SECTION 09-84 10 – ARCHITECTURAL FINISH ACOUSTIC WALL PANELS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Decorative finished wall surfacing systems, installation components, and trim.

B. Related Documents: Drawings and general conditions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections apply to the work of this section.

C. Related Sections

Note: Delete any section below not relevant to this project; add others as required.

1. Section 01 35 00 - Special Environmental Requirements
2. Section 05 40 00 - Cold Formed Metal Framing
3. Section 06 01 00 - Lumber
4. Section 06 20 00 – Finish Carpentry
5. Section 06 40 00 – Architectural Woodwork
6. Section 09 21 16 - Gypsum Board Assemblies
7. Section 09 29 00 - Gypsum Board: Gypsum wallboard back-up
8. Section 09 81 13 – Acoustic Board Insulation
9. Section 09 81 16 – Acoustic Blanket Insulation
10. Section 12 30 00 – Manufactured Casework
11. Division 21 - Fire Suppression
12. Division 23 - Mechanical Diffusers, vents and other mechanical items
13. Division 26 - Electrical lights and other wall mounted electrical items

D. Alternates

1. Prior Approval: Proposed product substitutions may be submitted to the Architect no later than ten (10) working days prior to bid date. Substitutions will only be considered if submitted with complete product information, including acoustical data, and an 18” x 18” sample. Acceptance of substituted products is contingent on the Architect’s approval and substituted product’s compliance with all specified requirements of this section. Approved products will be set forth by Addenda to all bidders.

1.02 SUBMITTALS

A. Manufacturer's Product Data for specified products.

B. Comply with Section 013300 – Submittal Procedures.

C. Submit shop drawings, including details for all walls. Show overall layout with dimensions and details for penetrations and intersections with other materials or building components. Include profiles and product components, including anchorage and accessories.

D. Samples: Submit one (1) full size sample of each panel type and specified color and design for verification.

E. Product Data: Manufacturer’s technical data and installation instructions for each type of wall panel required.

F. Certifications: Certified test reports showing compliance with performance requirements specified.

G. LEED requirements: Refer to Section 01-8112 and Section 01-8113 for information regarding building reuse, recycled content, certified wood, indoor air quality, low emitting materials and required documentation.

H. Submit operation and maintenance data for installed products, including precautions against harmful cleaning materials and methods.

1.03 QUALITY ASSURANCE

A. Obtain all products in this section from a single supplier.

B. Installer: Installation shall be done by qualified Carpenters experienced in the installation of architectural woodwork. The firm must demonstrate successful experience installing materials of similar type and quality of those required for this project. The use of proper Carpentry tools and Techniques will be required for the installation. Handling, cutting and machining of the panels must be done with care to avoid marring the DI-NOC finish. A list of experienced installation integrators is available from 3M Architectural Markets Department, 651-737-1995 or John Olfelt, john.olfelt@mmm.com

C. Fire Performance Characteristics: Class A rating for board cores as tested by an independent and accredited testing facility. Test: ASTM E84. Flame Spread Index: 25 or less. Smoke Developed Index: 450 or less.

D. Coordination of Work: Installing contractor shall organize and conduct a pre-installation review coordinating other construction elements such as concealed components behind wall panels.

E. Applicable LEED Credits:

1. MR 4.1, 4.2 Materials Reuse Recycled Content
2. MR 5.1 Use of Regional Materials (depending on project location)
3. MR 6 Rapidly Renewable Materials
4. EQ 3.1, 3.2, 4.2 Indoor Air Quality
5. EQ 4.4 Low-Emitting Materials

F. Wall panels to be manufactured with no less than 75 percent recycled, post industrial wood fiber by weight

1.04 REFERENCES

A. Test Methods.

1. ASTM C423-09a: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method. .
2. ASTM E 795-05: Standard Practices for Mounting Test Specimens During Sound Absorption Tests
3. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials

B. AWI Quality Standards (Architectural Woodwork Institute)

C. BHMA (Builders Hardware Manufacturers Associations

1.05 MOCK UPS

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Store products in a clean, dry place, out of direct sunlight.

B. Store products protected from weather, temperature, and other harmful conditions.

C. Store products in a space where the ambient temperature and humidity conditions are being maintained at the levels indicated for the project when occupied for its intended use.

D. Handle products carefully to avoid chipping edges or damage to panel.

1.07 PROJECT /SITE CONDITIONS

A. Do not install wall panels until all wet work including taping, plastering, and floor finish is complete.

B. Environmental Limitations: Do not install until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

C. Permit wall panels to reach room temperature 50 to 86 degrees F and stabilized moisture content of 25% to 55% RH for at least 72 hours before installation per AWI standards.

