

- B. Plastic Edge Banding: Extruded PVC, flat shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
1. Color: As selected by Architect from manufacturer's standard range.
- C. Fasteners: Size and type to suit application.
- D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- E. Concealed Joint Fasteners: Threaded steel.
- F. Grommets: Standard plastic grommets for cut-outs, in color to match adjacent surface.

2.08 HARDWARE

- A. Hardware: BHMA A156.9, types as scheduled for quality grade specified.
- B. Metal Z-Shaped Wall Cabinet Support Clips: Paired, cleated, structural anchorage components applied to back of cabinets and walls for wall cabinet mounting.
1. Material: Extruded Aluminum.
2. Products:
- a. Eagle Mouldings, Inc; Eagle Z-Clips: www.eagle-aluminum.com/#sle.
- C. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards and coordinated self rests, polished chrome finish, for nominal 1 inch (25 mm) spacing adjustments.

2.09 FABRICATION

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs. (Locate counter butt joints minimum 600 mm from sink cut-outs.)
1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
2. Cap exposed plastic laminate finish edges with plastic trim.
- E. Mechanically fasten back splash to countertops as recommended by laminate manufacturer at 16 inches (400 mm) on center.
- F. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Install work in accordance with AWIA/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure custom cabinets in place, assuming that they are rigid, plumb, and level.
- C. Use fixture attachments in concealed locations for wall mounted components.
- D. Use concealed joint fasteners to align and secure adjoining cabinet units.
- E. Carefully scribe case/work abutting other components, with maximum gaps of 1/32 inch (0.79 mm). Do not use additional overlay trim for this purpose.
- F. Secure cabinets to floor using appropriate angles and anchorages.
- G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

- A. Test installed work for rigidity and ability to support loads.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

- A. Clean case/work, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 064200 WOOD PANELING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Custom wood veneer paneling.
- B. Shop finishing.

1.02 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- B. AWIA/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.
- D. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

1.03 SUBMITTALS

- A. Product Data: Provide data on fire-retardant treatment materials and application instructions.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
1. Scale of Drawings: 1-1/2 inch to 1 foot (125 mm to 1 m), minimum.
2. Provide plan of panel number sequencing.
- C. Samples: Submit two samples of finished plywood, ____x____ inch (____x____ mm) in size, illustrating wood grain and specified finish.
- 1.04 QUALITY ASSURANCE
- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
1. Single Source Responsibility: Provide and install this work from single fabricator.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect work from moisture damage.
- B. Do not deliver wood materials to project site until building is fully enclosed and interior temperature and humidity are in accordance with recommendations of AWIA/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

PART 2 PRODUCTS

2.01 PANELING

- A. Quality Standard: Custom Grade, in accordance with AWIA/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless otherwise indicated.
- B. Flat Paneling:
1. Species: _____
2. Cut:
3. Panels: Veneer of full width and balanced sequence matched.
4. Visible Edges and Reveals: Filled and painted.
5. Outside Corners: Mitered and splined.

2.02 WOOD-BASED MATERIALS - GENERAL

- A. Hardwood Plywood: HPVA HP-1 Grade A; veneer core, type of glue recommended for application; of grain quality suitable for transparent finish.

2.03 ADHESIVES AND FASTENERS

- A. Fasteners: Of size and type to suit application; _____ finish in concealed locations and _____ finish in exposed locations.

2.04 WOOD-TREATMENT PROCESSES

- A. Fire-Retardant Treatment (FR-S Type) for Lumber: Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.

2.05 FABRICATION

- A. Shop prepare and identify panels for grain matching during site erection.
- B. Prepare panels for delivery to site, permitting passage through building openings.
- C. Finish exposed edges of panels as specified by grade requirements.
- D. When necessary to cut and fit on site, provide materials with ample allowance for cutting and scribing.

