Installation Manual For
AL13 Aluminum Rail

Call 1-800-335-5909 for Installation Support

Extra Screws Included
Fortress Al\textsuperscript{13} 3” Post Mounting Applications (USA)

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. The Fortress Company or its distributors shall not be held liable for improper or unsafe installations.

Fortress Al\textsuperscript{13} Posts must always be secured to the deck framing. Fortress Al\textsuperscript{13} Posts should never be attached to only the deck boards.

Note
When cutting Fortress railing, it is very important to complete the following at cut points. Not following the below steps will result in rust at the cut areas:
• Remove all metal shavings from the cut area
• File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
• Apply two coats of Fortress zinc based touch-up paint to the cut area. Allow paint to dry.
• Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent rust on the surface.

Al\textsuperscript{13} 3 Inch Post Top Mount To南方黄松或道格拉斯冷杉楼架钉装平行

Al\textsuperscript{13} 3 Inch Post with through bolt & base plate on bottom

Al\textsuperscript{13} 3 Inch Post Top Mount To南方黄松或道格拉斯冷杉楼架钉装垂直

Al\textsuperscript{13} 3 Inch Post with through bolt & base plate on bottom

Al\textsuperscript{13} 3 Inch Post Top Mount To南方黄松或道格拉斯冷杉楼架钉装平行

Al\textsuperscript{13} 3 Inch Post with through bolt & base plate on bottom

2.76 MPa (400 psi) MIN. Concrete

Southern Pine or Douglas Fir Framing

9/16” min edge distance Typ.

3/8” Flat Washer

Southern Pine of Douglas Fir Deck Board

3/8” diameter X 3” long ‘Redhead’ Trubolt

Al\textsuperscript{13} 3” Post

3/8” Flat Washer

Southern Pine of Douglas Fir Deck Board

3/8” diameter Hex Head Bolts

3/8” Flat Washer

Southern Pine or Douglas Fir Deck Board

3/8” Hex Nut

Post Anchor Base Plate

2” X 10” Southern Pine or Douglas Fir Deck Board Blocking

3/8” Flat Washer

Southern Pine or Douglas Fir Framing

9/16” min. edge distance Typ.

Please contact ADI with any questions:
Ph: 1-800-335-5909          Web:  www.absolutedist.com
Fax: 800-203-4495             Email:  sales@absolutedist.com
Installation Instructions for Fortress $^{26}$Fe and $^{13}$Al Posts on a Concrete Deck Surface

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. The Fortress Company or its distributors shall not be held liable for improper or unsafe installations.

Note
When cutting Fortress $^{26}$Fe or $^{13}$Al Posts, it is very important to complete the following at cut points. Not following the below steps will result in rust at the cut areas:
• Remove all metal shavings from the cut area
• File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
• For $^{26}$Fe Posts Apply two coats of Fortress zinc based touch-up paint to the cut area. If touch up is at rail ends, allow paint to dry before connecting bracket to post.
• Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent stains on the surface.

Secure Fortress $^{26}$Fe or $^{13}$Al Posts to concrete deck surfaces with 3/8” Concrete Wedge Anchors. Follow Concrete Wedge Anchor manufactures installation instructions.
Installation Instructions for Fortress
Al³ Traditional Railing Panels with
Evolve External Brackets and Al³ Posts

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. Fortress Railing Products and its distributors shall not be held liable for improper or unsafe installations.

Fortress Al³ Posts must always be secured to the deck framing. Fortress Al³ Posts should never be attached to only the deck boards.

Read Instructions Completely Before Starting Installation

Note
When cutting Fortress railing, it is very important to complete the following at cut points.
• Remove all metal shavings from the cut area
• File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
• Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent stains on the deck surface.

Torx Safety Tips
• Always pre-drill holes with a 3/16” drill bit.
• Always use the lowest speed setting on drill.
• To reduce chance of bit breakage, start tightening with drill on low torque setting and work up until screw is secured.

Required Materials
Miter saw with fine tooth blade, Drill, 1/16” and 3/16” Drill Bits, T-25 Driver Bit, Phillip’s Head Screwdriver, Drill Bit Extender, Tape Measure, Wrenches, Speed Square, Center Punch, 3-1/2” Support Blocks and Hammer.

Mount Al³ Posts*
• Wood Blocking tied to deck frame must be installed and constructed with treated dimensional lumber with a minimum thickness of 1-1/2”.
• Al³ 3” Post Spacing must not exceed 96” for 8’ Panels and 72” for 6’ Panels.
• Position the edge of post base plate a minimum of 1/2” from the inside edge of rim joist.
• Place included Base Plate Barrier between post base and deck surface.
• Mount posts at appropriate points based on panel length.
• Attach Al³ posts with 3/8 X 3-1/2” Hex Head galvanized bolts.

