ARCHITECTURAL BUILDING PANELS

** NOTE TO SPECIFIER ** Petrarch; fiberglass reinforced composite panels for exterior and interior use.

SECTION 07 42 00 MasterFormat® 2011

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Section 07 42 43 - Composite Wall Panels.

B. Moldings.

C. Fasteners and adhesives.

1.2 RELATED SECTIONS

A. Section 05 40 00 - Cold Formed Metal Framing: Structural stud backing.

B. Section 06 10 00 - Rough Carpentry: Structural stud backing.

C. Section 07 21 00 - Thermal Insulation.

D. Section 07 92 00 - Joint Sealants.

E. Section 09 21 16 - Gypsum Board Assemblies: Gypsum sheathing.

1.3 REFERENCES

A. ASTM C 177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.

B. ASTM D 256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.

C. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.

D. ASTM D 785 - Standard Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials.

E. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

F. ASTM D 792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.

G. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

H. ASTM 696 – Thermal Expansion

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
Preparation instructions and recommendations.
Storage and handling requirements and recommendations.
Installation methods.

C. Shop Drawings: Include elevations and detail sections of installation. Include cutting and setting drawings indicating sizes, dimensions, sections, and profiles of panels; arrangements and provisions for jointing, supporting, anchoring, and bonding panels; and details showing relationship with, attachment to, and reception of related work. Include large-scale details of each system component, anchorage, and fastening device.

D. Selection Samples: Architects selection from full range of color and texture combinations.

E. Verification Samples: For each panel specified, two samples, minimum size 3-1/2 inches square, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Provide products by a manufacturer with experience completing at least five projects of the size, scope and quality required by this project within the last five years. Provide all composite architectural panels by a single manufacturer.

B. Installer Qualifications: Not less than three years of successful experience in completing exterior cladding systems similar in material and scope to this project.

C. Mock-Up: Provide a mock-up for evaluation of installation techniques and finished appearance.
Finish areas designated by Architect.
Do not proceed with remaining work until workmanship and overall appearance are approved by Architect.
Refinish mock-up area as required to produce acceptable work.
Approved mock-up may be incorporated into the completed work.

1.6 PRE-INSTALLATION MEETING

A. For all installation systems, convene meeting to review manufacturer’s recommended procedure no less than one week before panel installation is scheduled to begin. Assure attendance by representatives of Architect, Contractor, installer, and panel manufacturer’s representative.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver panels in crates on wood pallets, interwoven with protective paper and wrapped in plastic sheets.

B. Store panels flat in original shipping crates or on wood pallets under protective cover until needed for installation. Ventilate coverings to avoid condensation. Elevate above grade on level blocking to avoid standing water.

C. Protect panels from scuffing during handling, and apply manufacturer's recommended remedial treatment immediately if panels are soiled or scratched. Carry panels on edge and handle carefully to avoid damage to surfaces and corner.

1.8 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Comply with manufacturer's project review requirements and notification procedures to assure qualification for warranty.

C. See Section 01 78 36 - Provide manufacturer's standard 10-year warranty for non-load bearing structural integrity of panels.

1.9 Extra Materials

A. See Section 01 60 00 – Product Requirements, for additional provisions.

B. Provide extra material as recommended by the architect and or owner.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer of Petrarch Architectural Panels: Omnis Panels, Inc; 22 E. Chicago Avenue, Suite 210; Naperville, IL 60540. ASD. Tel: (800) 450-6099 or (630) 355-4040. Fax: (630) 355-4995. Email: info@omnis-panels.com. Website: www.omnis-panels.com.

B. Manufacturer approved local distributor or local representative: (To be provided to the specifier by Omnis Panels, Inc.)

C. Substitutions: Not permitted.

D. Requests for substitutions will be considered in accordance with provisions of Section 01 25 00.

2.2 COMPOSITE ARCHITECTURAL PANELS

A. Petrarch Panels: 5/16 inch thick composite sheets comprising natural slate and/or stone granules or powder and/or calcium carbonate granules or powder, polyester resin, glass fiber, pigments, and fire retardant, with homogeneous color throughout.
Weight: 3.2 lb/sq ft.
Width: 47-3/4 inches.
Length: 95-3/4 inches.
Length: 119-3/4 inches.
Density: 2.24, per ASTM D 792.
Modulus of Rupture: 5,690 psi (39.2 MPa), when tested in accordance with ASTM D 790 (ASTM D 790M).
Tensile Strength: 2960 psi (20.4 MPa), when tested in accordance with ASTM D 638.
Thermal Conductivity: 4.862 BTU-in/hr sq ft (100.9 W/m K), when tested in accordance with ASTM C 177.
Izod Impact: 0.49 ft-lb/in (0.009 J/m) of notch, when tested in accordance with ASTM D 256.
Hardness Barcol: 64, when tested in accordance with ASTM D 785.
Flame Spread: 15, when tested in accordance with ASTM E 84.
Fuel Contribution: 0, when tested in accordance with ASTM E 84.
Moisture Absorption: Maximum 0.2 percent by weight after 24 hours of immersion.

