NeaCera® Product Specification

SECTION 074300 TERRA-COTTA WALL PANELS

PART 1 – GENERAL

1.1 SUMMARY

Work Included: The Work of this Section shall include but not be limited to the following:

1. Extruded Solid Clay (Terra-cotta) Panels.
2. Aluminum Support Profiles and Joint Inserts.
3. Aluminum Horizontal Sub-construction.
4. Aluminum Wall Brackets, if required.
5. Aluminum Extruded Trim and related accessories.
6. Stainless Steel Anchors and Fasteners.

1.2 SYSTEM DESCRIPTION

A. NeaCera® Terra-cotta Rainscreen Panels featuring *Lift & Lock* Technology with integrated aluminum Support Profiles with mated Joint Inserts, horizontal sub-construction, and wall brackets as required. The Terra-cotta panels are extruded solid wall design with rear reinforcing ribs that also serve as the panel hanging mechanism. The Support Profiles are fastened to a horizontal sub-construction that is anchored to the exterior wall assembly. The Support Profiles include a Joint Insert to align the panels and resist movement. The sub-construction can either be fixed or adjustable to accommodate panelized or irregular wall construction.

B. All Terra-cotta panels shall be fired to 2,192 °F (1,200 °C) to ensure high strength and durability.

C. Lifetime “Graffiti Protection” is included in all NeaCera® Panels.

D. The wall assembly shall be installed to allow for the following:
   1. Movements within the structure
   2. To fit within the space allotted as shown on the plans.

E. The panels shall have a Joint Insert between each horizontally adjacent panel that will perform the following functions:
   1. Align panels horizontally and maintain a uniform joint dimension.
   2. Prevent the panels from rattling in gusty wind conditions.
   3. Provide a drainage channel for condensation and bulk water infiltration.

F. Condensation: The wall assembly shall accommodate positive drainage for moisture entering or condensation occurring within panel system.

G. Substitutions: The plans indicate the panel sizes, style, finish and dimensional requirements of the exterior wall assembly required. With no less than 14 days prior to the bid, terra-cotta rainscreen components by other manufacturers may be considered, provided deviations in system weight, dimensions and profiles are minor and do not change the design concept as solely judged by the Architect.

1.3 PERFORMANCE CRITERIA

A. General: Fabricate and install components (specifically related to the system described herein) so that the completed exterior wall assembly will withstand live loads, the inward and outward pressures specified.
   1. The wall assembly shall have a design load of positive and negative pressures up to 40 psf.
   2. Deflections within the assembly are to be limited to L/240 or less when tested in accordance with ASTM E330 for positive and negative pressures and as required to prevent cracking or damage to panel facing.
   3. The exterior wall assembly shall be installed to meet all specified performance requirements of ASTM E330. Where performance requirements result in more than one load or pressure, the load or pressure that produces the greatest stress shall govern.
   4. All horizontal sub-construction components, bearing constructions, reinforcements, etc., must be determined within a structural evaluation suited to the respective building project and taking into consideration the building height, exposure and the wind loads.

B. Movement: Fabricate and install components to withstand building and thermal movements including loading deflections, temperature change without buckling, distortion, joint failure, or undue stress on assembly components, anchors or permanent deformation to outward force. Provide for thermal movement over an ambient temperature range of 120 deg. F. and a surface temperature range of 180 deg. F.

1.4 SUBMITTALS

A. Shop Drawings: Complete Shop Drawings shall be submitted for approval prior to fabrication, including elevations and sections of each condition. Such drawings shall also include metal thickness, finish, methods of installation, anchorage, and joints.

B. Product Data: The latest published literature describing each product selection.

C. Samples: Submit 3 sets of the following samples in the selected finish and color for Architectural approval.
   1. Each Panel Finish, color and style required, at least 24 square inches.
   2. Support Profile sample of each type of aluminum Support Profile and Joint Insert.

1.5 QUALITY ASSURANCE

A. Performance Test Standards: Provide exterior wall assembly that has been tested and certified to the following test standards:
   ASTM E283: Air Infiltration
   ASTM E330: Uniform Load Deflection Test Pressure
   ASTM E331: Water Resistance Test Pressure
   ASTM C 67-07a – Standard test for Sampling and Testing Brick and Structural Clay Tile
   ASTM E136: Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degree C
   AAMA 501.1: Dynamic Water Resistance
   AAMA 501.6: Dynamic Seismic Drift Test
   MEA 85-08M: NYC Department of Buildings Approval

B. Dimensional Tolerances – NeaCera® Panels (all in accordance with DIN EN ISO 10545-2):
   1. Length 400mm -1600mm -1.0mm

2. Height 150mm – 400mm +/- 2.0mm
3. Thickness 26mm +/- 1.5mm
4. Evenness Max 0.7% of Height
5. Top Edge Bending Max 0.25%
6. Butt Edge Bending Max 0.25%
7. Right Angle Max 2.0mm

C. Structural: Provide components that have been tested in accordance with ASTM E330 at a design pressure of 40 psf without permanent deformation or failures of structural members.

