



Nudo Products, Inc.
1500 Taylor Avenue
Springfield, IL 62703
Phone: (800) 826-4132
Phone: (217) 528-5636
Fax: (217) 528-8722
E-mail: info@nudo.com
www.nudo.com

This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat™*, *SectionFormat™* and *PageFormat™*. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies NUDO CeramicSteel a3 composite wall panels with high performance enamel surface for use as metal interior wall finishes for high traffic public spaces. These products are manufactured by Nudo Products, Inc. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

SECTION 09 78 13 METAL INTERIOR WALL PANELS

PART 1 GENERAL

1.01 SUMMARY

Specifier Note: Revise paragraphs below to suit project requirements.

- A. Section Includes: Porcelain enameled steel faced panels with choice of [high density fiberboard (HDF), aluminum composite (ACM) or cement board] core.
- B. Related Sections:
 - 1. Division 09 Section: Gypsum Drywall.

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.

1.02 REFERENCES

- 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/ISO International:
 - 1. ASTM D3363 Standard Test Methods for Determining Pencil Hardness.
 - 2. ASTM D501 Standard Test Method for Wear Resistance.
 - 3. ASTM C538 Standard Test Method for Color Stability
 - 4. ISO 15695 Standard Test Method for Scratch Resistance.
 - 5. ISO 28722 Standard Test Methods for Graffiti Resistance
 - 6. ISO 4592 Standard Test Method for UV Resistance
 - 7. ISO 4532 Standard Test Method for Cold Acid Resistance
 - 8. ISO 28706-1 Standard Test Method for Boiling Acid Resistance
 - 9. ASTM D523 Standard Test Method for Orange Peel
 - 10. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.

1.03 SYSTEM DESCRIPTION

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

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.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data 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.
- E. 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.

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.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Installer shall have a minimum of 5 years experience of 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.].

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

1.06 DELIVERY, STORAGE & HANDLING

- 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 flat, above floor level on a solid, flat, dry, frost-free surface.
 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.
 6. Maintain optimum storage conditions of 60-75 degrees F (16-24 degrees C) at 35 - 55% relative humidity.
- E. Handling: Remove foreign matter from face of panel by using a soft bristle brush, avoiding abrasive action.

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.

1.07 PROJECT/SITE CONDITIONS

- 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 between 35% and 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.
- 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.

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

1.08 WARRANTY

- 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.

1. Limited Warranty Period: 10 years limited warranty for porcelain enameled surface and 5 years limited warranty for panel composition commencing on Date of Substantial Completion.

1.09 MAINTENANCE

- A. Extra Materials: Provide 10% additional material for use by owner in building maintenance and repair.

PART 2 PRODUCTS

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.

2.01 DECORATIVE COMPOSITE WALL PANELS

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

- A. Manufacturer: Nudo Product, Inc.
1. Contact: **Marla Gomes, Director of Architectural Building Products- NUDO, Telephone: (818) 530-8008**, E-mail: marla.gomes@nudo.com Nudo Products Corporate Offices 1500 Taylor Avenue, Springfield, IL 62703; (800) 826-4132; (217) 528-5636; website: www.nudo.com.
 2. Specifier Note: Paragraphs below list proprietary NUDO CeramicSteel a3 composite wall panel products offered by Nudo Products, Inc. Consult manufacturer regarding product options. Select and retain product characteristics required; delete characteristics not required. Refer to manufacturer's product data or other publications for more information.
- B. Proprietary Products/Systems: Composite wall panels, including the following:
1. Nudo CeramicSteel a3 panels:
 - a. Surface Appearance: [smooth]
 - b. Core Selection: [High Density Fiberboard (HDF)/mil backer], [Aluminum Composite (ACM)], [Cement Board (CB)/mil backer]