Biological Resistance: Immune to insect and vermin attack; inhibits mold growth.
Chemical Resistance: Impervious to most acid and organic solvents.

B. Petrarch Panels: 7/16 inch thick composite sheets comprising natural slate and/or stone granules or powder and/or calcium carbonate granules or powder, polyester resin, glass fiber, pigments, and fire retardant, with homogeneous color throughout.
Weight: 4.5 lb/sq ft.
Width: 47-3/4 inches.
Length: 95-3/4 inches.
Length: 119-3/4 inches.
Density: 2.27, per ASTM D 792.
Modulus of Rupture: 5850 psi (40.3 MPa), when tested in accordance with ASTM D 790 (ASTM D 790M).
Tensile Strength: 2880 psi (19.8 MPa), when tested in accordance with ASTM D 638.
Thermal Conductivity: 5.822 BTU-in/hr sq ft (120.8 W/m K), when tested in accordance with ASTM C 177.
Izod Impact: 0.43 ft-lb/in (0.008 J/m) of notch, when tested in accordance with ASTM D 256.
Hardness Barcol: 64, when tested in accordance with ASTM D 785.
Flame Spread: 15, when tested in accordance with ASTM E 84.
Fuel Contribution: 0, when tested in accordance with ASTM E 84.
Moisture Absorption: Maximum 0.2 percent by weight after 24 hours of immersion.
Biological Resistance: Immune to insect and vermin attack; inhibits mold growth.
Chemical Resistance: Impervious to most acid and organic solvents.

C. Manufacturing Tolerances:
Sheet size tolerance: Plus or minus 1/8 inch.
Thickness tolerance: Plus or minus 1/16 inch.
Riven textured surface: An additional plus or minus 1/16 inch.

D. Petrarch Panels Texture and Color:
Texture: Riven Slate.
Texture: Riven Slate Shot Blast.
Texture: Smooth.
Texture: Smooth Shot Blast.
Color: Jade, 001.
Color: Heather, 002.
Color: Graphite, 003.
Color: Light Stone, 009.
Color: Alabaster, 010.
Color: Parchment, 011.
Color: Limestone, 012.
Color: Pewter, 247.
Color: Aluminum, 672.
Color: Mocha, 022.
Color: Ash, 023.
Color: Salmon, 024.
Color: Rye, 025.
Color: Dover, 026.
Color: Russet, 598.
Color: Dorset, 519.
Color: Terracotta Red, 639.

2.3 ACCESSORIES

A. Structural Silicone Setting System:
Aluminum Bearing Plates: 80% recycled 6063-T5 alloy, 0.125 in thickness, Clear Anodized.
Bearing Plate Fasteners: No. 8 x 1-1/2 inch, pan head, Stainless Steel screws.
Structural Silicone: One-component structural silicone glazing sealant; provide one of the following:
    a. Dow Corning 795.
    b. GE Spilpruf.
Cellular Foam Tape: Norton V2100 Series Thermal bond, P2106 Black, 3/16 inch by 1/2 inch.
Adhesion Promoter: Norton Tite-R-Bond (2287).
Setting Blocks: Silicone, 80-90 Shore A durometer, 1/8 by 11/32 by 4 inches.

B. Face Fastened System:
Metal Framing: No. 10 or No. 6 Phillips, flat head, Tek point 410 stainless steel screws in lengths to suit application.
Wood Framing: No. 10 or No. 6 Phillips, flat head, Type A point, 18/8 stainless steel sheet metal screws in lengths to suit application.
Diamond Countersink Tool to suit screw size.

C. Back Fastened System:
Mounting Brackets: 1/8 in aluminum flat or angled brackets.
Screws: M6 by 10 mm stainless steel hex head machine screws.
Brass Inserts: Fisher PA4 M6/7.5.

D. Rain Screen H & J System:
Aluminum Extrusion H and J Channels: 80% recycled 6063-T5 alloy, 0.125 in thickness, Black Anodized and sealed. Provides a one inch fixed cavity depth.
Aluminum Extrusion Vent Screen: 0.063 in thickness, Black Epoxy Primer.
No. 10 Phillips, flat head, self drilling, 410 stainless steel # 3 point, with corrosion resistant inorganic coating.