*Reference Fortress Al³ Post mounting instructions

Please contact ADI with any questions:
Ph: 1-800-335-5909          Web: www.absolutedist.com
Fax: 800-203-4495             Email: sales@absolutedist.com
Al Traditional Panel Installation Options

Al Pressed Fit Ball Cap
Evolve External Cap

Evolve External Cup

Al Pressed Fit Flat Pyramid Cap
Evolve External Cap

Evolve External Cup

Al Traditional Panel 69” or 93”

Al Support Block (Optional)

Al Post with Post Base Cover

Al Traditional Panel with Al Accent Top Panel Installation Options

Al Pressed Fit Ball Cap
Evolve External Cap

Al Accent Top Panel

Evolve Large External Cap

Evolve Large External Cap

Evolve External Cup

Evolve External Cup

Al Traditional Panel 69” or 93”

Al Support Block (Optional)

Al Post with Post Base Cover
**Al\textsuperscript{13} Traditional Panel Installation (Without Al\textsuperscript{13} Accent Top Panel) with Evolve External Bracket**

- If installing Al\textsuperscript{13} Traditional Panel with an Al\textsuperscript{13} Accent Top Panel (ATP), disregard this box and proceed to next installation step.
- Check Al\textsuperscript{13} Posts to ensure that all Al\textsuperscript{13} Posts are square and straight. Shim Al\textsuperscript{13} Posts as required.
- Support Al\textsuperscript{13} Traditional Panel on 3-1/2” support blocks.
- Center Al\textsuperscript{13} Traditional Panel between the Al\textsuperscript{13} Posts so that there is an equal distance between the last baluster and Al\textsuperscript{13} Posts at each end.
- **Minimum distance between the last baluster and post is 1-5/8”**
- Clamp Rail to Post at each end to prevent movement. Place a piece of cardboard between clamp and Al\textsuperscript{13} Post & Panel.
- Mark the rails 1/4” from the edge of the posts.
- The final rail length when cut must be 1/2” shorter to allow for Evolve Bracket clearance.

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**Al\textsuperscript{13} Traditional Panel Installation with Evolve External & Evolve External Large Brackets (With Al\textsuperscript{13} Accent Top Panel)**

- Check posts to ensure that all posts are square and straight. Shim posts as required.
- Support Al\textsuperscript{13} Traditional Panel on 3-1/2” support blocks.
- Center Al\textsuperscript{13} Traditional Panel between the post so that there is an equal distance between the last baluster and post at each end.
- **Minimum distance between the last baluster and post is 1-5/8”**
- **Maximum distance between the last baluster and post is 3-15/16”**
- Clamp Rail to Post at each end to prevent movement. Place a piece of cardboard between clamp and Al\textsuperscript{13} Post & Panel.
- Mark the bottom rail of the Al\textsuperscript{13} Traditional Panel and the top rail of the Al\textsuperscript{13} Accent Top Panel, 1/4” from the edge of the posts.
- The final rail length when cut must be 1/2” shorter to allow for Evolve External Bracket clearance.
**Cutting Al\textsuperscript{13} Traditional Panels**

- The best way to cut Al\textsuperscript{13} Traditional Panels is to use a miter saw.
- A fine tooth carbide tipped blade designed to cut non-ferrous materials is recommended.
- Set up a work surface that is level and large enough to support all four corners of the Al\textsuperscript{13} Traditional Panel.
- Supports should be the same height as saw base to keep Al\textsuperscript{13} Traditional Panel straight and level when cutting.
- With Panels completely supported, make cuts at the marked locations from previous step.
- Remove any burrs or shavings from cut edges.
- Check the fit of Al\textsuperscript{13} Traditional Panel between post. **Be careful not to scratch post with end cuts.**

**Al\textsuperscript{13} Support Block Installation**

- Al\textsuperscript{13} Support Block is recommended for rail spans over 72”.
- Mark the center of Al\textsuperscript{13} Traditional Panel Bottom Rail.
- Position Al\textsuperscript{13} Support Block and mark hole locations.
- Pre-drill with a 3/16” Drill Bit
- Secure Al\textsuperscript{13} Support Block with supplied screws.
### Traditional Panel and Al\textsuperscript{13} Post Configurations

<table>
<thead>
<tr>
<th>Traditional Panel Height</th>
<th>Installed Panel Height*</th>
<th>Required Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>34&quot;</td>
<td>37-1/2&quot;</td>
<td>39-1/2&quot;</td>
</tr>
<tr>
<td>40&quot;</td>
<td>43-1/2&quot;</td>
<td>45-1/2&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Traditional Panel Only</th>
<th>Installed Panel Height</th>
<th>Required Post</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>42-1/2&quot;</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>45-1/2&quot;</td>
<td>X</td>
</tr>
</tbody>
</table>

*Installed heights include a 3-1/2" space between deck surface and bottom edge of bottom rail.