D. Qualifications: Terra-cotta rainscreen panels shall be manufactured by a factory experienced in manufacturing products that are similar to those indicated for this project and has a record of successful in-service performance. The factory shall be ISO 9001 and ISO 14001 certified.

E. Qualifications of Installers:
1. The cladding installer shall have a minimum of 3 years experience in the installation of exterior wall assemblies.
2. For actual installation of cladding, use only competent and skilled mechanics completely familiar with the product and the current recommended methods of installation.

F. Source Responsibility:
1. The NeaCera® Terra-cotta Rainscreen Panels, Support Profiles with mated Joint Inserts shall be provided by:

Avenere Cladding LLC, or its independent sub-dealers
2801 Sisson Street
Baltimore, MD 21211-2902
866-388-8833
www.avenerecladding.com

G. Mock-Up: At the Owner's expense, a completely assembled, typical wall area installed with all related accessories will be provided designed to verify the performance criteria, and represent the design as shown on the architectural drawings.
1. Extent of mock-up shall be representative of what will be provided in the final work.
2. Mock-up shall be installed simulating actual construction conditions, including actual structural supports and connections. Use means, methods and techniques proposed for final installation.
3. Locate mock-up in location as directed by the Architect.
4. Personnel assembling mock-up shall be the same personnel that will perform the actual final units of work at the project site.

1.6 PRE-INSTALLATION COORDINATION

A. Pre-Installation Conference: Prior to start of cladding work, and at the General Contractor's direction, meet at site and review installation procedures and coordinate with other work. Meeting shall include the General Contractor, Architect, Installer and subcontractors whose work must be coordinated with cladding work.

B. Installer shall examine parts of the supporting structure and conditions under which cladding work is to be installed.

C. Notify Contractor in writing of conditions found to be detrimental to proper and timely completion of work.

D. Do not proceed until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

1.7 SITE CONDITIONS

Provide adequate protection of materials and work completed or in progress.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver exterior wall system components packaged to adequately protect materials from damage during shipment.

B. Protect components from adverse job conditions prior to installation.

C. Protect components from other trades after installation.

D. Stack exterior wall assembly components on platforms or pallets, covered with tarpaulins or other suitable ventilated covering. Store components so that water accumulations will drain freely.
   1. Do not store exterior wall assembly components in contact with other materials that might cause staining, surface damage, or other deleterious effect.

1.9 LIMITED WARRANTY

A. The Terra-cotta panels of this Section shall be free of manufacturing defects for a period of up to 30 years from the date of delivery, in accordance with the standard product warranty issued for the Project.

B. The installation portion of this Section to be free of workmanship defects for a period of 1 year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 EXTERIOR WALL SYSTEMS

A. Subject to compliance with requirements, the exterior wall panels that may be incorporated in the work include the following: NeaCera® Terra-cotta Rainscreen Panels

Avenere Cladding LLC, or its independent sub-dealers
2801 Sisson Street
Baltimore, MD 21211-2902
866-388-8833
www.avenerecladding.com

2.2 MATERIALS

A. Solid Clay (Terra-cotta) NeaCera® Panel Units complying with the following requirements:
   1. Finish: (*insert desired panel finish* – Matt, Satin, Glossy, Glazed or Custom)
   2. Color: *(insert desired color)*
   3. Style: (*insert desired panel style* – Flat-Classic, Grooved, Pilaster, Vented, Striped, Wavy & Random Ridged)
   4. Size: *(insert typical panel size – height & length)*
   5. Thickness: 26mm (nom. 1") with a single-wall design;
   6. Additional panels in an amount between 3% & 5% are recommended to avoid installation interruptions due to breakage or field conditions.