2.06 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
- D. Finish work in accordance with AWIA/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
1. Transparent:
- a. System - 11, Polyurethane, Catalyzed.
- b. Stain: As selected by Architect.
- c. Sheen: Flat.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

- A. Install work in accordance with AWIA/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Do not begin installation until wood materials have been fully acclimated to interior conditions.
- C. Set and secure materials and components in place, plumb and level, using concealed fasteners wherever possible.
- D. Where necessary to cut and fit on site, scribe work abutting other components. Do not use additional overlay trim to conceal gaps.
- E. Set exposed fasteners, fill with wood filler, and finish to match panel finish.
- F. Touch up damaged finish to match original, using materials provided by fabricator; replace components that cannot be refinished like new.

3.03 TOLERANCES

- A. Maximum Variation from True Position: 1/16 inch (1.6 mm).
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch (0.8 mm).

END OF SECTION

SECTION 068316 FIBERGLASS REINFORCED PANELING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fiberglass reinforced plastic panels.
- B. Trim.

1.02 REFERENCE STANDARDS

- A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2023, with Editorial Revision.
- B. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- C. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels; 2022.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- E. FDA Food Code - Chapter 6 - Physical Facilities; Current Edition.

- F. FM 4480 - Evaluating the Fire Performance of Insulated Building Panel Assemblies and Interior Finish Materials; 2017.

1.03 SUBMITTALS

- A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- B. Samples: Submit two samples 6 by 6 inch (152 x 152 mm) in size illustrating material and surface design of panels.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fiberglass Reinforced Plastic Panels:
1. Crane Composites, Inc: www.crane-composites.com/#sle.
2. Marite, Inc: www.marite.com/#sle.
3. Nudo Products, Inc: www.nudo.com/#sle.
4. Panolan Industries International, Inc: www.panolan.com/#sle.

2.02 PANEL SYSTEMS

- A. Wall Panels:
1. Panel Size: 4 by 8 feet (1.2 by 2.4 m).
2. Panel Thickness: 0.10 inch (2.5 mm).
3. Surface Design: Embossed.
4. Color: White.
5. Attachment Method: Adhesive only, sealant joints, no trim.

2.03 MATERIALS

- A. Panels: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
2. Class 1 fire rated when tested in accordance with FM 4480.
3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
4. Impact Strength: Greater than 6 ft lb force per inch (320 J per m), when tested in accordance with ASTM D256.
5. Surface Characteristics and Cleanability: Provide products that are smooth, durable, and easily cleanable, in compliance with FDA Food Code, Chapter 6 - Physical Facilities.
- B. Trim: Vinyl; color coordinating with panel.
- C. Fasteners: Nylon rivets.
- D. Adhesive: Type recommended by panel manufacturer.
- E. Sealant: Type recommended by panel manufacturer; white.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate conditions are ready to receive the work of this section.

3.02 INSTALLATION - WALLS

- A. Install panels in accordance with manufacturer's instructions.
- B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
- C. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.
- D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
- E. Install panels with manufacturer's recommended gap for panel field and corner joints.
- F. Drive fasteners to provide snug fit, and do not over-tighten.
- G. Place trim on panel before fastening edges, as required.
- H. Fill channels in trim with sealant before attaching to panel.
- I. Install trim with adhesive and screws or nails, as required.
- J. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.
- K. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION 070553

FIRE AND SMOKE ASSEMBLY IDENTIFICATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Identification markings for fire and smoke rated partitions, and fire rated walls.

1.02 REFERENCE STANDARDS

- A. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.03 SUBMITTALS

- A. Product Data: Manufacturer's printed product literature for each type of marking, indicating font, foreground and background colors, wording, and overall dimensions.
- B. Schedule: Completely define scope of proposed marking, and indicate location of affected walls and partitions, and number of markings.
- C. Samples: Submit two samples of each type of marking proposed for use, of size similar to that required for project, illustrating font, wording, and method of application.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 FIELD CONDITIONS

- A. Do not install adhered markings when ambient temperature is lower than recommended by label or sign manufacturer.
- B. Do not install painted markings when ambient temperature is lower than recommended by coating manufacturer.