### Evolve External Bracket Hole Locations for Al\textsuperscript{13} Traditional Panel Installations

**Pre-Drilling with a 3/16" drill bit is required.**

<table>
<thead>
<tr>
<th>Rail Panel Height</th>
<th>Pre-Drill Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>34&quot;</td>
<td>A* 3-13/16&quot; B 1/2&quot; C 36-11/16&quot; D 13/16&quot;</td>
</tr>
<tr>
<td>40&quot;</td>
<td>3-13/16&quot; B 1/2&quot; 42-11/16&quot; D 13/16&quot;</td>
</tr>
</tbody>
</table>

*Dimension A positions bottom edge of rail 3-1/2" above deck surface. *Dimension A is measured from the bottom surface of post base.

Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post to prevent corrosion.

### Al\textsuperscript{13} Traditional Panel Installation with Evolve External Brackets (Without Al\textsuperscript{13} Accent Top Panel)

When using Evolve External Brackets, rails MUST be cut 1/2" shorter than the distance between posts. 1/4" should be cut from the end of each rail to keep rail panel centered between posts.

- If rails were cut, file cut edges.
- Check fit of rail between installed Al\textsuperscript{13} Posts.
- Install Al\textsuperscript{13} Post Base Cover by sliding over the top of Al\textsuperscript{13} Post.
- Secure External brackets to Al\textsuperscript{13} Posts with provided T25 thread-cutting screws. Use two screws per bracket.

Use low speed setting on drill.

- Drop Al\textsuperscript{13} Traditional Panel into installed External brackets.
- Secure rails with provided T25 thread-cutting screws at each External bracket.
- Install External Caps by sliding the cap over the External Cup. Cap will snap into place.
Pre-Drilling with a 3/16” drill bit is required.

<table>
<thead>
<tr>
<th>Traditional Panel Height</th>
<th>Pre-Drill Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>34”</td>
<td>A* 3-13/16” 1/2” 1/2” 36-11/16” 5-1/16” 13/16” 13/16”</td>
</tr>
<tr>
<td>40”</td>
<td>X X X X X X X</td>
</tr>
</tbody>
</table>

*Dimension A positions bottom edge of rail 3-1/2” above deck surface.
*Dimension A is measured from the bottom surface of post base.

Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post to prevent corrosion.

**Al**<sup>13</sup> Traditional Panel Installation with Evolve External and Evolve External Large Brackets (With Al<sup>13</sup> Accent Top Panel)

When using Evolve External Brackets, rails MUST be cut 1/2” shorter than the distance between posts. 1/4” should be cut from the end of each rail to keep rail panel centered between posts.
- If rails were cut, file cut edges.
- Check fit of rail between installed Al<sup>13</sup> Posts.
- Install Al<sup>13</sup> Post Base Cover by sliding over the top of Al<sup>13</sup> Post.
- Slide Al<sup>13</sup> Accent Top Panel panel over the top rail of the Al<sup>13</sup> Traditional Panel.
- Secure External brackets to Al<sup>13</sup>Posts with provided T25 thread-cutting screws. Use two screws per bracket. Use low speed setting on drill.
- Drop Al<sup>13</sup> Panel into installed External brackets.
- Secure rails with provided T25 thread-cutting screws at each External bracket.
- Install External Caps by sliding the cap over the External Cup. Cap will snap into place.
Installation Instructions for Fortress
Railing Al
Traditional Panels with
Evolve Internal Brackets and Al Posts

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. The Fortress Company or its distributors shall not be held liable for improper or unsafe installations.

Fortress Al Posts must always be secured to the deck framing. Fortress Al Posts should never be attached to only the deck boards.

Read Instructions Completely Before Starting Installation

Note
When cutting Fortress railing, it is very important to complete the following at cut points.
• Remove all metal shavings from the cut area
• File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
• Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent stains on the deck surface.

Required Materials
Miter saw with fine tooth blade, Drill, 1/16” and 3/16” Drill Bits, T-25 Driver Bit, Phillip’s Head Screwdriver, Drill Bit Extender, Tape Measure, Wrenches, Speed Square, Center Punch, 3-1/2” Support Blocks and Hammer.