B. ADS 55mm Support Profiles:
   1. Supplied in accordance with the latest recommendations to maintain a water-resistant installation.
   2. No sealants, gaskets or other materials that can deteriorate over time or may be flammable may be incorporated into the assembly.
   3. The Joint Inserts of the Adaptive System (ADS) will be black unless otherwise specified (other colors available upon request).
   4. Panels must be capable of being installed in a non-sequential, *Lift & Lock* sequence.
   5. The removal or replacement of any panels, particularly in the middle sections, must be possible using simple methods not requiring special tools and without having to remove surrounding panels. Joint Inserts must have pull-down Security Tabs to lock lower panels in place to prevent unwarranted removal.
   6. The Support Profiles must be fastened securely to the horizontal sub-construction in order to maintain structural integrity and performance.
   7. All ADS Support Profiles and Joint Inserts shall be constructed of aluminum.

C. I- Frame™ or Sub-Girt Sub-Construction
   1. Provide (insert desired depth: 1", 2", or 3") continuous aluminum I-Frames or Sub-Girt as shown on plans.
   2. Securely fasten horizontal sub-construction to structure using specified stainless steel fasteners.
   3. Locate sub-construction at 24" o.c. horizontally to support exterior insulation when specified.

D. ADS Bracket and Horizontal Sub-girt, (Optional Alternate to I-Frame or Sub-Girt Sub-Construction)
   1. Securely fasten ADS Bracket to structure using specified stainless steel fasteners.
   2. The horizontal sub-girts must be fastened to the ADS Brackets in order to maintain structural integrity and performance.
   3. ADS Brackets will allow adjustment up to +/- one inch in the overall system depth.

E. Fasteners:
   1. Supplied in accordance with latest manufacturers product recommendations to meet load requirements specified.
   2. Must be stainless steel for compatibility purposes.

PART 3 - EXECUTION

3.1 PREPARATION

A. Establish lines, level and shim as required.

B. Do not install broken, chipped or cracked panels.

3.2 INSTALLATION

A. Installation shall be in accordance with the latest NeaCera Panel Installation Guide, Field Use Shop Drawings and any written amendments by Supplier**.**

B. Install sufficient anchorage devices to securely fasten sub-construction to building, and Support Profiles to sub-construction. All fasteners to be concealed. Install components to allow adequate clearances around perimeter and to allow for thermal movement. Apply coat of bituminous paint or other isolation membrane on concealed aluminum surfaces to be in contact with uncoated steel, cementitious or dissimilar materials.

C. Install Joint Inserts into Support Profiles and then *Lift & Lock* Terra-cotta panels onto Support Profiles.
   1. Place Terra-cotta panel units in accordance with lines and levels indicated, in strict accordance with latest product instructions.
   2. Care should be taken to prevent damage to Terra-cotta panels.
   3. Turn down Security Tabs on Joint Inserts to lock the panels as designated by the architect.
   4. Install system to allow adequate clearances around perimeter and to enable proper installation and allow for thermal movement.

D. Ensure assembly is plumb, level and free of twist; maintain dimensional tolerances and alignment with adjacent work.

E. Allow moisture entering joints and condensation occurring within cavity to drain to exterior.

F. Set Terra-cotta panels in stack bond unless otherwise indicated.

G. Tolerance: Accurately align and locate components to column lines and floor levels; adjust work to conform to following tolerances.
   1. Plumb: 1/8” in 10’-0”; ¼” in 20’-0”; non-cumulative.
   2. Level: 1/8” in 10’-0”; ¼” in 20’-0”; non-cumulative.
   3. Alignment: limit offset to 1/8” where surfaces are flush or less than ½” out of flush, and separated by less than 2” (by reveal or protruding work); otherwise limit offsets to 1/8”.
   4. Location: 3/8” maximum deviation from measured theoretical location (any member, and location).

H. Built-In Work:
   1. As work progresses, build in anchor bolts, flashing and other items supplied by other trades.
   2. Install items plumb and true.
   3. Do not build in organic materials subject to rot or deterioration.

H. Cutting: When field cutting is undertaken, care shall be exercised to ensure that burrs do not remain on exposed surfaces.

3.3 CLEANING

A. Clean soiled surfaces using materials that will not harm Terra-cotta panels or adjacent materials.

B. Consult Terra-cotta panel supplier for acceptable cleaners. Use non-metallic tools in cleaning operations.

C. Upon completion of installation, remove protective coatings or coverings and clean aluminum surfaces, exercising care to avoid damage of finish.

D. Remove dirt or other foreign substances from surfaces.

E. Remove and replace Terra-cotta panels that are broken, chipped, cracked, abraded or damaged during construction period. Reinstall in accordance with the latest product instructions.

END OF SECTION