SECTION 074246 – TERRA COTTA RAINSCREEN CLADDING

SPECIFICATIONS FOR SANNINI IMPRUNETA TERRACOTTA TILES AND RELATED WORK

HIGHLIGHTED SECTIONS REQUIRE PROJECT SPECIFIC INPUT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Terra cotta Rainscreen assembly consisting of terra cotta clay tiles, structural support system, clips, fasteners, and related accessories.

C. Engineered anchorage to the building structure and terra cotta tile framing support system.

1.2 RELATED SECTIONS

A. Section 033000 - Cast-In-Place Concrete

B. Section 042200 - Concrete Unit Masonry

C. Section 054000 - Cold-Formed Metal Framing

D. Section 061600 – Sheathing

E. Section 072100 – Thermal Insulation

F. Section 072500 – Weather Barriers

H. Section 076200 – Sheet Metal Flashing and Trim

I. Section 09250 – Gypsum Board

1.3 REFERENCES

1. American Society for Testing and Materials (ASTM) Publications:

 1. ASTM C67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile; 2013a.

 2. ASTM C484 - Standard Test Method for Thermal Shock Resistance of Glazed Ceramic Tile; 1999(2009). Applicable for glazed tiles only.

 3. ASTM C126 - Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units. Applicable for glazed tiles only.

 4. ASTM C99 – Test Method for Modulus Rupture of Dimension Stone.

 5. ASTM C666 – Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing in Water.

 6. ASTM C880 – Standard Test Method for Flexural Strength of Dimensional Stone.

 7. ASTM C1354 – Standard Test Method for Strength of Individual Stone Anchorages in Dimension Stone.

1. European Standards:

 1, UNI EN12372 – Determination of Flexural Strength Under Concentrated load.

 2. UNI EN12371 – Determination of Frost Resistance.

 3. UNI EN 13755 – Determination of Water Absorption at Atmospheric Pressure.

1.4 DESIGN/ PERFORMANCE REQUIREMENTS

A. Design and install terracotta tiles and structural support system to:

1. Withstand design loads as required by applicable codes for the project location.

2. Comply with seismic requirements as required by applicable building code.

3. Withstand building seismic and thermal movements, including deflections, temperature change, deformation, tile breakage, or undue stress on system fasteners and structural support systems.

4. Provide in conjunction with exterior wall substrate, thermal insulation, and waterproofing barrier a weathertight wall assembly following ventilated rainscreen principle.

1. Delegated Design: Engineering analytical data and calculations, sufficient to demonstrate compliance with design and performance requirements indicated, signed, and sealed by the qualified professional engineer licensed in the state of the project location and responsible for their preparation.

1.5 ACTION SUBMITTALS

A. Product Data: Manufacturer's latest published literature describing each product selection.

B. Shop Drawings: Submit drawings for a complete terra cotta rainscreen system

1. Include plans, elevations, sections, and attachment details. Show and include adjacent work and interface between terra cotta rainscreen system and adjacent work by others.

a. Distinguish among factory, shop, and field assembled work.

b. Provide profiles and dimensions for tiles, unique shapes, and closure/trim pieces.

2. Include details of each vertical and horizontal intersection of each terra cotta rainscreen assembly with other systems and materials, showing the following:

a. Anchorage to the building structure.

b. Terra cotta clay tile cladding.

c. flashing and drainage.

d. Insulation.

C. Professional Engineer's Analysis: Submit structural calculations showing compliance with design and performance requirements specified in 1.4.

D. Samples:

1. Provide a minimum 12" in length terra cotta panel sample in selected color and surface finish.

2. Provide a minimum of 12" In length section of any exposed anchoring system material.

1.6 INFORMATIONAL SUBMITTALS

A.Warranties: Provide sample warranty documents as required in specification article 1.11 for review by Architect.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For terra cotta rainscreen assembly to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Terra cotta clay tile and mechanical support system manufacturers are experienced in designing and manufacturing terra cotta rainscreen assemblies.

B. Installer Qualifications: Company experienced installing exterior wall cladding systems and acceptable to terra cotta cladding supplier.

C. Pre-Installation Inspection: Installer to inspect the site to confirm substrate and work by others is correct for installing the rainscreen system. If adverse conditions are discovered, the Installer to notify the Architect and construction manager in writing.