F. TEN66 Sub-Frame System:
Aluminum Vertical Wall Brackets: 80% recycled 6063-T5 alloy, 0.125 in thickness, Mill Finish or Clear Flashed Anodized. Single and Double with Insulator Pads.
Aluminum "T" or "L" Profile Rails: 0.093 in thickness, Mill Finish or Clear Flashed Anodized. Provides an adjustable cavity depth.
No. 10-16 x 3/4 Phillips, pan head, self drilling, 304 stainless steel for Wall Bracket to Rail fastening.
No. 12-14 5/16 Hex Washer HD 304 stainless steel for Wall Bracket to Building fastening.
TEN66 Omega / Zed System: 0.093 in thickness Aluminum Top Hat Section and "Z" Section. Provides a 1.57 inch fixed cavity depth.
TEN66 Back Fastened Clip & Rail System: Combines TEN66 Sub-Frame System with horizontal "C" Carrier Channel for secret fix. Panels are provided with factory fitted brackets. These brackets then hook onto the "C" Carrier Channel for smooth exterior appearance.

E. Weather Sealant: Silicone or Polyurethane sealant and bond breaker tape as specified in Section 07 92 00.

2.4 FABRICATION

A. Provide factory fabricated panels to the extent possible, conforming to the following:
Cut to custom sizes from manufacturer's standard sizes.
Pre-drill and countersink fastener holes.
Prepare special shapes and cutouts.
Polish, bevel, or miter edges, as required.
Prefabricate inside and outside corners.
Prepare inserts and brackets for back fastening system.
Bond insulating materials to panels.
Engrave as required.

B. Perform shop or site cutting using a saw equipped with a dry cut, diamond tipped blade. If using a portable or table saw, place finished side up. If using a moveable, portable skill saw, place finished side down. Clamp to saw bed before cutting. Radius cuts can be made using an abrasive jig saw blade with carbide chips. Remove sawdust from panel surface immediately.

C. If on-site drilling or countersinking is required, drill panels with a portable hand-held pistol drill equipped with a drill guide to assure 90 degree holes and a masonry drill bit suitable for drilling at speeds of 900 to 1200 rpm. Remove any sawdust from panel surface immediately.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Measure areas of installation prior to fabrication, to minimize out of square or unbalanced border conditions.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions. Proceed with panel installation only when substrate is completely dry.

3.3 INSTALLATION

A. Install in strict accordance with manufacturer's instructions. Make adequate provisions for thermal and structural movement.

B. Field Assembled Face Fastened System:
Locate edge fastener holes and space fasteners within limits established by panel manufacturer.
Install panels with joints over bond breaker tape, and seal with silicone or polyurethane joint sealer in accordance with requirements of Section 07 90 00.
Panels can be secured using a variety of exposed stainless steel fasteners or countersunk fasteners (patched with manufacturer's matching filler compound).

C. Structural Silicone Setting System:
Fasten aluminum bearing plates through sheathing directly to load bearing studs.
Apply continuous strips of double-faced, cellular foam tape as spacers and temporary adhesive.
Apply beads of structural silicone in a one-panel area, place panel on setting blocks at base, press panel into final position, and block in place until silicone achieves full cure.
Install weatherproofing joint sealer in accordance with requirements of Sec. 07 90 00.

D. Field Assembled Back Fastened System:
Locate and space back-mounted anchors for shop installation within limits established by panel manufacturer.
Fasten panel assemblies to back-up framing by means of specified screws at panel joints.
Install weatherproofing joint sealer in accordance with requirements of Sec. 07 90 00.

E. Field Assembled Rain Screen System:
Fasten aluminum H & J Channels through weather barrier sheathing directly to load bearing studs. Use vent screening at base as necessary.
Install panels to Channels by means of specified screws and space fasteners within limits established by panel manufacturer, according to dead weight and wind loading.
Panels can be secured using a variety of exposed stainless steel fasteners or countersunk fasteners (patched with manufacturer's matching filler compound). Stainless steel screws should have a corrosion resistant inorganic coating, like Dacroment, Magni or equivalent, to prevent galvanic corrosion between dissimilar metals.

F. Field Assembled TEN66 Sub-Frame System:
Fasten aluminum Wall Brackets at 90° ± 2° to the load bearing structure with plumb alignment. Insert vertical "T" and "L" Rails, as required, into the 'helping hand" grip and align by tapping rails in or out before securing them in place.
Install panels to Rails by means of specified screws and space fasteners within limits established by panel manufacturer, according to dead weight and wind loading. Wall Panels should never be secured to two adjacent rails across the 3/8" expansion gap.
Panels can be secured using a variety of exposed stainless steel fasteners.

3.4 CLEANING AND PROTECTION

A. Clean all panels of dirt, adhesive, and joint sealers, using detergents or solvents as appropriate and as recommended by the manufacturer.

B. Remove and replace any damaged panels and those that cannot be adequately cleaned.

C. Protect installed products until completion of project.

END OF SECTION