- c. Thickness: 0.250 inch (6.35 mm).
- d. Approximate Weight: 2.5 psf
- e. Width Size: 4 feet (1.2mm) nominal 47³/₄" actual
- f. Length Size: [8 feet (2.4mm) nominal, 95³/₄" actual] & [10 feet (3.0mm) nominal, 119³/₄" actual] (Larger sizes available through special order.)
- g. Tolerance: Length & Width +/- 1/8" (3.175mm). Square not to exceed 1/8" for 8ft (2.4mm) panel or 5/32" (3.96mm for 10 ft (2.4) panels.
- h. Standard Colors: [Bone White 7563] [White 6100L – WS] [New White PEI-N-52] [Stone White PEI-118] [Ivory PEI-14] [Stone Gray 513] [Powder Gray PEI-22][Matte Black TCM-14] [Black Chalkboard 6501-C-WS] [Glossy White 6100H-WS] [Glossy Black PEI-28-WS]
- i. Premium Colors: [Custom Colors RAL#] & [Graphics Available]
- j. Physical Properties:
 - 1) ASTM D3363 Standard Test Methods for Determining Pencil Hardness.
 - 2) ASTM D501 Standard Test Method for Wear Resistance.
 - 3) ASTM C538 Standard Test Method for Color Stability
 - 4) ISO 15695 Standard Test Method for Scratch Resistance.
 - 5) ISO 28722 Standard Test Methods for Graffiti Resistance
 - 6) ISO 4592 Standard Test Method for UV Resistance
 - 7) ISO 4532 Standard Test Method for Cold Acid Resistance
 - 8) ISO 28706-1 Standard Test Method for Boiling Acid Resistance
 - 9) ASTM D523 Standard Test Method for Orange Peel
 - 10) ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials

Specifier Note: Edit Paragraph below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 01 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

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.

2.03 ACCESSORIES

- A. Adhesive: Provide panel adhesive as recommended by panel manufacturer. Also follow adhesive manufacturer's installation guidelines.
- B. Trim and Seam Treatment:
 - 1. Manufacturer: Acceptable to panel manufacturer.
 - 2. Manufacturer Designation Anodized Aluminum Trim : [ACS-100-10-OC Outside Corner] [ACS-101-10-OC Inside Corner] [ACS-102-10-DB Division Bar] [ACS-103-10-EC End Cap] [ACS-104-10-RV Reveal] [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, [Anodized Silver]
- 5. Material and Color: Complimentary PVC (polyvinyl chloride) moldings. [Specify color -almond, 50 white, black, 293 beige, blue, silver, 148 white, Bordeaux, brown, coral, khaki, 611 ivory, 142 red, 750 pearl, pineapple, 1207 medium gray.][Custom match color vinyl minimums and additional lead time may apply]

PART 3 EXECUTION

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the instructions and recommendations of the composite wall panel manufacturer.

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

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify that substrate conditions, which have been previously installed under other sections,

are acceptable for product installation in accordance with manufacturer's instructions.

1. Verify that site conditions are acceptable for installation of composite wall panels.
2. 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.
3. Do not proceed with installation of composite wall panels until unacceptable conditions are corrected.

3.03 PREPARATION

A. General:

1. Prior to installing panels, remove packaging and allow panels to acclimate to room temperature and humidity for at least 48 hours. Do not remove protect film from composite wall panel until after installation.
2. Wall substrate must be dry and free from dirt, dust, grease and other contaminants.
3. Walls must be flat and even. Remove high spots and fill low spots with material acceptable to panel manufacturer.
4. Remove wallpaper, soluble or loose paint and other foreign matter that might interfere with proper adhesive bond.
5. Painted walls must be prepared to adhesive manufacturer specifications for proper adhesion.

Specifier Note: Coordinate article below with manufacturer's recommended installation requirements.

3.04 INSTALLATION

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

A. General:

1. Inspect panels for any defects immediately. Do not install panels of unacceptable quality.
2. Do not install panels directly over stud framing or furring.
3. When cutting panels a power panel saw or skill saw with metal cutting, high tooth count carbide tipped blades (liberally lubricated with blade wax).
4. Protect enamel face of panel by covering work area, do not remove protective film until after installation.
5. Follow adhesive manufacturer's recommendations for appropriate height of adhesive bead left by trowel and do not allow adhesive to skin over.

B. Joint Seam Treatment: Install panels using the following method.

1. [Color matched acrylic latex caulk].
2. [Aluminum moldings].
3. [PVC Moldings].

C. Installation Using Aluminum Moldings or PVC Moldings:

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 1/16 inch of all edges of panel.
3. Slide panel into molding and withdraw [1/8 inch for vinyl 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.

D. 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 spacing against the panel about 2 feet 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 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.

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.

3.05 CLEANING

- 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.

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.

3.06 PROTECTION

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

Specifier Note: Retain, edit or delete article below to suit project and specifier practice. If retained, indicate item, element, product or equipment and its location. Provide other coordinating data.

3.07 SCHEDULES

- A. [Specify panel schedule.]

END OF SECTION