D. After installation, protect finished surface until all construction is complete.

1.08 WARRANTY

A. Manufacturer's Warranty: Submit manufacturer's standard warranty document by authorized manufacturer per Section 01-7700 - Closeout Procedures.

B. Standard Product Warranty: See 3M™ Acoustic Wall Panel System featuring 3M™ DI-NOC™ Architectural Finishes Limited Warranty and Limited Remedy document.

1.09 EXTRA MATERIALS

A. Deliver extra materials as specified by the Architect. Confirm that panels can be stored in a dry space laid flat and climate controlled.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. 3M Company - Architectural Markets Department [AMD]
Website www.3MArchitecturalMarkets.com
Contact: John Olfelt
Project Manager, 3M AMD
Direct: (651) 733-9853
3M Center, Building 0220-07-W-07
St. Paul, MN 55144-1000, USA
General Info: 1-888-650-3497

B. Material Standard: 3M™ Acoustic Wall Panel System featuring 3M™ DI-NOC™ Architectural Finishes as manufactured by 3M Company.

2.02 PERFORATED DI-NOC ACOUSTIC WALL PANEL (EDIT OR REMOVE AS REQUIRED)

A. Surface finish and texture: 3M™ DI-NOC™ Architectural Finishes- Perforated. Specify from selection based on available designs from:
1. 3M™ DI-NOC™ Architectural Finishes WOODS
2. 3M™ DI-NOC™ Architectural Finishes TEXTURES

B. Grain direction (if any) shall be manufacturer’s standard (typically vertical), except as requested by specifier.

C. Hole Diameter- approximately 0.04 in (0.8mm)

D. Board Core
1. Textured Wood Fiber
2. 100% recycled wood fiber.
3. Fabricated with perforated DI-NOC on acoustic absorbing wood fiberboard. Acoustic absorbing backing material is optional.

4. Thickness: 3/4 inch (19mm) with 8.5 mil (0.212mm) Architectural Finish
5. Weight: 2 lbs/ sq. ft.

E. Accessories (Optional- Edit as required):
1. All trim specified shall be heavy weight extruded aluminum alloy, prefinished at the factory. Specifier to select one (or more) trim profile(s) and trim finish(es).
2. Optional edge banding with vinyl laminate in optional color
3. Trim Profile Options:
4. Trim Finishes (Specifier to select finish)
   a. Clear Satin Anodized Aluminum
   b. Black Satin Anodized Aluminum

F. Edge wrapping: (Option, but not required).

G. Size: Nominal 48 inch by 96 inch (Custom size as indicated on drawings).

H. Edge: Square (Custom as required).

I. Flame resistance: Class A rating for board core per ASTM E84:
1. Flame Spread Index: 25 or less.
2. Smoke Developed Index: 450 or less. Perforated DI-NOC Architectural Finishes Wall Panel.

J. NRC- Noise Reduction coefficient (Perforated Panel):
1. 0.75 NRC achieved with Type C Mount- (1" spacer filled with fiberglass board acoustic absorbing material,) per ASTM C423 and ASTM E795
2. 0.65 NRC achieved with Type D Mount (1" air gap behind wall panel with no additional acoustic absorbing material,) per ASTM C423 and ASTM E795

K. (Optional- Edit as Required): Sound Insulation: Acoustical foam or fiberglass recommended by manufacturer to obtain required NRC

L. (Optional- Edit as Required): Attachment System to be comprised of z-bar and z-clip type hardware. When using acoustic absorbing backing material,-z-bars are required to be mounted on furring strips (by others)

M. Abrasion resistance (JIS K7204) Taber® Abrasion.
1. CS-17 wheel, loading weight 1kg - 7,000 cycles with no wear through of surface finish.

N. Chemical and stain resistance: Resists mild alkalis, mild acids and salt. Resists many stains for up to 18 hours. Excellent water resistance, which does not include immersion.

