SECTION 074419

PORCELAIN TILE WALL PANELS

PART 1 –GENERAL

**1.1. SUMMARY:**

A. Base Bid:

1. General Contractor Provide:

a. This Section includes tile wall panels for:

1) Vertical wall panels for rain screen installation.

B. Related Sections:

1. Division 05 Section, "Cold Formed Metal Framing" for metal framing.

2. Division 07 Section, "Building insulation "for insulation.

3. Division 07 Section, "Fluid Applied Membrane Air Barriers" for air barrier.

**1.2. PREINSTALLATION MEETINGS**

A. Pre-installation Conference: Conduct conference at Project site.

 1. Meet with Owner, Architect, Owner's insurer if applicable, tile wall panel

 Installer, tile panel manufacturer's representative, structural-support Installer,

 and installers whose work interfaces with or affects tile 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 tile panel 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 siding details, wall penetrations, openings, and

 condition of other construction that affect tile panels.

 6. Review governing regulations and requirements for insurance, certificates, and

 tests and inspections if applicable.

 7. Review temporary protection requirements for tile panel assembly during and

 after installation.

 8. Review of procedures for repair of tile panels damaged after installation.

 9. Document proceedings, including corrective measures and actions required,

 and furnish copy of record to each participant.

**1.3. ACTION SUBMITTALS**

A. Product Data: For each type of product indicated.

1. Include construction details, material descriptions, and dimensions of individual components and profiles, and finishes for each type of panel and accessory.

 B. LEED Submittals:

 1. Product Data for Credit MR 4: For products having recycled content,

 documentation indicating percentages by weight of postconsumer and

 pre-consumer recycled content. Include statement indicating cost for each

 product having recycled content.

 C. Shop Drawings:

 1. Include fabrication and installation layouts of tile panels; details of edge

 conditions, joints, panel profiles, corners, anchorages, attachment system,

 trim, flashings, closures, and accessories; and special details.

 2. Accessories: Include details of the flashing, trim, and anchorage systems, at a

 scale of not less than 1-1/2 inches per 12 inches.

 D. Samples for Verification: For each type, color, texture, and pattern required.

 1. One (1) piece each 12-inch-long by actual-panel-height sample of panels.

 2. Include fasteners, closures, and other metal panel accessories.

**1.4. INFORMATIONAL SUBMITIALS**

1. Qualification Data: For Installer.

B. Product Test Reports: For each product, for tests performed by a qualified testing

 agency.

C. Sample Warranties: For special warranties.

**1.5. CLOSEOUT SUBMITTALS**

1. Maintenance Data: For tile panels to include in maintenance manuals.

**1.6. QUALITY ASSURANCE**

A. Installer Qualifications: An entity that employs installers and supervisors who are

 trained and approved by manufacturer.

B. Mockups: Build mockups to verify selections made under sample Submittals and to

 demonstrate aesthetic effects and qualities of materials and execution.

1. Build mockup of typical corner wall panel as shown on Drawings;

Approximately 48 inches square by full thickness, including insulation, supports, attachments, and accessories.

1. Approval of mockups is for other material and construction qualities specifically approved by Architect in writing.
2. Approval of mockups does not constitute approval of deviations from the

 Drawings unless such deviations are specifically approved by Architect in writing.

 4. Approved mockups may become part of the completed work if undisturbed at

 time of substantial completion.

**1.7. DELIVERY, STORAGE, AND HANDLING**

A. Store materials in a dry, well-ventilated, weather tight place.

* 1. **PROJECT CONDITIONS**

 A. Weather Limitations: Proceed with panels installation only if substrate is completely

 dry and if existing and forecasted weather conditions permit panels to be installed

 according to manufacturer's written instructions.

**1.9 COORDINATION**

A. Coordinate tile panel installation with rain drainage work, flashing, trim, construction

 of soffits, and other adjoining work to provide a secure installation.

**1.10. WARRANTY**

1. Special Warranty: Manufacturer's 10-year standard form in which manufacturer

agrees to repair or replace components of tile panel(s) that fail in materials or workmanship within specified warranty period.

B. Failures include, but are not limited to, the following:

1. Structural failures, including rupturing, cracking, or puncturing.

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

 weathering.

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 **1.11 ATTIC STOCK**

A. Provide attic stock equal to 5-slab panels of each panel color and size indicated on

 Drawings.

**PART 2- PRODUCTS:**

 **2.1. PERFORMANCE REQUIREMENTS**

A General: Provide tile wall panels that comply with performance requirements

 specified as determined by testing manufacturers' standard assemblies similar to

 those indicated for this Project, by a qualified testing and inspecting agency.

1. Structural Performance: Provide tile wall panels capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated, based on testing according to ICC-Evaluation IBC ESR 3793 ASTM E 330, ASTM E331 and ASTM E547:

 1. Wind Loads: Determine loads based on the following minimum design wind

Pressures; Per Miami-Dade NOA Compliance 89psf, acting inward and outward.

 2. Deflection Limits: Engineer tile wall panels to withstand test pressures with

 deflection no greater than 1/300 of the span and no evidence of material failure, structural distress, or permanent deformation exceeding 0.2 percent of

 the clear span.

 a. Test Pressures: 150 percent of inward and outward wind-load design

 pressures.

