F. Undercut anchors:

1. 12mm and 20mm DEKTON: KEIL M6x14.5 – part number 555 020 777. Spacing determined by curtainwall engineer.
2. 8mm DEKTON: KEIL M6x11.5 – part number 555 020 712. Spacing determined by curtainwall engineer.

G. Shims

1. Full bearing hi-impact resistant plastic of 3" vertical or greater.

2.2 FABRICATION

A. Fabrication: Comply with manufacturer's standard guidelines.

5. Panel Dimensions: Fabricate panels under controlled shop conditions to the greatest extent practical. Field fabrication shall be minimized.
6. Appearance: Panel lines, breaks, and angles shall be true.

PART 3. EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements indicated for conditions affecting performance of the wall system.

B. Surfaces to receive panels shall be even, smooth, dry, and free from defects detrimental to the installation of the panel system. Notify Contractor in writing of conditions detrimental to SECTION 07 4200 proper and timely completion of the work.

C. Confirm load bearing wall surface is plumb and level, with no deviations greater than 1/4 inch (6 mm) in 20 feet (6096 mm).

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install panels and sub-frame system in accordance with manufacturer's guidelines and approved submittals.
- B. Install panels plumb and level and accurately spaced in accordance with manufacturer's recommendations and approved submittals and drawings.
- C. Anchor panels and sub-framing securely per engineering recommendations and in accordance with approved shop drawings to allow for necessary movement and structural support.
- D. Do not install panels or component parts which are observed to be defective or damaged including, but not limited to: warped, bowed, abraded, scratched, and broken members.
- E. Do not cut or trim component parts during installation in a manner that would damage the finish, decrease the strength, or result in visual imperfection or a failure in performance. Return component parts with require alteration to the shop for re-fabrication or replacement.
- F. Install corner profiles and trim with fasteners appropriate for use with adjoining construction as indicated on the Contract Drawings and as recommended by manufacturer.

3.4 ADJUSTING AND CLEANING

- A. Remove masking and panel protection as soon as practical after installation.
- B. Adjust final panel installation so that all joints are true and even throughout the installation. Panels out of plane shall be adjusted with the surrounding panels to minimize any imperfection.
- C. Repair panels with minor damage. Remove and replace panels damaged beyond repair as a direct result of the panel installation.
- D. Clean finished surfaces as recommended by panel manufacturer.

END OF SECTION