PART 2 PRODUCTS

2.01 FIRE AND SMOKE ASSEMBLY IDENTIFICATION

- A. Regulatory Requirements: Comply with "Marking and Identification" requirements of "Fire-Resistance Ratings and Fire Tests" chapter of ICC (IBC).
- B. Adhered Fire and Smoke Assembly Identification Signs: Printed vinyl or paper sign with factory applied adhesive backing.
- C. Applied Fire and Smoke Assembly Identification: Identification markings applied to partition with paint and a code compliant stencil. See Section 099123 for paint products.
- D. Language: Provide sign markings in English.

3.01 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.

3.02 PREPARATION

- A. See Section 099123 for substrate preparation for painted markings.

3.03 INSTALLATION

- A. Locate markings as required by ICC (IBC).
- B. Install adhered markings in accordance with manufacturer's instructions.
- C. Install applied markings in accordance with Section 099123.
- D. Install neatly, with horizontal edges level.
- E. Protect from damage until Date of Substantial Completion; repair or replace damaged markings.

END OF SECTION

SECTION 071800 TRAFFIC COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Waterproof coatings for traffic surfaces.

1.02 REFERENCE STANDARDS

- A. ASTM D638 - Standard Test Method for Tensile Properties of Plastics; 2022.
- B. ASTM D2240 - Standard Test Method for Rubber Property-Durometer Hardness; 2015 (Reapproved 2021).
- C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

1.03 SUBMITTALS

- A. Product Data: Include product characteristics and limitations. Identify dissolving solvents, fuels, and potential destructive compounds.
- B. Samples: Submit two samples of cured membrane, minimum 8 by 8 inch (203 by 203 mm) in size, illustrating color, surface texture, and variations.
- C. Manufacturer's Installation Instructions: Include special field conditions required to install traffic membrane and potential incompatibilities with adjacent materials.
- D. Manufacturer's qualification statement.
- E. Applicator's qualification statement.
- F. Maintenance Data: Include procedures for stain removal, repairing surface, and cleaning.
- G. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with not less than three years of documented experience.
- B. Applicator Qualifications: Company specializing in performing installation of traffic membrane, with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Maintain storage area at minimum ambient temperature of 55 degrees F (13 degrees C).

1.06 FIELD CONDITIONS

- A. Do not install materials when temperature is below 50 degrees F (10 degrees C) or above 90 degrees F (32 degrees C).
- B. Maintain this temperature range, 24 hours before, during and 72 hours after application.
- C. Restrict traffic from area where materials are being installed or are curing.

1.07 WARRANTY

- A. Manufacturer Warranty: Provide 2-year manufacturer warranty for delamination of system from substrate and degradation of waterproofing ability. Complete forms in Owner's name and register with manufacturer.
- B. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Polyurethane Traffic Coating:
1. AVM Industries, Inc: www.avmindustries.com/#sle.
2. Master Builders Solutions: www.master-builders-solutions.com/en-us/#sle.
3. Neogard: www.neogard.com/#sle.
4. Pecora Corporation: www.pecora.com.
5. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

2.02 TRAFFIC COATINGS

- A. Polyurethane Concrete Pedestrian Traffic Coating System: Fluid-applied, single-component polyurethane system with number and type of coats recommended by manufacturer.
1. Finished Coating Thickness: Recommended by manufacturer for system specified, minimum.
2. Color: Gray.
3. Products:
- a. Basis of Design: Pecora Corporation; Pecora-Deck 8013 Pedestrian: www.pecora.com/#sle.
- B. Epoxy Concrete Pavement Coating: Two-component, fast curing, low viscosity epoxy coating with resistance to most oils, greases, and road salts.
1. Hardness: 74, after one day, Shore D, when tested in accordance with ASTM D2240.
2. Tensile Strength: 7,800 psi (53.8 MPa), when tested in accordance with ASTM D638.
3. Elongation at Break: 4.5 percent, when tested in accordance with ASTM D638.
4. Color: As selected by Architect from manufacturer's standard line.
5. Products:
- a. ChemCo Systems, Inc; KEMKO 186 Epoxy Healer/Sealer: www.chemcosystems.com/#sle.

