## 1 GENERAL

**PRODUCT DESCRIPTION**
A prefabricated aluminum deck and balcony framing system designed for commercial, multi-family applications. The system is lightweight, maintenance free and comes with a durable powder coat finish. Balcony deck & framing systems are engineered and fabricated to meet all applicable building codes.

### 1.01. WORK INCLUDES:

A. Provide all materials, fasteners and hardware necessary and required to complete a fully engineered balcony system
    1. Prefabricated aluminum balconies, interlocking aluminum decking, aluminum railings, attachment plates, etc.

### 1.02. RELATED WORK SPECIFIED ELSEWHERE:

A. 03 30 00 – Cast-In-Place Concrete
B. 03 38 00 – Post-Tensioned Concrete
C. 04 21 13 – Brick Masonry
D. 04 22 00 – CMU – Concrete Unit Masonry
E. 05 12 00 – Structural Steel Framing
F. 05 40 00 – Cold-Formed Steel
G. 05 50 00 – Miscellaneous Metals
H. 06 11 00 – Wood Framing
I. 07 21 00 – Thermal Insulation
J. 07 62 00 – Sheet Metal Flashing and Trim
K. 08 32 10 – Vinyl Sliding Glass Doors

### 1.03. QUALITY ASSURANCE:

A. Installer Qualifications: Demonstrated successful experience with applications of similar size and scope with products specified in this section
B. Welders qualified in accordance with AWS D.1
C. Design criteria: Decking assemblies shall be designed to conform to all applicable building codes and loading requirements
D. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity

### 1.04. REFERENCES:

A. **American Society for Testing and Materials (ASTM):**
    1. B221: Specifications for Aluminum-Alloy Bars, Rods, Wires, Shapes and Tubes
    2. B429: Specifications for Aluminum-Alloy Extruded Structural Pipe and Tube
    3. D1730: Recommended Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting
    4. E985: Specification for Permanent Metal Railing Systems and Railings for Buildings
    5. E935: Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings
B. **American Architectural Manufacturers Association (AAMA):**
    1. 2604: Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
C. **National Association of Architectural Metal Manufacturers (NAAMM):**

1. Metal Finishes Manual
2. AMP 521-12 Pipe Railing Manual
3. AMP 510-92 Metal Stairs Manual

D. **American National Standards Institute (ANSI):**
   1. A21.1: Safety Requirements for Floors and Wall Openings, Railings and Toe Boards
   2. A58.1: Minimum Design Loads in Buildings and Other Structures
E. **American Society of Civil Engineers (ASCE)**
   1. ASCE 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures
F. **The Aluminum Association, Inc – Aluminum Design Manual**
G. **International Code Council Evaluation Service (ICC-ES)**
   1. AC273: Handrails and Guards

1.05. **DESIGN REQUIRMENTS:**

A. Design and fabricate prefabricated aluminum balconies and railings using the current building code and local building code amendments in accordance with the load requirements established by the Engineer of Record (EOR)
   1. The design shall consider all applicable live, dead, snow, wind, and other loads per governing codes and project conditions
   2. If the Engineer of Record does not explicitly define load requirements, the following minimum standards shall apply unless otherwise directed by the EOR or Authority Having Jurisdiction (AHJ):
      i. Dead Load: Actual calculated weight of construction materials and finishes
      ii. Live Load: 1.5-times the occupancy live load served for balconies and decks
      iii. Snow/Wind Loads: As required by the applicable building code and project location
B. Design and fabricate handrail and railing systems in accordance with ASTM E985
C. Railings tested in accordance with ASTM E935 and ICC-ES AC273
D. Railing assembly guardrails and attachments shall be capable of resisting the following loads:
   1. Concentrated load of 200 lbs. applied at any point and in any direction
   2. Uniform load of 50 lbs. per linear ft. applied horizontally and concurrently with uniform load of 100lbs per linear ft. applied vertically downward
   3. Concentrated loading need not be assumed to act concurrently with uniform loads
   4. Handrails not serving as guardrails:
      i. Concentrated load of 200 lbs. per linear feet applied in any direction
      ii. Uniform load of 50 lbs. per linear ft. applied in any direction
      iii. Concentrated and uniform loads need not assumed to act concurrently

**1.06. SUBMITTALS:**

A. See Section 01 30 00 – Administrative Requirements, for Submittal Procedures
B. Shop Drawings: Indicate profiles, sizes, connection attachments, welding symbols, anchorage, size and type of fasteners, accessories and locations
C. Structural Calculations: Prepare structural calculations signed & sealed by a qualified professional engineer experienced in the design of this section of work and is licensed in the state where the project is located
D. Samples: Provide standard color samples for Architect selection OBJ

**1.07. WARRANTY:**

A. See Section 01 78 00 – Closeout Submittals, for additional warranty requirements
B. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer
C. Provide 20 year structural and powder coat finish manufacturer's warranty covering material and workmanship
   a. Structural integrity warranty 20-years, no defects, breakage, warping or rusting
   b. Color retention warranty 20-years, following DeltaE 5 per ASTM D2244 standards, coating adhesion without peeling, cracking or blistering

**1.08. FIELD CONDITIONS:**

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

measurements/verifications are to be performed by the Superior Decks Superintendent in the field if required. Coordinate fabrication schedule with construction progress to avoid delaying the work.