Mount Al Posts*
• Wood Blocking tied to deck frame must be installed and constructed with treated dimensional lumber with a minimum thickness of 1-1/2”.
• Al Post Spacing must not exceed 96” for 8’ Panels and 72” for 6’ Panels.
• Position the edge of post base plate a minimum of ½” from the inside edge of rim joist.
• Place included Base Plate Barrier between post base and deck surface.
• Mount posts at appropriate points based on panel length.
• Attach Al posts with 3/8 X 3-1/2” Hex Head galvanized bolts.

*Reference Fortress Al Post mounting instructions

Please contact ADI with any questions:
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Fax: 800-203-4495             Email: sales@absolutedist.com
**Al13 Traditional Panel Installation Options**

- Al13 Press Fit
  - Ball Cap
  - Evolve Internal Bracket

- Al13 Post Base Cover

- Al13 Traditional Panel 69" or 93"

- 3.5" Al13 I-Support Block (Optional)

**Al13 Traditional Panel with Al13 Accent Top Panel Installation Options**

- Al13 Press Fit
  - Pyramid Cap

- Evolve Internal Bracket

- Al13 Accent Top Panel (ATP)

- Evolve Internal Bracket

- Evolve P2 Bracket

- 3.5" Al13 I-Support Block (Optional)

- Al13 Post Base Cover

- Al13 Traditional Panel 69" or 93"
**Al\textsuperscript{13} Traditional Panel and Al\textsuperscript{13} Post Configurations**

<table>
<thead>
<tr>
<th>Traditional Panel Height</th>
<th>Traditional Panel without Al\textsuperscript{13} Accent Top Panel</th>
<th>Traditional Panel with Al\textsuperscript{13} Accent Top Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Installed Panel Height</td>
<td>Required Post</td>
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<tr>
<td>40&quot;</td>
<td>43-1/2&quot;</td>
<td>45-1/2&quot;</td>
</tr>
</tbody>
</table>

*Installed heights includes a 3-1/2” space between deck surface and bottom edge of bottom rail.

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**Al\textsuperscript{13} Traditional Panel Installation (Without Al\textsuperscript{13} Accent Top Panel) with Evolve Internal Bracket**

- If installing Al\textsuperscript{13} Traditional Panel with an Al\textsuperscript{13} Accent Top Panel (ATP), disregard this box and proceed to next installation step.
- Check Al\textsuperscript{13} Posts to ensure that all Al\textsuperscript{13} Posts are square and straight. Shim Al\textsuperscript{13} Posts as required.
- Support Al\textsuperscript{13} Traditional Panel on 3-1/2” support blocks.
- Center Al\textsuperscript{13} Traditional Panel between the Al\textsuperscript{13} Posts so that there is an equal distance between the last baluster and Al\textsuperscript{13} Posts at each end.
- **Minimum distance between the last baluster and post is 1”**
- Clamp Rail to Post at each end to prevent movement. **Place a piece of cardboard between clamp and Al\textsuperscript{13} Post & Panel**
- Mark the rails 1/4” from the edge of the posts.
- The final rail length when cut must be 1/2” shorter to allow for Evolve Bracket clearance.
Cutting Al\textsuperscript{13} Traditional Panels
• The best way to cut Al\textsuperscript{13} Traditional Panels is to use a miter saw.
• A fine tooth carbide tipped blade designed to cut non-ferrous materials is recommended.
• Set up a work surface that is level and large enough to support all four corners of the Al\textsuperscript{13} Traditional Panel.
• Supports should be the same height as saw base to keep Al\textsuperscript{13} Traditional Panel straight and level when cutting.
• With Panels completely supported, make cuts at the marked locations from previous step.
• Remove any burrs or shavings from cut edges.
• Check the fit of Al\textsuperscript{13} Traditional Panel between post. Be careful not to scratch post with end cuts.

Al\textsuperscript{13} Traditional Panel Installation with Evolve Internal & Evolve P2 Brackets
(With Al\textsuperscript{13} Accent Top Panel)
• Check posts to ensure that all posts are square and straight. Shim posts as required.
• Support Al\textsuperscript{13} Traditional Panel on 3-1/2” support blocks.
• Center Al\textsuperscript{13} Traditional Panel between the post so that there is an equal distance between the last baluster and post at each end.
• Minimum distance between the last baluster and post is 1-5/8”
• Clamp Rail to Post at each end to prevent movement. Place a piece of cardboard between clamp and Al\textsuperscript{13} Post & Panel.
• Mark the bottom rail of the Al\textsuperscript{13} Traditional Panel and the top rail of the Al\textsuperscript{13} Accent Top Panel, 1/4” from the edge of the posts.
• The final rail length when cut must be 1/2” shorter to allow for Evolve Internal Bracket clearance.
• The mid rail must be cut flush to the post.
Install Al<sup>13</sup> Evolve Internal Brackets into Rail

- If not using an Al<sup>13</sup> Accent Top Panel (ATP), insert an Al<sup>13</sup> Evolve Internal Bracket into the ends of each rail.
- If using an ATP, insert an Al<sup>13</sup> Evolve Internal Bracket into the ends of the bottom rail of the Al<sup>13</sup> Traditional Panel and the top rail of the ATP.
- Do not install set screw at this time.

