

1. Product Name

Integrated™ Railing Post 3-1/2" (with Flange)

2. Manufacturer

Formulated Materials, LLC
3010 NW 149th St., SUITE 100
Oklahoma City, OK 73134
Tech Services : (844) 405-3676

www.formulatedmaterials.com

www.formulated.info

3. Product Description

The Integrated™ Railing Post 3 1/2" (With Flange) is a powder-coated extruded 6063-T6 aluminum post designed for direct surface-mount applications within the Integrated™ Railing System. The post features a 0.125" wall thickness and a factory-welded base flange (mounting plate) with 3/8" thick base plate and 5/16" fillet weld all around. The flange includes 3/8" diameter bolt holes in each corner for structural fastening. This mounting method is designed for traditional drip-through balcony and deck constructions where water passes freely through the deck surface. The post is engineered to meet 2021 IBC design load performance requirements when properly installed.

Key Features

- Extruded 6063-T6 aluminum construction for strength and corrosion resistance
- 3-1/2" square profile with 0.125" wall thickness
- Factory-welded base flange: 5-3/16" square x 3/8" thick base plate with 5/16" fillet weld all around
- Base plate includes 3/8" diameter bolt holes in each corner
- AAMA 2604 powder-coated finish for long-lasting color retention
- Meets 2021 IBC design load performance requirements (Intertek Report P2566.01-119-19 R0)
- Accepts top and bottom rail level brackets via pre-drilled pilot holes
- Compatible with all Integrated™ Railing System components
- Designed for use in conjunction with the Integrated™ waterproofing system

Where to Use

- Drip-through balconies with wood or composite decking over structural framing
- Multifamily balconies and walkways
- Hotel and condominium balconies
- Commercial exterior decks and terraces
- Apartment complexes
- Renovation of aging wood frame or concrete structures



Product Composition

Extruded 6063-T6 aluminum (post); 3/8" thick aluminum base plate with 5/16" fillet weld all around; AAMA 2604 powder-coated finish

Product Limitations

- Install per current published instructions only.
- Do not modify, cut, or weld posts in the field without written authorization from Formulated Materials.
- Not intended for use as a structural building support.
- Post must be installed plumb. Verify alignment before securing.
- Never attach posts to deck boards alone. Fasteners must penetrate into structural framing or blocking.
- Mounting flange holes are 3/8" in diameter; use 3/8" diameter structural screws.
- Applying paint other than Formulated Materials' authorized touch-up paint will void the product warranty.
- Limitations not to be construed as all-inclusive.

Packaging

100 Posts per pallet

4. Technical Data

Applicable Standards

Standard	Description
2021 IBC	International Building Code®, International Code Council
2021 IRC	International Residential Code®, International Code Council
IBC Ch. 17	Structural Tests and Special Inspections

Structural Performance — 3-1/2" Post (Stand-Alone Test)

Test	Design Load	Result
Concentrated Load at Top of Post	315 lb	Achieved 2.5x (787 lb) without failure
Ultimate Load	857 lb	Post failure above weld
Recovery from 2.0x Design Load	—	73%

3-1/2 in post tested as stand-alone (conservatively without railing attached). Post meets 2021 IBC design load performance requirements.

Structural performance testing was conducted by Intertek Building & Construction (Report No. P2566.01-119-19 R0, dated 11/16/22) in accordance with the 2021 IBC on the Integrated™ Railing System. The 72 in wide by 42 in high guardrail assembly with 3-1/2 in post mount met the 2021 IBC design load performance requirements. All tested components achieved 2.5 times design load without failure. Anchorage of support posts to the supporting structure was not included in the scope of testing and must be evaluated separately per project requirements.

5. Instructions

Tools Required

- Safety glasses
- Tape measure and pencil
- Power drill with T25 Torx bit
- 1/8" drill bit for pilot holes
- Level (minimum 24")
- 1/2" wrench or socket for leveling bolts
- File (for deburring any cut edges)
- Pilot hole tool (included in post kit)

Jobsite Conditions

- Substrate must be structurally sound and capable of supporting required railing loads per applicable building code.
- Deck surface must be clean, dry, and free of debris at post locations.
- Wood blocking (minimum 3-1/2" thickness) must be installed where structural framing does not align with post locations.
- Verify all components are present before beginning: post, post cap, post skirt, pilot hole tool, leveling plate.

Surface Prep

Confirm deck substrate is structurally sound and meets minimum thickness requirements. Verify structural framing or blocking is present at each post location. Mark post locations per railing layout drawings, ensuring internal spacing of 71" for 6' sections or 59" for 5' sections when using full panels.

Installation of Product

1. Mark the post for top and bottom bracket height positions.
2. Using a 1/8" drill bit, drill pilot holes at the marked locations. Precise positioning of pilot holes is crucial for both structural integrity and aesthetic appeal.
3. Align top and bottom rail level brackets with the pre-drilled pilot holes.
4. Using a drill driver with a T25 Torx bit, fasten brackets to the top and bottom of the post using the provided Torx head self-tapping screws. Do not fully tighten the first screw in each bracket — leave slightly loose to allow for adjustment when installing the second screw. After both screws are in place, tighten all screws fully.
5. Ensure all brackets are tightly secured to the post before proceeding.
6. Measure and position posts according to the railing layout. Place the leveling plate between the post mounting flange and the deck surface.
7. Using long structural screws (not included), fasten the flanged post through the decking and into the structural framing below. Mounting flange holes are 3/8" in diameter; use 3/8" diameter structural screws. Never attach the post to deck boards alone.
8. Partially tighten fasteners, then use a level to confirm the post is plumb. Using a 1/2" wrench or socket, turn leveling bolts to fine-tune alignment.
9. Once plumb and square, fully tighten all fasteners.
10. Install post skirt (trim base) around the base of the post. Align the two skirt halves parallel with the rail direction for best appearance and press together. Post skirts do not require screws — the two halves wedge together with gentle taps of a rubber mallet.

Storage & Protection

- Store in a dry, covered area to prevent damage to the powder-coated finish.
- Do not stack posts directly on concrete or abrasive surfaces without protective padding.
- Avoid prolonged contact with dissimilar metals to prevent galvanic corrosion.

Health Precautions

- Follow all local safety regulations, including OSHA Section V: Chapter 4 for Fall Protection in Construction.
- Always wear safety glasses when cutting, drilling, and assembling the product. Use hearing protection when operating power saws.
- Always review the full label and Safety Data Sheet (SDS) for detailed precautionary instructions before use.

Conformance to Building Codes

Installation must comply with all applicable local, state, and federal codes, regulations, and industry standards. The installer is solely responsible for ensuring compliance with all local building codes and safety requirements, and for obtaining all required building permits.

6. Availability

Item	Description	Size	Qty/Unit	Per Pallet
10606	Railing Post 3 1/2" (with Flange)	5-3/16 x 5-3/16 x 44"	100/pallet	100

7. Product Warranty

For details and complete warranty information, visit www.formulatedmaterials.com.

8. Product Maintenance

Properly installed products do not require ongoing maintenance. For coastal installations (within one mile of saltwater coastline), clean railing surfaces quarterly with mild soap and water to maintain finish warranty coverage. Refer to the Integrated™ Railing System Limited Warranty for complete care and maintenance requirements.

9. Technical Services Information

For Technical Services, contact Formulated Materials at (844) 405-3676.

10. Filing System

Additional product information is available from Formulated Materials upon request.



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