

Provided for reference with regard to Metal Panel 5A, currently identified for use on Knox and American II. This represents excerpts of previously provided exterior material selections for The District Apartments directly across the street from K&A II



12/17/2019



**DISTRICT APARTMENTS**  
1801 & 1901 West 30 1/2 Street, Bloomington, MN

**EXTERIOR MATERIALS &  
FINISHES SELECTIONS**



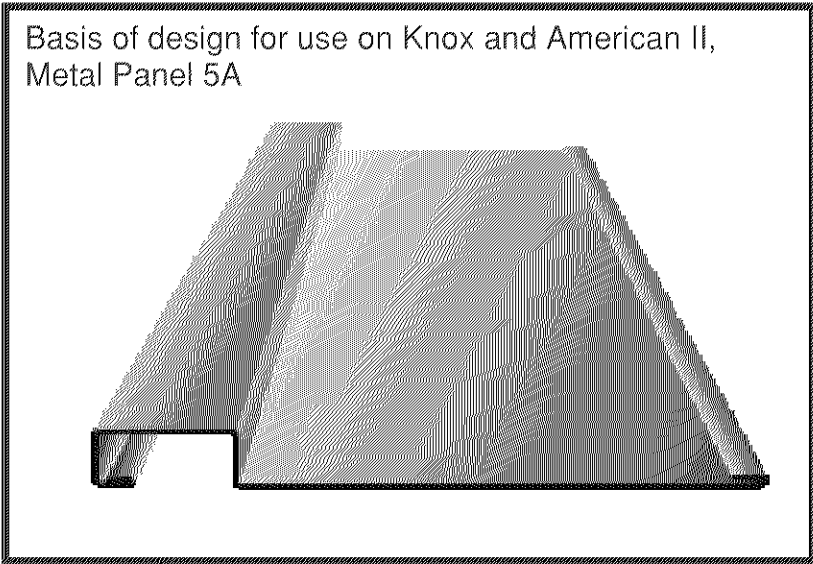
METAL PANEL

PL202300068

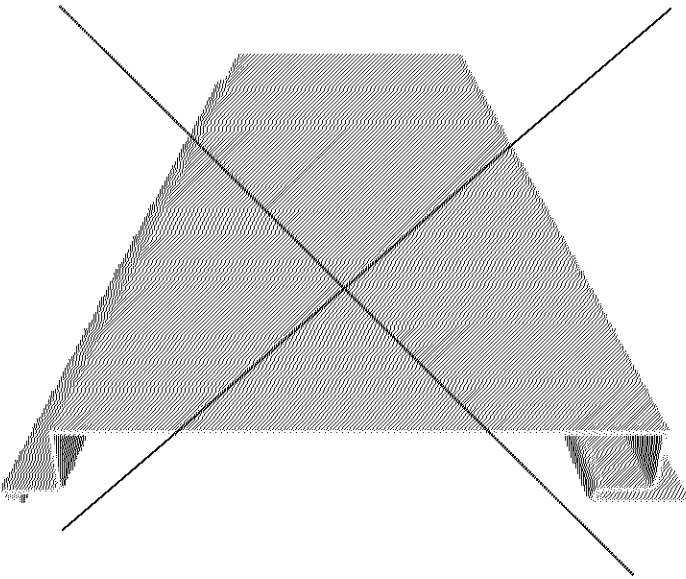
PROPERTIES AND SPECIFICATIONS

The metal panels used in this project are single thickness metal sheets, formed to profile with factory finish; specified in Section 07 4213 (copy attached). They are made of 3105 alloy, O temper, smooth surface sheet aluminum complying with ASTM B209 / B209M, and are roll formed to specified profiles. This is a commonly used product for commercial projects of all types and the metal panel thickness is in the mid-range of available thicknesses which is suitable for the spans required. "Oil canning" is a common trait of flat sheet metal panels and is being controlled by the depth and shape of the profile of the panels chosen. The panel finish has a 30 year warranty against degradation including fading, chalking, delaminating, etc. when exposed to weather.