Install Al<sup>13</sup> Evolve P2 Brackets onto Top Rail (with Al<sup>13</sup> Accent Top Panel)

- If not using an Al<sup>13</sup> Accent Top Panel, disregard this box and proceed to the next step.
- Align flat back of Evolve P2 Bracket flush with the end of the top rail of the Al<sup>13</sup> Traditional Panel.
- Center the circular portion of the Evolve P2 Bracket on the rail.
- Mark the center points of the holes with a pencil. Use a center punch to mark the hole locations.
- Pre-drill screw locations with a 3/16" drill bit.
- Secure Evolve P2 Bracket to Al<sup>13</sup> Traditional Panel with supplied T-25 thread cutting screws.
- Repeat for the other side of the rail.

Al<sup>13</sup> Support Block Installation

- Al<sup>13</sup> Support Block is recommended for rail spans over 72”
- Mark the center of Al<sup>13</sup> Traditional Panel Bottom Rail.
- Position Al<sup>13</sup> Support Block and mark hole locations.
- Pre-drill with a 3/16" Drill Bit
- Secure Al<sup>13</sup> Support Block with supplied screws.
Installing Al\textsuperscript{13} Traditional Panels to Al\textsuperscript{13} Posts (Without Al\textsuperscript{13} Accent Top Panel)

- If using an Al\textsuperscript{13} Accent Top Panel, disregard this box and proceed to next installation step.
- Install Al\textsuperscript{13} Base Covers install them now by sliding over the top of Al\textsuperscript{13} Post.
- Place a 3-1/2" Support near each post.
- Place Al\textsuperscript{13} Traditional Panel with Evolve Brackets and Support Blocks positioned on rail.
- Center Al\textsuperscript{13} Traditional Panel on each Post.
- With Al\textsuperscript{13} Traditional Panel in position, pre-drill screw locations with a 3/16” drill bit.
- Secure Evolve Brackets to Al\textsuperscript{13} Post with supplied T-25 thread cutting screws.
- Pre-drill set screws holes in the 2 top rail Evolve Brackets with a 1/16” drill bit.
- Secure Evolve Internal Brackets to Rail with supplied set screws.
- Install Al\textsuperscript{13} Post Caps

Installing Al\textsuperscript{13} Traditional Panels to Al\textsuperscript{13} Posts (With Al\textsuperscript{13} Accent Top Panel)

- Install Al\textsuperscript{13} Base Covers now by sliding over the top of Al\textsuperscript{13} Post.
- Slide Al\textsuperscript{13} Accent Top Panel over the top rail of the Al\textsuperscript{13} Traditional Panel.
- Place a 3-1/2" Support near each post.
- Place Al\textsuperscript{13} Traditional Panel with Evolve Brackets and Support Blocks positioned on rail.
- Center Al\textsuperscript{13} Traditional Panel on each Al\textsuperscript{13} Post.
- With Panel in position, pre-drill screw locations with a 3/16” drill bit.
- Secure Evolve Brackets to Al\textsuperscript{13} Post with supplied T-25 thread cutting screws.
- Pre-drill 1/16” set screws holes in the 2 top rail Al\textsuperscript{13} Evolve Internal Brackets.
- Secure Evolve Brackets to Rail with supplied set screws.
- Install Al\textsuperscript{13} Post Caps
Installation Instructions for Fortress
Al\textsuperscript{13} Traditional Adjustable Panels with
Evolve Stair Brackets and Al\textsuperscript{13} Posts

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. Fortress Railing Products and its distributors shall not be held liable for improper or unsafe installations.

Fortress Al\textsuperscript{13} Posts must always be secured to the deck framing. Fortress Al\textsuperscript{13} Posts should never be attached to only the deck boards.

Read Instructions Completely Before Starting Installation

Note
When cutting Fortress railing, it is very important to complete the following at cut points. Not following the below steps will result in corrosion at the cut areas:
• Remove all metal shavings from the cut area.
• File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
• Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent corrosion on the surface.

Required Materials
Miter saw with fine tooth blade, Drill, 1/16” and 3/16” Drill Bits, T-25 Torx Driver Bits, Phillip’s Head Screwdrivers, Drill Bit Extender, Tape Measure, Wrenches, Speed Square, Center Punch, 3-1/2” Support Blocks, Clamps, Hammer, Pencil and Eye Protection.

