

SECTION 057300 - DECORATIVE METAL SCREENS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Decorative screens

1.2 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Manufacturer's product lines of screens assembled from standard components.
 - 2. Grout, anchoring cement, and paint products.
- B. Shop Drawings: Include plans, elevations, sections, and attachment details.
- C. Samples:
 - 1. For each type of exposed finish required.
 - 2. 24 inch by 24 inch section of screen material.
 - 3. 12 inch long section of support tubing and framework.
- D. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer registered in the State of New York and responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, according to ASTM E894 and ASTM E935.
- B. Preconstruction test reports.
- C. Evaluation Reports: For post-installed anchors, from ICC-ES.

1.4 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
 - 1. Build mockups for each form and finish of screen assembly consisting of two posts, bottom and top rails, perimeter frame rail, infill area, and anchorage system components.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Aluminum Decorative Screen:

1. Hendrick Architectural: Hendrickarch.com or call 877-840-0881.
2. An approved equal.

B. Products:

1. Style- Composition Folly perforated screen by Hendrick Architectural or an approved equal.

C. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics.

1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer registered in the State of New York, to design screen assembly, including attachment to building construction.

B. Structural Performance: Screen assemblies, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Infill Screen Panels:
 - a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
 - b. Infill load and other loads need not be assumed to act concurrently.

2.3 METALS, GENERAL

A. Brackets, Flanges, and Anchors: Same metal and finish as supported rails unless otherwise indicated.

2.4 ALUMINUM

A. Aluminum, **General**: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with strength and durability properties for each aluminum form required not less than that of alloy and temper designated below.

- B. Extruded Bars and Shapes Including Extruded Tubing: ASTM B221 Alloy 6063-T5/T52.
- C. Extruded Structural Tubing and Channels ASTM B429, Alloy 6063-T6.
- D. Drawn Seamless Tubing: ASTM B210 , Alloy 6063-T832.
- E. Plate and Sheet: ASTM B209 Alloy 5005-H32.
- F. Die and Hand Forgings: ASTM B247, Alloy 6061-T6.
- G. Castings: ASTM B26, Alloy A356.0-T6.
- H. Perforated Metal: Aluminum sheet, ASTM B209, Alloy 6061-T6 ,.125 thick, random holes 1/2" inch – 1" diameter staggered rows/random patter. 60% open area.

2.5 FASTENERS

- A. Fastener Materials: Unless otherwise indicated, provide the following:
 - 1. Aluminum Components: Type 304 stainless steel fasteners. ICC-ES AC193 is for mechanical anchors and ICC-ES AC308 is for adhesive anchors.
- B. Post-Installed Anchors: Fastener systems with working capacity greater than or equal to the design load, according to an evaluation report acceptable by authorities having jurisdiction, based on ICC-ES AC193 Material in "Material for Interior Locations" Subparagraph below protects against corrosion in an indoor atmosphere.
- C.
 - 1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 (A1) stainless steel bolts, ASTM F593, and nuts, ASTM F594.

2.6 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Connections: Fabricate railings with non-welded connections unless otherwise indicated.
- C. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 1 welds; no evidence of a welded joint.

- D. Brazed Connections: Connect copper-alloy railings by brazing. Cope components at connections to provide close fit, or use fittings designed for this purpose. Braze corners and seams continuously.
 - 1. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and brazed surface matches contours of adjoining surfaces.
- E. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
- F. Form changes in direction by inserting prefabricated elbow fittings.
- G. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- H. Close exposed ends of hollow railing members with prefabricated end fittings.
- I. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated.
- J. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.
- K. Perforated-Metal Infill Panels: Fabricate infill panels from perforated metal made from aluminum as railings in which they are installed.
 - 1. Edge panels with U-shaped channels made from metal sheet, of same metal as perforated metal and not less than 0.043 inch (1.1 mm) thick.

2.7 ALUMINUM FINISHES

- A. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
 - 1. Screens: Color - Champagne.
 - 2. Framework: Color – Clear anodized

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Fit exposed connections together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

1. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 2. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- C. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
1. Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- D. Use aluminum shoe brackets anchored into concrete for installing posts as indicated on the drawings.
- E. Anchor frames to concrete and masonry with clip angles as indicated on the drawings.
- F. Attach screen panels to walls with wall brackets as indicated on the drawings.
1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolts.
 2. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- G. Secure wall brackets and railing end flanges to building construction as follows:
1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
 2. For hollow masonry anchorage, use toggle bolts.
- H. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

END OF SECTION 057300