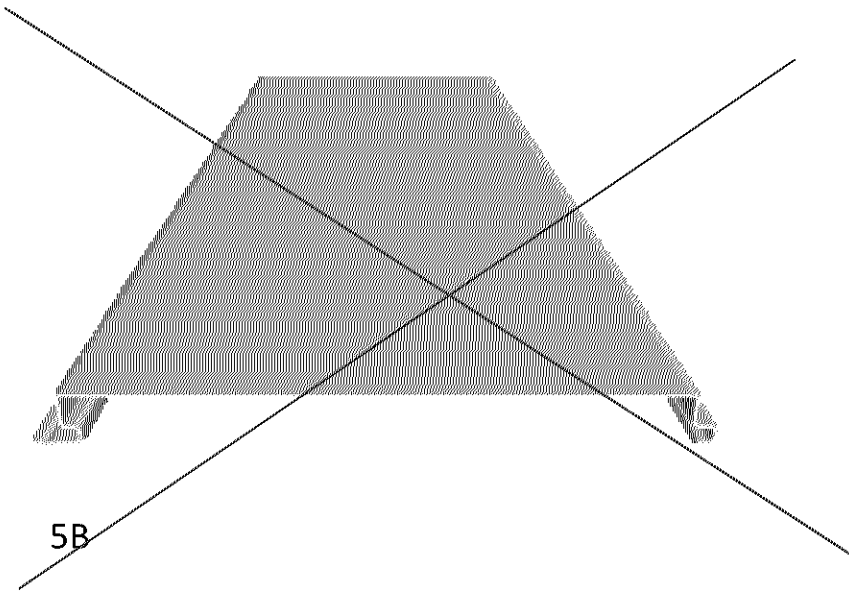
The panels are installed over a system of metal furring that is also galvanized steel. The panels themselves have nested, overlapping edges and serve as the primary rain barrier for the building. The furring system and related weather barrier and membrane flashings provide a secondary water barrier and drainage plane for any water that leaks through or condenses on the primary barrier.



5A & 5D



5A-a



5B

METAL PANEL APPLICATIONS AND INSTALLATION

The panels provide durable, low-maintenance properties with weather resistant joints. There is no such thing as a maintenance-free building material, but these panels are at least equivalent to the performance and durability of other commercial building exterior finish materials. Suppliers of these panels are being required to comply with FM Global (Factory Mutual) plan review requirements. FM Global's review provides an independent, third party review of the installation; primarily with regards to fire and wind resistance.

Also, the manufacturers (or local fabricators) are required (by Article 1.04 of each specification) to have 10 years minimum experience in production of this type of product and the installer is required to have 5 years minimum experience with the type of panel product specified.

Referring to the elevations, it is evident that the vast majority of metal panels occur at Level 2 and above. Positioning the panels in this fashion protects them from snow removal equipment, wheel chairs, stroller, and other pedestrian components that could damage the panels.

Please see the attached specification sections for requirements of protecting the panels from negative reactions with adjacent materials. Paragraph 3.03 of Section 07 4213 - Metal Wall Panels indicates the requirement to back-paint with bituminous paint and/or use gaskets, isolation shims, etc. to avoid contact with adjacent, dissimilar materials.

Paragraph 3.03 of Section 07 4213 - Metal Wall Panels requires the installation of seals and gaskets to prevent weather penetration. The panel to panel joints of this system are made of joint styles that interlock or overlap with sealant and installed with the interlocks and laps to shed water downward and outward even if the sealant in the joints subsequently fails. This ensures long-term corrosion-free service.

SECTION 07 42 13  
METAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Manufactured metal panels for exterior wall panels and subgirt framing assembly, with related flashings and accessory components.
- B. Finishes.