Torx Bits Tips
• Have several bits on hand before starting your installation.
• Always pre-drill holes with a 3/16” drill bit.
• Use the lowest possible torque setting on drill. This will help to minimize breakage and twisting of Torx Bits.

Al\textsuperscript{13} Traditional Adjustable Panels
Al\textsuperscript{13} Traditional Adjustable Panel 8’ (actual length 90.5”)
Available Heights 34” and 40”
Maximum rake angle 45°

Please contact ADI with any questions:
Ph: 1-800-335-5909 Web: www.absolutelydist.com
Fax: 800-203-4495 Email: sales@absolutelydist.com
Important - Every stair installation will be different. The rise and run, post position, and post height all need to be carefully laid out before posts are permanently installed and Fortress Al\textsuperscript{13} Traditional Adjustable panels are cut.

**Mount Al\textsuperscript{13} Posts**
- Wood Blocking tied to deck frame must be installed and constructed with treated dimensional lumber with a minimum thickness of 1-1/2”.
- Position the edge of post base plate a minimum of ½” from the inside edge of rim joist.
- Place included Base Plate Barrier between post base and deck surface.
- Mount posts at appropriate points based on panel length.
- Attach Al\textsuperscript{13} posts with 3/8 X 3-1/2” Hex Head galvanized bolts.

**Determine Rake and Center Al\textsuperscript{13} Traditional Adjustable Panel Between Al\textsuperscript{13} Posts**

Use Al\textsuperscript{13} Traditional Adjustable Panel to determine the angle of stair installation. To do this, use support blocks resting on the stair tread. Position support blocks so that the position of the bottom rail meets the spacing requirement of your building code.

Rake the Al\textsuperscript{13} Traditional Adjustable Panel so that the balusters run parallel with the posts. Center the balusters so that there is an equal amount of rail between the post and baluster at each end (Dimension A).

Make sure that there is a minimum distance of 2-1/2” between the post and first baluster to allow space for the bracket. The maximum allowable distance between the post and the first baluster is 3-15/16”.

Mark location of support blocks on steps. Support Blocks will be used in a later step.

*Reference Fortress Al\textsuperscript{13} Post mounting instructions*
Verify Al\textsuperscript{13} Traditional Adjustable Panel Position and Secure with Clamps

• Verify the position of the Al\textsuperscript{13} Traditional Adjustable Panel. With the help of another person, secure the Al\textsuperscript{13} Traditional Adjustable Panel into the correct position and secure with clamps to Al\textsuperscript{13} Post.
• Place a piece of cardboard between the clamping surfaces and the surfaces of the rails and posts to protect the finish.

Determine Evolve Stair Bracket Assembly Location and Mark Rail

• Do not install the Evolve Stair Bracket Cap at this time.
• Place the Evolve Stair Bracket Assembly against the Al\textsuperscript{13} Post and position the Evolve Stair Bracket Cup so that it is parallel to the rail. With a pencil mark the position on the top of the rail where the rail meets the back wall of the Evolve Stair Bracket Cup. With the Evolve Stair Bracket in the same position, mark a horizontal line on the post right above and below the Evolve Stair Bracket.
• Repeat this step for all four Evolve Stair Bracket locations. In the next step, the Evolve Stair Bracket Assembly will be disassembled and placed between these lines so that hole locations can be marked and drilled.
Pre-Drill and Install Evolve Stair Brackets to Al\textsuperscript{13} Posts

- Remove clamps and Al\textsuperscript{13} Traditional Adjustable Panel.
- Mark the centerline of each post. The Evolve Stair Brackets will be installed on the centerline.
- Remove Chicago Bolt from the Evolve Stair Bracket Assembly.
- Place the Evolve Stair Bracket Post piece between the two lines drawn in the previous step and center it on the post.
- Use a 3/16” drill bit to pre-drill holes.
- Attach all Evolve Stair Bracket Post pieces to the posts with supplied T-25 thread cutting screws.
- Reinstall Evolve Stair Bracket Cup to Evolve Stair Bracket Post with Chicago Bolts.
- Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post.

