

Section 09 77 00 | Special Wall Surfacing

PART 1: GENERAL

1.01 Summary

A. Section Includes: Durable, decorative wall panels with smooth or textured finishes. Mounting hardware, adhesives, accessories and trims.

B. Related Sections:

1. Division 06 Section: Rough and Finish Carpentry.
2. Division 09 Section: Gypsum Board Assemblies.

1.02 References

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 01 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to the extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. ASTM International:

1. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
2. ASTM D256 Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
3. ASTM D638 Standard Test Method for Tensile Properties of Plastics.
4. ASTM D790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
5. ASTM D2583 Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.

1.03 System Description

A. Performance Requirements: Provide durable, decorative wall panels which have been manufactured and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.

1.04 Submittals

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 01 Submittal Procedures Section.

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01300 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data, storage, handling and preparation requirements and installation instructions.
- C. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors, patterns and textures. Indicate location and dimension of joints and fastener attachment.
- D. Samples: Submit selection and verification samples for finishes, colors and textures. Submit 2 samples of each type of panel, trim and fastener.

General: Firm experienced in successful production of wall system similar to that indicated for the Project.

Quality Assurance/Control Submittals: Submit the following:

1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
2. Certificates:
 - a. Submit manufacturer's certificate that products meet or exceed specified requirements.
 - b. Submit certificate of installer's qualifications.

Specifier Note: For more information on installation recommendations, visit manufacturer's website at www.nudo.com.

3. Manufacturer's Instructions: Manufacturer's installation instructions.

F. Closeout Submittals: Submit the following:

1. Operations and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 01 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.
2. Warranty documents specified herein.

1.05 Quality Assurance

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 01 Quality Assurance Section.

A. Installer Qualifications: Installer shall have a minimum of 5 years experience with composite wall panel work similar in scope and size to this project.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 01 Regulatory Requirements Section. Repetitive statements should be avoided.

B. Regulatory Requirements and Approvals: [Specify applicable requirements of regulatory agencies].

Specifier Note: Retain paragraph below if mock-up is required.

C. Mock-Ups: [Specify requirements for mock-up].

1. Subject to acceptance by owner, mock-up may be retained as part of finish work.
2. If mock-up is not retained, remove and properly dispose of mock-up.

Specifier Note: Retain paragraph below if preinstallation meeting is required.

D. Preinstallation Meetings: [Specify requirements for meeting].

1.06 Delivery, Storage & Handling

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 01 Product Requirements Section.

A. General: Comply with Division 01 Product Requirements Section.

B. Lead Time: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

1. Store panels indoors.
2. Lay panels flat. Do not stand panels on edge.
3. Protect panels from moisture.
4. Do not store panels in contact with the floor or against an outside wall.
5. Do not remove protective film from panel surface until after installation (if applicable).
6. Maintain optimum storage conditions of 60-75 degrees F (16-24 degrees C) at 35 - 55% relative humidity. Avoid extremes in temperature and humidity.

E. Handling: Remove foreign matter from face of panel by using a soft bristle brush, avoiding abrasive action.

1.07 Project/Site Conditions

Specifier Note: In article below, state physical or environmental limitations or criteria for installation such as weather, temperature, humidity, ventilation or illumination required for proper installation or application.

A. Environmental Requirements:

1. Installation shall not begin until building is enclosed, permanent heating and cooling equipment is in operation and residual moisture from plaster, concrete or terrazzo work has dissipated.
2. Install panels between 60 degrees F - 75 degrees F (15 - 24 degrees C) and relative humidity below 55%, ideally at the same conditions as the room's normal operating temperatures after building is occupied.
3. Provide ventilation to disperse fumes during application of adhesive as recommended by adhesive manufacturer.
4. Do not install wall system until normal lighting conditions exist. Normal lighting conditions are described as those in place when the project is finished.

B. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

1. Wall, ceilings, floors and openings must be level, plumb, straight, in-line and square

1.08 Warranty

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 01 Closeout Submittals (Warranty) Section.

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

- C. Warranty Period: [Specify term.] years commencing on Date of Substantial Completion.
 - 1. Warranty extends to products assembled / installed and used in the manner intended and does not cover damage or failure caused by: misuse, abuse or accidents, exposure to extreme temperature, improper installation, improper maintenance and exposure to water or excessive humidity or excessive moisture.