1.02 RELATED REQUIREMENTS

- A. Section 07 21 00 - Thermal Insulation.
- B. Section 07 25 00 - Weather Barriers: Weather barrier under wall panels.
- C. Section 07 92 00 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.
- D. Section 09 21 16 - Gypsum Board Assemblies: Wall panel substrate.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including thickness, physical characteristics, and finish, and:
  - 1. Finish manufacturer's data sheet showing physical and performance characteristics.
  - 2. Storage and handling requirements and recommendations.
  - 3. Fabrication instructions and recommendations.
  - 4. Specimen warranty for finish, as specified herein.
- C. Shop Drawings: Indicate dimensions, layout, joints, construction details, related flashings, and methods of anchorage.
  - 1. Indicate substrates and adjacent work with which the wall system must be coordinated.
  - 2. Include large-scale details of anchorages and connecting elements.
  - 3. Include large-scale details or schematic, exploded or isometric diagrams to fully explain flashing at a scale of not less than 1-1/2 inches per 12 inches.
  - 4. Include design engineer's stamp or seal on shop drawings for attachments and anchors.
- D. Design Data: Submit structural calculations stamped by design engineer, for Architect's information and project record.
- E. Samples: Submit two samples of wall panel and soffit panel, 12 inch by 12 inch in size illustrating finish color, sheen, and texture.

1.04 QUALITY ASSURANCE

- A. Design Engineer's Qualifications: Design structural supports and anchorages under direct supervision of a Qualified Professional Engineer experienced in design of this type of Work and licensed in the State in which the Project is located.

- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 10 years of experience.
- C. Installer Qualifications: Company specializing in installing products of the type specified in this section with minimum 5 years of experience.

1.05 MOCK-UP

- A. Construct mock-up, 12 feet wide by 8 feet high; include panel system, attachments to building frame, associated vapor retarder and air seal materials, weep drainage system, sealants and seals, related insulation, and window or door opening in mock-up.
- B. Locate where directed by Architect.
- C. Mock-up may remain as part of the Work.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.
- C. Prevent contact with materials that may cause discoloration or staining of products.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a thirty (30) year period after Date of Substantial Completion for degradation of panel finish, including color fading caused by exposure to weather.
  - 1. Chalking: No more than that represented by a No. 8 rating based on ASTM D4214.
  - 2. Color Retention: No fading or color change in excess of 5 Hunter color difference units, calculated in accordance with ASTM D2244.
  - 3. Gloss Retention: Minimum of 30 percent gloss retention, when tested in accordance with ASTM D523.
- C. Correct defective work within a five year period after Date of Substantial Completion, including defects in water tightness and integrity of seals.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design:
  - 1. Profile Panel Systems: Metal Sales Manufacturing Corp; products as indicated below: [www.metalsales.us.com](http://www.metalsales.us.com).
- B. Other Acceptable Manufacturers - Metal Wall Panels:
  - 1. ATAS International, Inc: [www.atas.com/#sle](http://www.atas.com/#sle).
  - 2. Berridge Manufacturing Company: [www.berridge.com/#sle](http://www.berridge.com/#sle).
  - 3. Centria: [www.centria.com](http://www.centria.com).
  - 4. Fabral Architectural Systems: [www.fabral.com](http://www.fabral.com).
  - 5. Firestone Building Products Co: [www.firestonebpco.com](http://www.firestonebpco.com).

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- 6. [MBCI <> : www.mbc.com].
- 7. Morin - A Kingspan Group Company: www.morincorp.com.
- 8. Petersen Aluminum Corporation: www.pac-clad.com/#sle.
- 9. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 MANUFACTURED METAL PANELS

A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.

- 1. Provide exterior wall panels, soffit panels and subgirt framing assembly.
- 2. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
- 3. Maximum Allowable Deflection of Panel: L/180 for length(L) of span.
- 4. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
- 5. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
- 6. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
- 7. Corners: Factory-fabricated in one continuous piece with minimum 2 inch returns.

B. Exterior Wall Panels:

- 1. Metal Panel, Indicated as Keynote 5A:
  - a. Profile: EM1-1212 Wall Panel (Empire Series); installed vertically.
  - b. Material: Precoated aluminum face sheet, 0.040 inch thickness.
  - c. Panel Depth: 1 inch.
  - d. Panel Width: 12 inches, exposed width.
  - e. Texture: Smooth.
  - f. Color: Ash Grey (25).
- 2. Metal Panel, Indicated as Keynote 5A-a:
  - a. Profile: TL-17; installed horizontally.
  - b. Material: Precoated aluminum face sheet, 0.040 inch thickness.
  - c. Panel Depth: 1-1/2 inches.
  - d. Panel Width: 12 inches, exposed width.
  - e. Texture: Smooth.
  - f. Color: Ash Grey (25).
- 3. Metal Panel, Indicated as Keynote 5B:

- a. Profile: Soffit Panel, Flat Pan profile; installed vertically.
- b. Material: Precoated aluminum face sheet, 0.032 inch thickness.
- c. Panel Depth: 1 inch.
- d. Panel Width: 12 inches, exposed width.
- e. Texture: Smooth.
- f. Color: Slate Grey (W38).