Cutting Fortress Al\textsuperscript{13} Railing Traditional Adjustable Panels

- Rake the panel back to 90° and lay on a flat surface.
- Using a metal cutting blade, cut the rail at the four cutting mark locations from previous step. It is advisable to make a practice cut on a scrap piece of rail before proceeding with the finish cuts.
- The distances from the first baluster to the ends of the rail will be different from the top to bottom rail. The greater the angle of the steps, the more visible the difference will be. This is required in order to keep panel’s balusters parallel to the post.
- File all cut edges.
Install Al\textsuperscript{13} Traditional Adjustable Panel

- Reposition support blocks.
- Position Al\textsuperscript{13} Traditional Adjustable Panel so that it aligns with the Evolve Stair Brackets. Use a clamp to hold the Al\textsuperscript{13} Traditional Adjustable Panel in place.
- Check the fit of the Al\textsuperscript{13} Traditional Adjustable Panel and make any required adjustments.
- Pre-drill Al\textsuperscript{13} Traditional Adjustable Panel with a 3/16" drill bit, then secure to Evolve Stair Bracket with a T-25 thread cutting screw.

Install Evolve Stair Bracket Caps

- Remove clamps, then install Evolve Stair Bracket Caps by snapping the Evolve Stair Bracket Cap into place.
Installation Instructions for Fortress
Al Traditional Adjustable Panels with Phantom Bracket (Stair) and Al Posts

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. The Fortress Company nor its distributors shall not be held liable for improper or unsafe installations.

Fortress Al Posts must always be secured to the deck framing. Fortress Al Posts should never be attached to only the deck boards.

Read Instructions Completely Before Starting Installation

Note
When cutting Fortress railing, it is very important to complete the following at cut points. Not following the below steps will result in corrosion at the cut areas:

- Remove all metal shavings from the cut area
- File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
- Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent damaging the deck surface.

Required Materials
Drill, 5/32" Drill Bit, Phillips Head Screw Driver, T-25 Driver Bit, Metal Cutting Saw, Tape Measure, Wrenches, Pencil, Speed Square, Center Punch, Support Blocks, Clamps and Hammer.

Al Traditional Adjustable Panels

Al Traditional Adjustable Panel 6' (actual length 90.5")
Available Heights 34" and 40"
Maximum rake angle 45°

Please contact ADI with any questions:
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Fax: 800-203-4495   Email: sales@absolutedist.com
Important - Every stair installation will be different. The rise and run, post position, and post height all need to be carefully laid out before posts are permanently installed and Fortress Al Traditional Adjustable panels are cut.

Mount Al Posts
- Wood Blocking tied to deck frame must be installed and constructed with treated dimensional lumber with a minimum thickness of 1-1/2”.
- Position the edge of post base plate a minimum of ½” from the inside edge of rim joist.
- Mount posts at appropriate points based on panel length.
- Place Base Plate Barrier between post base and deck surface.
- Attach Al posts with 3/8 X 3-1/2” Hex Head Galvanized Bolts.

*Reference Fortress Railing post mounting instructions

Determine Rake and Center Panel Between Posts

Check posts to ensure that all posts are square and straight. Shim posts as required.

Use Al Adjustable Panel to determine the angle of stair installation. To do this use support blocks resting on the stair tread. Position support blocks so that the position of the bottom rail meets the spacing requirement of your building code.

Rake the panel so that the balusters run parallel with the posts. Center the balusters so that there is a equal amount of rail between the post and baluster at each end (Dimension A).

Make sure that there is enough clearance between the post and first picket to allow for the bracket. Minimum distance between the last picket and post is 1-5/8”.

Mark location of support blocks for future reference.
Verify Panel Position and Secure with Clamps

- Verify the position of the panel. With the help of another person, secure the panel into the correct position and secure with clamps at each end of panel.

- Place a piece of cardboard between the clamping surfaces and the surfaces of the rails and posts to protect the finish.

Mark Rail Locations and Length

- Using a straight edge mark the location of the rail on the post in 4 places. These lines will be used to position rail to posts when brackets are installed.

- Mark rail where post front edge of post is flush with rail in 4 places. This will be the cut mark for the rail.
Cutting Fortress Al\textsuperscript{13} Railing Traditional Adjustable Panels

- Rake the panel back to 90° and lay on a flat surface.
- Using a fine tooth cutting blade, cut the rail at the four cutting mark locations from previous step. It is advisable to make a practice cut on a scrap piece of rail before proceeding with the finish cuts.
- The distances from the first picket to the ends of the rail, will be different from the top to bottom rail. The greater the angle of the steps the more visible the difference will be. This is required in order to keep pickets parallel to the post.
- File cut edges.

