

SKYLINE ENGINEERED SYSTEMS
SPECIFICATIONS

SECTION 055913 – METAL BALCONIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 05 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:

- 1. Prefabricated aluminum balconies.

- B. Related Requirements:

- 1. Section 057300 "Decorative Metal Railings" for railings not components of the prefabricated balconies.
 - 2. [Section 061000 "Rough Carpentry"] [Section 061053 "Miscellaneous Rough Carpentry"] for wood blocking for anchoring balconies. Design of wood blocking by others. Installation of wood blocking shall be by contractors and tradesmen skilled in carpentry work.
 - 3. Section 092216 "Non-Structural Metal Framing" for metal knives for attaching balconies.

1.3 DEFINITIONS

- A. Balconies: Prefabricated platforms that are connected to the side of a building via knife plates and with railing on exposed sides.
- B. Railings: Guardrails and similar devices used for protection of occupants at open-sided floor areas.

1.4 COORDINATION AND SCHEDULING

- A. Comply with powder coating manufacturers' written instructions to ensure that primers and topcoats are compatible, if applicable.
- B. Coordinate installation of anchorages for balconies. Furnish drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver items to Project site in time for installation.
- C. Schedule installation so wall attachments are made only to completed walls. Do not support balconies temporarily by any means that do not meet structural performance requirements.

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1.5 PREINSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at [**Project site**] <Insert location>.

1.6 ACTION SUBMITTALS

- A. Shop Drawings:
 - 1. Include plans, elevations, sections, and attachment details.
- B. Samples: For balcony extrusions and color as required.
- C. Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For [**professional engineer**]
- B. Welding certificates.

1.8 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.2, "Structural Welding Code - Aluminum."

1.9 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with balconies by field measurements before fabrication and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS INFORMATION

Skyline Engineered Systems
13421 39th Ave NE
Marysville, WA 98270
360-654-3325

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2.2 GENERAL FABRICATION NOTES

- A. Alloys:
 - 1. 6005A, 6061, 5052-H32, and 6063 as specified per manufacture.
- B. Fabrication:
 - 1. Fit & shop assemble items in largest practical sections for site delivery
 - 2. Fabricate items with joints tight, flush & hairline.
 - 3. Grind exposed joints flush & smooth with adjacent surface. Finish all cut extrusions.
- C. Tolerances:
 - 1. Squareness: 1/8" maximum difference in diagonal measurements
 - 2. Alignment: 1/8" maximum difference from parallel surfaces
 - 3. Bow: L/240 deflection. (1/5" per ft.)
 - 4. Positioning: 1/4" maximum out of position
- D. Finish:
 - 1. All materials to be powder coated prior to installation per AAMA 2603 specifications
 - 2. Powder coat finishes warranted for 1 year.
- E. Hardware:
 - 1. All exposed hardware to be 300 series stainless steel or 400 series with Xylan pre-coating. All stainless hardware to be mill finish
 - 2. All concealed hardware to be galvanized steel
 - 3. All tension rods are to be steel with steel clevis yokes and a cross pin and roll pin to lock. All tension rod steel to be galvanized finished.
- F. Design:
 - 1. All scopes to include engineered shop drawings and engineering calculations inclusive of layout drawings for placement of embed plates.
 - 2. All drawings and calculations to be stamped by a qualified professional engineer responsible for their preparation.
 - 3. No assemblies to be constructed prior to receipt of approved returned submittals

2.3 PREFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design <Decking/Railing System>.
- B. General: In engineering balconies and railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:
 - 1. Aluminum: The lesser of minimum yield strength divided by 1.65 or minimum ultimate tensile strength divided by 1.95.

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C. Structural Performance:

1. Balcony Platform:

a. Uniform live load of **40 lbf/sq. ft. (195.297 kg/sq. m)**.

2. Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

Uniform load of **50 lbf/ft. (0.73 kN/m)** applied in any direction.

Concentrated load of **200 lbf (0.89 kN)** applied in any direction.

Uniform and concentrated loads need not be assumed to act concurrently.

3. Railing Infill:

Concentrated load of **50 lbf (0.22 kN)** applied horizontally on an area of **1 sq. ft. (0.093 sq. m)**.

Infill load and other loads need not be assumed to act concurrently.

2.4 METAL BALCONIES <Insert drawing designation>

A. Prefabricated Aluminum Balconies:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Skyline Engineered Systems aluminum bolt on balconies.
2. Fabrication: [**Preassembled**] [**Knock-down, with precut extrusions and predrilled holes**].
3. Deck: SEA Interlocking 6" plank - ADA compliant with integrated gutter.
4. Railing Posts: 2"x2" SEA Posts
5. Railing Top Rail: 1 3/4"x3 1/4" SEA Top Rail
6. Railing Infill: [**Per drawing designation**]
7. Finish: Powder coat or per drawing designation
8. Attachment Brackets: Provide [sub-facia] [side-mount] mounting brackets.
9. Support Components: Provide tension rods with attachment plates if required.

2.5 MATERIALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Same metal and finish as supported rails unless otherwise indicated.
- C. Provide extruded-aluminum brackets with interlocking pieces that conceal anchorage. Locate set screws on bottom of bracket.

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2.6 FABRICATION

- A. Fabricate components according to AWS specifications and industry standard practices. Ensure all components include all necessary attachment plates, drilled holes, and hardware required for assembly and installation.

2.7 GENERAL FINISH REQUIREMENTS

- A. Comply with AAMA's recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.9 ALUMINUM FINISHES

- A. Finish designations to follow the American Architectural Manufacturers Association of aluminum finishes.
 - B. Powder Coat Finish: AAMA 2603 (AAMA 2604 if designated) Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish. Color and Gloss to be determined by architectural designation.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine attachment locations for suitable conditions where balconies will be installed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

Comply with manufacturer's standards and engineering for installation of balconies.

3.3 CLEANING

- A. Clean aluminum and stainless steel by washing thoroughly with clean water and soap, rinsing with clean water, and wiping dry. Clean and polish glass as recommended by manufacturer. Wash both exposed surfaces in each area of project not more than four days before inspection.

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