2.03 ACCESSORIES

- A. Filler and Primer: As recommended by membrane manufacturer.
- B. Sealant: As recommended by membrane manufacturer, and compatible with system and adjacent materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate is ready to receive work, surface is clean, dry and free of substances that could adversely effect bond.
- B. Do not begin work until concrete substrate has cured at least 28 days and moisture content is 16 percent or less.
- C. Test concrete surface according to ASTM F710 for acceptable level of alkalinity.

3.02 PREPARATION

- A. Clean substrate surface free of foreign matter.
- B. Patch concrete substrate with filler to produce surface conducive to bond.
- C. Protect adjacent surfaces.

3.03 INSTALLATION

- A. Apply system materials in accordance with manufacturer's instructions.
- B. Finish to smooth surface sloped to drains. Cove at vertical surfaces.
- C. Apply sealant to junction of horizontal and intersecting surfaces to achieve watertight seal.

3.04 PROTECTION

- A. Do not permit traffic over unprotected surfaces.

END OF SECTION

SECTION 072100 THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation at cavity wall construction.
- B. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 DEFINITIONS

- A. Mineral Fiber Material Composition: Insulation referred to as mineral fiber block, board, and blanket insulation is composed of fibers from mineral based substances such as rock, slag, or glass and processed from the molten state into fibrous form.
1. Based on type of insulation substance, the material will be referred to as a mineral fiber when having a rock or slag base, and glass fiber with a glass or silica sand base, also considered a mineral.
2. Insulation blankets are flexible units consisting of felted, bonded, or unbonded fibers formed into rolls or flat cut pieces referred to as batts; rolls are simply longer versions of batts.
3. For additional information about mineral fiber and the various classification types, refer to the following reference standards: ASTM C553, ASTM C612, ASTM C665, and ASTM C726.

1.03 REFERENCE STANDARDS

- A. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2013 (Reapproved 2019).
- B. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2022.
- C. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation; 2014 (Reapproved 2019).
- D. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- E. ASTM C726 - Standard Specification for Mineral Wool Roof Insulation Board; 2017.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- G. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C; 2022.

1.04 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- B. Manufacturer's Installation Instructions: Include information on installation techniques.

1.05 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation Inside Masonry Cavity Walls: Expanded polystyrene (EPS) board.
- B. Insulation in Metal Framed Walls: Batt insulation with no vapor retarder.

2.02 FOAM BOARD INSULATION MATERIALS

- A. Expanded Polystyrene (EPS) Board Insulation: Comply with ASTM C578.
1. Flame Spread Index (FBI): Class A - 0 to 25, when tested in accordance with ASTM E84.
2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
3. Board Thickness: 2 inch (51 mm), unless otherwise indicated.
4. Board Edges: Square.

2.03 MINERAL FIBER BLANKET INSULATION MATERIALS

- A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
4. Formaldehyde Content: Zero.
5. Thickness: As indicated on Drawings.
- B. Mineral Wool Blanket Thermal Insulation: Flexible preformed insulation, complying with ASTM C665.
1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
3. Thickness: As indicated on Drawings.

2.04 ACCESSORIES

- A. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT CAVITY WALLS

- A. Install boards to fit snugly between wall ties.
- B. Install boards horizontally on walls.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BATT INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.04 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 072700 AIR BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Air barriers.

1.02 DEFINITIONS

- A. Air Barrier: Airtight barrier made of material that is virtually air impermeable but water vapor permeable, both to amount as specified, with sealed seams and sealed joints to adjacent surfaces.

1.03 REFERENCE STANDARDS