 C. Thermal Movements: Provide tile wall panels that allow for noiseless thermal

 movements resulting from the following range in ambient temperatures and that

 prevent buckling, opening of joints, overstressing of components, failure of joint

 sealants, failure of connections, and other detrimental effects:

1. Surface Temperature Range: Minus 20 to plus 180 degrees F.

**2.2. TILE WALL PANELS, CR-1**

1. Tile Wall Panels: Provide porcelain tile wall panels complying with the following:
2. Basis-of-Design:
	1. TerraCORE by Fiandre

www.terracorepanels.com, 214-749-0999

1. Series:
2. Color(s):
3. Nominal Tile Size(s):
4. Tile Thickness: [6mm]; [8mm]; [10mm]; [12mm]
5. Anchoring System: [GHS Concealed]; [GHV Visible]

**2.3. METAL FRAMING**

1. Steel Framing: Refer to Division 05 Section, "Cold Formed Metal Framing".

B. Miscellaneous Metal Sub-framing and Furring: ASTM C 645, cold-formed, metallic

 Coated steel sheet, ASTM A 653/A 653M, G90 coating designation or

 ASTM A 792/A 792M, Class AZ50 aluminum-zinc-alloy coating designation unless

 otherwise indicated. Provide manufacturer's standard sections as required for

 support and alignment of metal panel system.

1. Aluminum Anchoring System: Manufacturer's standard extruded aluminum

ASTM B221, Alloy 6060-T6.

1. Color: Black.

2. Shapes:

a. T-Profiles and/or Tubular Profiles - vertical uprights.

b. L-Brackets – Primary and Secondary mounting brackets, PDM Gaskets

c. C-Rails - horizontal pieces.

d. C-Brackets.

e. 8-10mm thick slabs: 7mm deep Keil mechanical undercut concealed anchors.

f. Hat Channels to be used with 16” O/C cold form metal studs.

h. Rivets.

1. Panel Accessories: Provide components required for a complete panel system.

F. Fasteners: Use factory-supplied and/or recommended fasteners:

1. GHS System - Concealed Keil mechanical Undercut anchors.
2. Black Painted Head Stainless Steel Rivets 4.8 x12/14mm.

**PART 3 – EXECUTION**

**3.1. EXAMINATION**

A. Examine substrates for compliance with requirements for installation tolerances and

 other conditions affecting performance of panels. Proceed with installation only after

 unsatisfactory conditions have been corrected.

1. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal wall panel manufacturer.
2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal wall panel manufacturer.
3. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
4. Examine roughing-in for components and systems penetrating metal panels to verify

 actual locations of penetrations relative to seam locations of metal panels before

 installation.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2. PREPARATION**

A. Miscellaneous Supports: Install sub-framing, furring, and other miscellaneous panel

 support members and anchorages according to ASTM C 754 and metal panel

 manufacturer's written recommendations.

**3.3. INSTALLATION**

A. General: Install tile panels according to manufacturer's written instructions in

 orientation, sizes, and locations indicated. Install panel’s perpendicular to supports

 unless otherwise indicated. Anchor panels and other components of the work

 securely in place, with provisions for thermal and structural movement.

1. Plumb substrates receiving tile panels.

2. Flash and seal tile panels at perimeter of all openings. Fasten with self-tapping

 screws. Do not begin installation until air- or water-resistive barriers and

 flashings that will be concealed by tile panels are installed.

1. Rain-screen-Principle Installation: Install using manufacturer's standard assembly with vertical channel that provides support and secondary drainage assembly, draining at base of wall. Notch vertical channel to receive support pins. Install vertical channels supported by channel brackets or adjuster angles and at locations, spacing’s, and with fasteners recommended by manufacturer. Attach tile panels according to manufacturer's written directions. Leave horizontal and vertical joints with open reveal.
2. Install wall panels to allow individual panels to be installed and removed without disturbing adjacent panels.
3. Do not apply sealants to joints unless otherwise indicated.
4. Flashing and Trim: Comply with performance requirements, manufacturer's written

 installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide

 concealed fasteners where possible and set units true to line and level as indicated.

1. Install work with laps, joints, and seams that are permanently watertight.
2. Install exposed flashing and trim that is without buckling and tool marks and

that is true to line and levels indicated, with exposed edges folded back to form hems.

1. Install sheet metal flashing and trim to fit substrates and to result in

waterproof performance.

3. Expansion Provisions: Provide for thermal expansion of exposed flashing and

 trim. Space movement joints at a maximum of 10 feet with no joints allowed

 within 24 inches of corner or intersection. Where lapped expansion provisions

 cannot be used or would not be sufficiently waterproof, form expansion joints

 of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic

 sealant (concealed within joints).

**3.4. ERECTION TOLERANCES**

1. Installation Tolerances: Align tile wall panel units within installed tolerance of 1/4 inch in 20 feet, non-accumulative, on level, plumb, and location lines as indicated, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

**3.5. ADJUSTING AND CLEANING**

1. Remove damaged, improperly installed, or otherwise defective panels materials and

 replace with new materials complying with specified requirements.

1. Clean finished surfaces according to panels manufacturer's written instructions and

 maintain in a clean condition during construction.