1.9 MOCK-UP

A. Following Section 01400 – Quality Control, prepare a separate mock-up illustrating wall substrate with attached terra cotta rainscreen assembly. Mock-up shall be the same as that which will be provided in the final work.

B. Approved mock-up may remain as part of the completed work.

1.10 HANDLING

A. Package terra cotta tile for protection during transportation and handling.

B. Store terra cotta away from other materials that may stain, crack or otherwise damage the panels

C. Protect the system from other trades work once the installation is complete.

1.11 WARRANTY

A. Manufacturer's Warranty: Warrant that the terra cotta tiles and mechanical substructure shall be free of material defects for five (5) years. Failure or defects are to be determined by representatives of the manufacture.

B. Installer's Warranty: Installer's 2-year warranty covering rainscreen system installation.

C. Warranties shall commence on the date of substantial completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. acceptable manufacturers:

1. Sannini Impruneta: Located at Provinciale Chiantigiana, 135 50023 Impruneta FIRENZE; Tel: 39 055 207076; Email: info@sannini.it;

US Representative; Lopresti Cotto Solutions; Tel: (609) 356-4163; email info@lopresticottosolutions.com

2. Substitutions: Not permitted

3. Request for substitutions will be considered following the provision of Section 01 60 00 – Product requirements.

2.2 TERRA COTTA CLAY TILES

A. Extruded terra cotta clay tiles

: As selected from manufacturers full range of sizes

2. Height: As selected from manufactures full range of sizes

3. Thickness: As selected from manufactures full range of sizes

4. Profile(s): Provide the following profiles as indicated on the drawings:

a. [xxxxxxx]

4. Glaze: Provide the following glaze as indicated on the drawings:

a. Glaze: [xxxxxxx]

5. surface finish: Provide the following glaze as indicated on the drawings:

 b. Finish: [xxxxxxx]

B. Terra cotta Clay Tile Testing:

 Provide material test reports to demonstrate the performance of clay products.

1. Project-specific testing as required – Custom shapes and profiles are available.

2.3 STRUCTURAL SUPPORT SYSTEM

A. Aluminum, galvanized, or stainless-steel support system with tile clips to support terra cotta clay tiles and create back ventilated drain cavity.

1. System designed to accommodate thermal movement.

2. System designed for the possibility of substituting faulty or damaged elements in the life cycle of the cavity wall

3. Panel fasteners to be concealed.

B. Fasteners:

1. Provide fasteners as required by engineering for specified substrates and project conditions.

2.4 FABRICATION

A. Fabricate structural support system for terracotta clay tiles and hardware in conformance with approved shop drawings.

B. Manufacture terra cotta clay tiles to the sizes, profiles, colors, and textures per manufacturer's standards and approved project samples.

PART 3 EXECUTION

3.1 EXAMINATION

A. Installer of terra cotta rainscreen system to examine substrates, areas, and conditions for compliance with installation tolerances, terracotta clay tile rainscreen assembly supports, and other conditions affecting the final installation of the system.

B. Notify Architect and construction manager in writing if any adverse site conditions exist.

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

3.2 INSTALLATION

A. Install terra cotta tiles level, plumb, and with uniform spacing in conformance with the manufacture's installation documents and approved shop drawings

B. Attached support framing with engineered fasteners and anchors to accomplish performance requirements at spacing provided by the manufacturer and illustrated in shop drawings.

C. Install components so that they are not twisted, out of plumb, or exceed the manufacturer's specified tolerances in their final location and position.

D. Isolate dissimilar materials with plastic shims, paint, or membrane.

E. Layout work to avoid or minimize cutting tiles in the field.

3.3 ERECTION TOLERANCES

A. Installation Tolerances: Accurately align and locate the support system and terra cotta components to column lines, control lines, and floor elevations. Shim and align terra cotta tiles to provide the below tolerances:

 1. Deviations from the level or plumb alignment: ¼" over 20' maximum, non-cumulative

 2. Offset of adjoining faces and alignment of matching profiles: 1/8" maximum

3.4 CLEANING

A. Clean finished surfaces as recommended by the manufacturer.

B. Provide final protection and maintain conditions in a manner acceptable to manufacturer and Installer that ensure terra cotta rainscreen system is without damage or deterioration at the time of Substantial Completion.

C. Replace any components or tiles that have been broken, chipped, stained, or otherwise damaged.

END OF SECTION