4. Metal Panel, Indicated as Keynote 5D:

- a. Profile: EM1-1212 Wall Panel (Empire Series); installed vertically.
- b. Material: Precoated steel face sheet, 22 gauge thickness.
- c. Panel Depth: 1 inch.
- d. Panel Width: 12 inches, exposed width.
- e. Texture: Smooth.
- f. Color: Ash Grey (25).

C. Soffit Panels:

- 1. Profile: Flush face panels with tongue and groove interlocked edges.
- 2. Material: Precoated steel sheet, 22 gage, 0.0299 inch minimum thickness.
- 3. Panel Thickness: 1-1/2 inches.
- 4. Panel Width: 12 inches.
- 5. Color: As selected by Architect from manufacturer's standard line.

D. Subgirt Framing Assembly:

- 1. Miscellaneous Secondary Framing: Light gauge steel framing incidental to structural supports; fabricated from steel sheet.
- 2. Framing Material: Non-precoated steel sheet.
  - a. Thickness: As required to provide a stable, secure substrate for the span and panel conditions of the project.
  - b. Zee, cee, or hat profile; to attach panel system to building.

- E. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; brake formed to required angles.
- F. Expansion Joints: Same material, thickness and finish as exterior sheets; 20 gage, 0.0359 inch thick; manufacturer's standard brake formed type, of profile to suit system.
- G. Trim, Closure Pieces, Caps, Flashings, Facias and [ ]: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- H. Anchors: Galvanized steel.

2.03 MATERIALS



- A. Precoated Steel Sheet: Hot-dipped galvanized steel sheet, ASTM A653/A653M, Structural Steel (SS) or Forming Steel (FS), with G90/Z275 coating; continuous coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.
- B. Precoated Aluminum Sheet: ASTM B209 (ASTM B209M), 3105 alloy, O temper, smooth surface texture; continuous-coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.
- C. Non-Precoated Steel Sheet: Hot-dipped galvanized steel sheet, ASTM A653/A653M, SS Grade 33/230, with G90 coating.

2.04 FINISHES

- A. Exposed Surface Finish: Panel manufacturer's standard polyvinylidene fluoride (PVDF) coating, top coat over epoxy primer.
- B. Panel Backside Finish: Panel manufacturer's standard siliconized polyester wash coat.
- C. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated aluminum surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as scheduled.

2.05 ACCESSORIES

- A. Gaskets: Manufacturer's standard type suitable for use with system, permanently resilient; ultraviolet and ozone resistant.
- B. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
  - 1. Color: To match metal panel color.
- C. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized. Fastener cap same color as exterior panel.
  - 1. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws.
- D. Field Touch-up Paint: As recommended by panel manufacturer.
- E. Bituminous Paint: Asphalt base.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that building framing members are ready to receive panels.
- B. Verify that weather barrier has been installed over substrate completely and correctly.

3.02 PREPARATION

- A. Install subgirts perpendicular to panel length, securely fastened to substrates and shimmed and leveled to uniform plane. Space at 24 inches on center, maximum.

3.03 INSTALLATION

- A. Install panels on walls in accordance with manufacturer's instructions.
- B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint. Allow to dry prior to installation.

- C. Fasten panels to subgirt supports; aligned, level, and plumb.
- D. Locate joints over supports.
- E. Lap panel ends minimum 2 inches.
- F. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.04 TOLERANCES

- A. Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1/16 inch.
- B. Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch.

3.05 CLEANING

- A. Remove site cuttings from finish surfaces.
- B. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

END OF SECTION

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