2.03 DRILLED HOLE DI-NOC ACOUSTIC WALL PANEL (EDIT OR REMOVE AS REQUIRED)

A. Surface finish and texture: 3M™ DI-NOC™ Architectural Finishes- Drilled Hole. Specify from selection based on available designs from:
1. 3M™ DI-NOC™ Architectural Finishes WOODS
2. 3M™ DI-NOC™ Architectural Finishes TEXTURES

B. Grain direction (if any) shall be manufacturer's standard (typically vertical), except as requested by specifier.

C. Drilled Hole Diameter- approximately 0.24-.032 in (6-8 mm)

D. Drilled Hole Board Core (
1. Wood fiberboard with holes drilled after DI-NOC application.
2. Board core: Medium density 100% recycled wood fiberboard with optional Manufacturer's color match, solid color throughout, coordinating with the chosen surface finish.
3. Thickness and weight:
   a. 3/4 inch total thickness, (including architectural finish) or

4. Weight
    a. 2-3/4 lbs/sq ft

E. Accessories (Optional- Edit as required):
1. All trim specified shall be heavy weight extruded aluminum alloy, prefinished at the factory. Specifier to select one (or more) trim profile(s) and trim finish(es).
2. Trim Profile Options:
3. Trim Finishes (Specifier to select finish)
    a. Clear Satin Anodized Aluminum
    b. Black Satin Anodized Aluminum

F. Edge wrapping: (Option, but not required).

G. Size: Nominal 48 inch by 96 inch (Custom size as indicated on drawings).

H. Edge: Square (Custom as required).

I. Flame resistance: Class A rating for board core per ASTM E84:
1. Flame Spread Index: 25 or less.
2. Smoke Developed Index: 450 or less.

J. NRC- Noise Reduction Coefficient (Drilled Hole Panels)
1. 0.70 NRC achieved with Type C Mount- (Type C mount 1" spacer filled with fiberglass board acoustic absorbing material, per ASTM C423 and ASTM E795

K. Sound Insulation: 1" Acoustical fiberglass required by manufacturer to obtain NRC of 0.70 as noted above.

L. Abrasion resistance (JIS K7204) Taber® Abrasion.
1. CS-17 wheel, loading weight 1kg - 7,000 cycles with no wear through of surface finish.

M. Chemical and stain resistance: Resists mild alkalis, mild acids and salt. Resists many stains for up to 18 hours. Excellent water resistance, which does not include immersion.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Inspect installation area and conditions under which work is to be performed for compliance with all manufacturer's environmental recommendations. All wet work in the installation area must be complete, cured and dry prior to installation. Work above ceilings shall be complete, inspected and accepted before ceiling work begins.

B. Do not proceed until all unsatisfactory conditions have been corrected.

C. Examine substrate(s) for compliance with requirements for non-porous, smooth surface and other conditions affecting the performance of work in this section.

D. Proceeding with installation implies installer's acceptance of all site conditions.

3.02 PREPARATION

A. Structural walls should be finished, with building completely closed. Walls shall be thoroughly dry before starting installation. A vapor barrier should be used on exterior walls behind backing to discourage warping.

B. Panels must be applied over a smooth, solid, flat backing such as plywood or drywall. All drywall joints should be taped and finished.

C. Conditioning of space: See Project/ Site conditions in previous section.

3.03 INSTALLATION

A. Installation must be done by qualified Carpenters experienced in the installation of architectural woodwork. The firm must demonstrate successful experience installing materials of similar type and quality of those required for this project. The use of proper Carpentry tools and Techniques will be required for the installation. Handling, cutting and machining of the panels must be done with care to avoid marring the DI-NOC finish.

B. Do not proceed with installation until all finishing work has been completed in and around the work area.

C. Coordinate the exact size, location and sequencing of penetrations of panels by all building components.

D. Lay out panels per approved shop drawings.

E. Standard system typically uses z-bar and z-clip type hardware. (This option will be included when specified). Attachment systems may vary by project.

1. When using acoustic absorbing backing material, z-bar will need to be mounted on furring strips with a minimum of 1" space behind panels (3/4" furring and ¼" z-clips are minimum)

F. Comply with manufacturer's installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

3.04 CLEANING AND PROTECTION

A. Vacuum or wipe with a slightly damp cloth to remove dust and debris from perforations or holes.

B. To clean the surface of the Architectural Finish, use a clean, soft, slightly damp cloth with mild detergent and water. Hot water may be required for heavier soil.

C. Note: Care must be taken to avoid excessive use of water during cleaning as this may lead to swelling and warping of wood fiberboard.

D. Remove and replace damaged or discolored material and material that cannot be properly cleaned.

3.05 SCHEDULE

NOTE: When more than one type or design of 3M™ Wall Panel System featuring 3M™ DI-NOC™ Architectural Finishes is specified in this section, it will be necessary to identify where each type is to be used. A schedule may be useful for that purpose if the types are not to be indicated on the drawing. The following is a suggested format for such a schedule, with an example.

A. Room:

B. Elevation:

C. Shop Drawing Reference: In addition to original A/E elevations, the installation specialist may be asked to provide elevation views of installation surfaces to confirm design intent upon request.

END OF SECTION