

PREFABRICATED MODULAR MULTI-STORY STEP SYSTEM SPECIFICATIONS

PART 1 – GENERAL

1.1 References

- 1.1.1 ADA Accessibility Guidelines (ADAAG) (1991, as amended through 2002)
- 1.1.2 ADA and ABA Accessibility Guidelines (7/23/04)
- 1.1.3 International Building Code 2006

1.2 Submittals

- 1.2.1 Shop Drawings: detailed shop drawings to be submitted upon receipt of purchase order including:
 - 1.2.1.1 Overall layout dimensions
 - 1.2.1.2 Detailed shop weldment drawings
 - 1.2.1.3 Footer layout drawings when requested
- 1.2.2 Warranty Statement must be submitted with bid
- 1.2.3 Product specifications must be submitted with bid
- 1.2.4 Engineering: Professional Engineering sealed drawings to be submitted when requested

1.3 Quality Assurance

- 1.3.1 Acceptable manufacturer: Upside Innovations, LLC, 5470 Spellmire Dr., West Chester, OH 45246. Phone: (513) 889-2492; Fax: (513) 672-2124 or a contract manufacturer as approved by the Upside Innovations, LLC, Supplier Quality Review process.
- 1.3.2 Aluminum welding will be in accordance with ANSI / AWS D1.2/D1.2M: 2008. Welding shall be performed solely with Pulsed Gas Metal Arc Welding (MIG) processes or Gas Tungsten Arc Welding (TIG) processes by experienced operators.
- 1.3.3 All exposed surfaces shall be free of sharp or jagged surfaces.
- 1.3.4 Warranty: Upside Innovations, LLC warrants its products to be free from defects in material and workmanship for a period of two years beginning at the date of delivery of product. This warranty excludes any defects resulting from abnormal use in installation, service, accidental or intentional damage or any occurrences beyond the manufacturer's control.

1.4 MATERIALS

- 1.4.1 All Platforms, Steps, Legs, and Guardrails are constructed of mill finish aluminum extrusions and mill finish aluminum sheet. Extrusions are either, 6061-T6, 6063-T52, or 6005-T5 aluminum alloy and all aluminum sheet is 5052-H32. Powder coating in custom colors is available upon request.
- 1.4.2 All mechanical fasteners are 18-8 Stainless Steel. All anchors and lag bolts are galvanized steel.

1.5 ENGINEERING

- 1.5.1 The Step, and Platform system is designed to be a rigid, free-standing structure. All footplates should be fastened securely to a concrete surface or 12" minimum diameter footings in order to achieve full structural integrity. Footing depth will depend on local building code. Fastening all platforms to the building or modular building with lag screws is highly recommended.

PART 2 – PRODUCT COMPONENTS

2.1 PLATFORMS & LANDINGS

- 2.1.1 Walking surfaces are designed to carry a uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds in an area of one square foot.
- 2.1.2 Platform sections are fabricated in typical lengths between 48" and 96" in each 8" increment. Custom lengths can be fabricated as requested.
- 2.1.3 Walking surfaces are designed to have a coefficient of friction no less than 0.50 in all directions of travel.

- 2.1.4 Walking surfaces are designed and constructed to be continuous, without gaps and shall be made using 1-1/2" x 8" extruded decking. The outside legs of each piece of extrusion should be touching the adjacent piece in order to create a hard stop for structural support.
- 2.1.5 All platforms are designed to be wider than the step leading up to them and at least 60" long in the direction of travel.
- 2.1.6 All platforms are designed to allow at least a 60" diameter area of clearance free of obstructions.
- 2.1.7 Platforms shall be fabricated in typical 5'-4" x 5'-4" sections. Larger sizes will be fabricated as required by layout.
- 2.1.8 Platforms shall be designed as a universal design, so that a common platform can be configured as a resting platform, switchback platform, turning platform, walkway platform, or threshold landing platform.

2.2 PLATFORM LEGS

- 2.2.1 All legs are designed to support the steps and platforms / landings (See sections 2.1.1 & 2.3.1)
- 2.2.2 Platform legs shall be designed using a minimum of 3" x 3" x 0.125" aluminum square tube that connects to the platform and a telescoping 2.7" x 2.7" x 0.125" aluminum square tube with a 6" x 6" x .190" welded foot pad. The legs are bolted wall to wall with two 18-8 stainless steel bolts. The telescoping feature allows leg adjustment in order to meet elevation changes.
- 2.2.3 Depending on total height of platforms, legs can increase in size based on structural design.
- 2.2.4 When needed, 2" x 2" x 3/16" aluminum angle is used for cross-bracing platform legs. As heights are increased cross-bracing sizing will be increased in order to provide structural integrity.

2.3 STEPS

- 2.3.1 Step treads and stringers are designed to carry a uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds in an area of one square foot.
- 2.3.2 Walking surfaces are designed to have a coefficient of friction no less than 0.50 in the normal direction of travel.
- 2.3.3 Steps are designed to allow a clearance of 48" between handrails.
- 2.3.4 All step treads are designed to have a uniform depth of 12" with a 1" nosing for an effective run of 11" minimum per step, INCLUDING THE TOP STEP ONTO THE PLATFORM / LANDING.
- 2.3.5 All step nosings have a uniform radius of ¼" and an underside angle of 60 degrees from the horizontal.
- 2.3.6 Step treads are designed to have a uniform height of either 6", 6-½", or 7" depending on the overall height of the step assembly. All step risers are closed between treads.
- 2.3.7 Step treads are designed to allow a clearance of 48" between handrails.

2.4 STEP RAILS

- 2.4.1 All step rails are designed to withstand a concentrated load of 200 pounds applied in any direction on the top of the rail.
- 2.4.2 **Steps over 30"**: Step rails for steps with a vertical rise over 30" shall have a 42" guardrail in addition to the 36" handrail.
- 2.4.3 **Steps 30" or under**: Step rails for steps at 30" or under do not require a 42" guardrail.
- 2.4.4 All baluster panels and other custom rail panels are designed to withstand a load of 50 pounds in the horizontal direction applied in an area of one square foot.
- 2.4.5 All step rails will not allow a 4" diameter sphere to pass through in any area.
- 2.4.6 Step rails are provided on both sides of the step treads.
- 2.4.7 All step handrails are designed to be continuous along step runs and in between the inside corner of 90 degree and 180 degree turns in step direction. Handrails are not interrupted by posts or other obstructions.
- 2.4.8 All handrails have a clearance of 2-1/4" between the handrail and the guardrail. Handrails are to be constructed of 1-1/4" SCH 40 Pipe with an outside diameter of 1.66".
- 2.4.9 Step handrails are designed to be 36" high measured vertically from the top of the step nosing to the top of the rail.
- 2.4.10 Step handrails extend 12" past the top Step Nosing parallel to the ground surface and return to the closest rail post or wall if needed due to door swing interference at the top of the step. Step

handrails also extend one tread width past the bottom step tread (11") plus an additional 12" parallel to the ground surface and return to the closest rail post.

- 2.4.11 All step rail frames are to be constructed at minimum with 1- $\frac{3}{4}$ " x 1- $\frac{3}{4}$ " aluminum square tube.
- 2.4.12 All baluster panels are to be constructed at minimum with $\frac{3}{4}$ " x $\frac{3}{4}$ " aluminum square tube.