1.09 Maintenance

Specifier Note: Retain article below for proprietary method specification. Add product attributes; performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products

- A. Extra Materials: Provide [A recommended percentage of] [Specify percentage.] additional material for use by owner in building maintenance and repair.

PART 2: PRODUCTS

2.01 Composite Wall Panels

Specifier Note: Retain article below for proprietary method specification. Add product attributes; performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

A. Manufacturer: Nudo

- 1. Contact: 1500 Taylor Avenue, Springfield, IL 62703; Telephone: (800) 826-4132, (217) 528-5636; Fax: (217) 528-8722; E-mail: info@nudo.com ; website: www.nudo.com

B. Proprietary Products/Systems: Composite wall & ceiling panels, including the following:

NüFiber™ Wall Panels:

NüFiber: Fiberglass Reinforced Plastic (FRP) laminated to plywood, gypsum or OSB substrate

Texture: [Smooth, Pebbled]

Substrate: [Plywood, Gypsum, Oriented Strand Board (OSB)]

Thickness: [0.375", 0.400", 0.500", 0.675", 0.700"]

Fire-Rating Class: C

Color: [Specify standard and/or custom colors as available for product] [Standard Finish: Black (806), Brown (277), Light Green (467), Yellow (334), Dark Gray (720), Pearl Gray (750), Blue (525), Bordeaux (139), Red (132), Orange (131), Beige (293), Khaki (203), Almond (698), White (050)]

Size: [Specify size, or as indicated on drawings.] [4 feet x 8 feet (1.2 x 2.4 m)] [4 feet x 10 feet (1.2 x 3.0 m)] [4 feet x 12 feet (1.3 x 3.6 m). (larger sizes available through special order.)

Physical Properties:

- 1) Flexural Strength (ASTM D790): 7600 lbf/in².
- 2) Flexural Modulus (ASTM D790): 854,234 psi.
- 3) Tensile Strength (ASTM D638): 5000 psi.
- 4) Barcol Hardness (ASTM D2583): --
- 5) Izod Impact (ASTM D256): 7.16 ft-lb/in.
- 6) Surface Burning Characteristics (ASTM E84): Class C.

2.02 Product Substitutions

Substitutions: No substitutions permitted.

2.03 Accessories

Specifier Note: Specify subordinate or secondary items that aid and assist primary products specified above or are necessary for preparation or installation of those items. Specify method of joint seam treatment below under Installation.

Specifier Note: Paragraphs below list proprietary durable, decorative wall panel products offered by Nudo. Select and retain product characteristics required; delete characteristics not required. Refer to manufacturer's product data or other publications for more information.

Moldings: [Specify coordinating PVC (polyvinyl chloride) molding(s)] [Specify color as available for product]
[Specify Aluminum coordinating moldings] [Specify color]

Rivets: [Specify optional rivets in complimentary colors (by color name and number) in areas where there are large fluctuations in temperature and/or humidity, where the substrate is unusually uneven, and in all low temperature or cold storage applications]

PART 3: EXECUTION

3.01 Manufacturer's Instructions

A. Adhesive: Provide panel adhesive as recommended by panel manufacturer.

B. Trim and Seam Treatment:

1. Manufacturer: Acceptable to panel manufacturer.
2. Manufacturer Designation: [Corner molding] [Division bar] [Cap] [Specify manufacturer designation.].
Specifier Note: Retain one of three subparagraphs below to suit project requirements.
3. Material and Color: Color matched acrylic latex caulk.
4. Material and Color: [Aluminum moldings] [Specify color]
5. Material and Color: [Standard PVC Moldings] [Specify color]

C. Fasteners: Provide appropriate fasteners and accessories as required to properly complete installation.

3.03 Preparation

A. Comply with the instructions and recommendations of the durable, decorative wall panel manufacturer.

Specifier Note: Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions. Verify that site conditions are acceptable for installation of durable, decorative wall panels. Examine back-up surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails are countersunk and joints and cracks are filled flush and smooth with the adjoining surface. Do not proceed with installation of durable, decorative wall panels until unacceptable conditions are corrected.

3.04 Installation

A. General: Prior to installing panels, remove packaging and allow panels to acclimate to room temperature and humidity for at least 48 hours.