### 1.09. DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials to the job site in good condition. Purchaser to store in clean, dry location, properly protected against damage to finished surfaces.
B. Balcony frame, decking and railing assemblies should be pre-assembled, optimizing freight efficiency and minimizing on-site labor requirements
C. Store away from uncured concrete, masonry, or stucco
D. Keep finished faces protected from abrasions and rough surfaces
E. Ensure balconies are kept clear of on-site welding and other hot work activities
F. Wrap, package, and otherwise protect factory installed finishes during shipping and handling processes
G. Do not handle or drag in a manner where the finished surface could become scratched

## 2 PRODUCTS

### 2.01. MANUFACTURERS:

A. Acceptable Manufacturer: Superior Decks Operating, LLC
Lakeville, MN, (952) 767-1100
www.superiordecksmfg.com

### 2.02. MATERIALS:

A. Balcony: Aluminum extrusion alloy: 6005-T5, 6005A-T61, or 6061-T6
B. Decking: Aluminum extrusion alloy 6005-T5
C. Decking Trim: Aluminum extrusion alloy 6063-T5
D. Railing: Aluminum extrusion alloy: 6005-T5, 6005A-T61, 6063-T5 or 6061-T6
E. Screws, bolts, washers, hardware shall be corrosion resistant

### 2.03. FINISHES:

TGIC polyester powder coating, electro-statically applied. Color to be selected by the architect/owner from manufacturer's standard colors. Meets AAMA 2604 specifications.

### 2.04. BALCONY FRAME, DECK & RAILING:

All extruded aluminum components are produced in accordance with ASTM B221.

A. Deck System:
    1. Components:
        i. Front: 4” x 8” x 0.09” aluminum tube
        ii. Back: 2” x 7-1/2” x 0.09” aluminum tube
        iii. Side: 4” x 6-1/2” x 0.09” aluminum tube
        iv. Joist: 1” x 5-1/2” x 0.09” aluminum flanged tube
        v. Decking: 1" x 6" tongue & groove aluminum interlock system installed using concealed fasteners
        vi. Support Columns (where required): 4” or 6” x 1/8”-1/4” square tube
        vii. Clevis: Aluminum alloy 6061-T6 threaded to accept tie rod.
        viii. Tie Rod: Solid aluminum alloy 6061-T6 rod; ¾” thick.
        ix. Tie Rod Compression Sleeve (when required by engineering): Aluminum alloy 6005-T5 Ø3/4” pipe
    2. Mounting:
        i. Steel Knife Plates: ASTM A36/A36M formed and welded carbon steel hanger brackets
        ii. Direct Fastening: corrosion resistant wood lag screws or concrete screw anchors
B. Guardrail System:
    1. Components:
        i. Top Rail: Rounded top with flat sides. Matching sleeves at railing corners and ends.
        ii. Posts: 2” or 3” 1/16”-1/8” square tube
        iii. Infill

1. 3/4" square tube or 3/4" x 1/2" rectangular tube, wall thickness of 0.050", spacing no greater than 4.606"
2. Perforated Panel: 1/8” thick, formed aluminum panel
3. Glass Panel: code-complaint glass; 1/4"-1/2” thickness
4. Mid/Bottom Rails: 1-1/4” x 1-1/2” x 0.09” aluminum tube

iv. Connecting Brackets:
1. Formed: 1/8” thick, formed aluminum brackets
2. Cast: A369 cast brackets and baseplates
3. Extruded: aluminum extruded sleeves

v. Handrail System: Ø1-1/2” OD round aluminum tube

2. Mounting:
i. Anchoring system capable of withstanding structural design load stated. Posts top mounted to deck frame members or building substrate.

3. Guardrail Termination at Walls:
i. Posts to be used at railing termination points such as building walls or support columns in addition to upper wall mounts connecting to the building and/or columns to reduce guardrail deflection

C. Hardware: All steel fasteners to be corrosion resistant

**2.05. FABRICATION:**

A. Fabricate deck assembly to design dimensions, details, and specified requirements for structural performance
B. Verify dimensions on site prior to fabrication

## 3 EXECUTION

**3.01. INSTALLATION:**

A. Install work in accordance with final shop drawings and manufacturer's instructions
B. Install balconies with a 1/8” per foot downward slope away from the building
C. Erect railings plumb, square and level, free from distortion or defects detrimental to appearance or performance
D. Anchor railing and/or deck posts to footings with approved corrosion resistant fasteners
E. Install hardware in the field per the hardware manufacturer’s recommendations

**3.02. CLEANING:**

A. To clean, use soft cloth/sponge with mild detergent, rinse thoroughly with warm water. For stubborn dirt, use a non-abrasive cleaner, such as 409, rinse with warm water
B. Do not use acid solutions, steel wool, harsh abrasives or solvents such as acids, bleach, chlorine or salt-based chemicals, or pressure washers over 1500 PSI

**3.03. PROTECTION:**

A. Protect installed products from damage during subsequent construction

**END 05 59 13**