Wall substrate must be dry and free from dirt, dust, grease and other contaminants. Walls must be flat and even. Remove high spots and fill low spots with material acceptable to panel manufacturer.

Remove wallpaper, soluble or loose paint and other foreign matter that might interfere with proper adhesive bond.

Painted walls must be prepared to adhesive manufacturer specifications for proper adhesion.

Specifier Note: Coordinate article below with manufacturer's recommended installation requirements. For more information on installation recommendations, visit manufacturer's website at www.nudo.com.

B. General:

Inspect panels for any defects immediately. Do not install panels of unacceptable quality. Field cutting of all wall systems should be accomplished using a circular saw with fine tooth carbide blade.

Position panel so that the saw blade enters the finished HPL side first to avoid chipping or damage. Protect decorative laminate

face of panel by covering work area, do not remove protective will until after installation.

Follow adhesive manufacturer's recommendations for appropriate height of adhesive bead left by trowel and do not allow adhesive to skin over. When interior paneling is on an exterior wall or wet area, provide a barrier sheet and/or follow the adhesive manufacturer's installation recommendations for a secure bond.

- C. For installation to studs or furring straps, for non-composite wall system applications, use mechanical fasteners spaced 24 inches on center (O.C.) Furring straps shall be no less than 18 gauge 3-1/2 inches wide. Joint Seam Treatment: Install panels using the following method.

[Color matched acrylic latex caulk].

[Aluminum moldings].

[PVC moldings].

- D. Installation Using Aluminum Moldings or PVC Trims:

1. Start in the corner. Mark plumb line 48 1/8 inches from corner.
2. Apply adhesive directly to entire back of composite wall panel using correct trowel with 100% adhesive coverage using crosshatch pattern. Apply adhesive to within 1/2 inch of all edges of panel.
3. Slide panel into molding and withdraw [1/8 inch for PVC moldings] [1/16 inch for aluminum moldings] to provide appropriate gap. Align with plumb line.
4. Begin in top corner nearest molding with laminate roller, rolling down and out toward the edge without molding.
5. Continue rolling down and out working across panel away from previously installed panel or initial molding. Remove all trapped air.
6. Install one-piece division bar and caps or next molding by sliding onto panel.
7. Repeat process, working in one direction around room.
8. Immediately remove all adhesive residue. To remove, clean with nonabrasive cotton cloth and warm water. If necessary, use a mild nonabrasive detergent. For cleanup with solvent based adhesives, use mineral spirits or acetone to remove residue.

- E. Installation Using Caulk:

1. Plan panel layout so seams are not directly over seams of substrate.
2. Apply adhesive directly to back of composite wall panel with 100% adhesive coverage using crosshatch pattern. Extend adhesive to all edges of panel.
3. Install panel. Place six-penny finishing nails at 1/8 inch (3.2mm) spacing against the panel about 2 feet (610mm) apart to hold panels in place while adhesive sets and provide proper spacing for color caulk. Continue installing panels using this method, leaving nails in place during installation.
4. Remove nails after adhesive sets.
5. Place a narrow piece of masking tape along panel edge from top to bottom, exactly at joint edge. Firmly apply tape to both panels.
6. Fill 1/8 inch (3.2mm) gap between the panels with caulk, making sure gap is completely filled.
7. Tilt caulking tube back from vertical so that tip of tube advances first in direction of travel.
8. Wet finger and smooth bead if necessary.
9. Remove masking tape before bead cures. Clean off excess caulk with damp cloth.
10. Install corner moldings as described in molding instructions.

3.05 Cleaning

Specifier Note: Specify the final actions required to clean installed equipment or other completed work to properly function or perform. Coordinate article below with Division 01 Execution Requirements (Cleaning) Section.

- A. Clean panel surfaces in compliance with manufacturer's recommendations.

1. Use a clean, damp, nonabrasive cotton cloth and a mild liquid detergent or household cleaner.
2. Rinse with clean water using a clean, nonabrasive cotton cloth.
3. Dry panels with a soft, clean nonabrasive cotton cloth.
4. Do not use cleaners containing acid, alkali or sodium hypochlorite.

3.06 Protection

Specifier Note: Specify provisions for protecting work after installation but prior to acceptance by the owner. Coordinate article below with Division 01 Execution Requirements Section.

- A. Protect installed work from damage due to subsequent construction activity on the site.