![Cutting Marks Diagram]

Cutting Al\textsuperscript{13} Traditional Panels

- The best way to cut panels is to use a miter saw.
- A fine tooth carbide tipped blade designed to cut non-ferrous materials is recommended.
- Setup a work surface that is level and large enough to support all four corners of the panel.
- Supports should be the same height as saw base to keep panel straight and level when cutting panel.
- With panels completely supported, make cuts at the marked locations from previous step.
- Al\textsuperscript{13} panels can be miter cut at an angle up to 45°
- Remove any burrs or shavings from cut edges.
- Check the fit of panel between post. **Be careful not to scratch post with end cuts.**

![Miter Saw Diagram]
**Install Al³ Phantom Bracket (Stair) to Rail**

- Align Rail Plate Hinge Tube with the end cut of rail so that it is tangent.
- Mark the location of Rail Plate screw holes with a pencil.
- Verify the screw hole spacing dimensions using the image above.
- Mark the screw hole center points with a center punch and pre-drill with a 5/32" bit.
- Secure Rail Plate to Rail with 3 - T-25 Metal Screws
- Reassemble Al³ Phantom Bracket Stair Post Plate to Rail Plate with Hinge Pin.
- Repeat for all four Al³ Phantom Bracket Stair locations.

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**Al³ Phantom Bracket (Stair)**

- To help with the installation of the Al³ Phantom Bracket Stair, we recommed that the hinge pin assembly be removed. This will allow for easier alignment of the rail plate to the rail.
Install Traditional Adjustable Panel

- Reposition support blocks.
- Rest Al\textsuperscript{13} Panel on Support Blocks. Be careful not to scratch posts.
- Align Al\textsuperscript{13} Panel with the marks on posts.
- With Al\textsuperscript{13} Panel in place pre-drill post plate screw locations with a 5/32" bit.
- Secure Al\textsuperscript{13} Panel with 2 - T-25 Metal Screws installed into each bracket.

Al\textsuperscript{13} Accessories

- Install Post Caps
- Install Al\textsuperscript{13} Two Piece Base Covers

Fortress Al\textsuperscript{13} Pyramid Cap

Fortress Al\textsuperscript{13} Ball Cap

FortressAccents 3" Cap
(Optional LED Light Kit or LED Glow Ring)

Fortress Al\textsuperscript{13} Two Piece Base Cover
Installation Instructions for
Fortress Al\textsuperscript{13} Rail Joint Cover

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. The Fortress Company or its distributors shall not be held liable for improper or unsafe installations.

Fortress Al\textsuperscript{13} Posts must always be secured to the deck framing. Fortress Al\textsuperscript{13} Posts should never be attached to only the deck boards.

Read Instructions Completely Before Starting Installation

Note

When cutting Fortress railing, it is very important to complete the following at cut points. Not following the below steps will result in corrosion at the cut areas:

• Remove all metal shavings from the cut area
• File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
• Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent stains on the deck surface.

Required Materials

Eye Protection, Miter Saw with fine tooth blade, Tape Measure, Speed Square, Pencil, Caulking Gun and Fortress 300 Fast Epoxy.

Fortress Al\textsuperscript{13} Rail Joint Cover Installation

The Fortress Al\textsuperscript{13} Rail Joint Cover is optional and it is used to cover gaps between the Fortress Al\textsuperscript{13} Post and Fortress Al\textsuperscript{13} Top and Bottom Rails on straight runs of Fortress Al\textsuperscript{13} Traditional Rail Panels.

• The Fortress Al\textsuperscript{13} Rail Joint Cover snaps over the top and bottom rails and is held in place with Fortress 300 Fast Epoxy.
• After all Fortress Al\textsuperscript{13} Traditional Rail Panels are installed test fit the Fortress Al\textsuperscript{13} Rail Joint Covers.
• Do Not Apply Epoxy Until All Fortress Al\textsuperscript{13} Rail Joint Covers are test fit. Fortress Epoxy has a short working time.
• Apply a pea size amount of Fortress 300 Fast Epoxy as shown.
• Install Fortress Al\textsuperscript{13} Rail Joint Covers by sliding over the Top and Bottom Rails.
• Immediately wipe any excess epoxy from the rail surface.

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Fax: 800-203-4495             Email: sales@absolutelydist.com
Installation Instructions for Fortress Al\textsuperscript{13} Stair / Angle Rail Joint Cover

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. The Fortress Company or its distributors shall not be held liable for improper or unsafe installations.

Fortress Al\textsuperscript{13} Posts must always be secured to the deck framing. Fortress Al\textsuperscript{13} Posts should never be attached to only the deck boards.

Read Instructions Completely Before Starting Installation

Note
When cutting Fortress railing, it is very important to complete the following at cut points. Not following the below steps will result in corrosion at the cut areas:
• Remove all metal shavings from the cut area
• File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
• Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent stains on the deck surface.

Required Materials
Eye Protection, Miter Saw with fine tooth blade, Tape Measure, Speed Square, Pencil, Double Sided Foam Tape, Caulking Gun and Fortress 300 Fast Epoxy.

Cutting the Fortress Al\textsuperscript{13} Stair / Angle Rail Joint Cover
Read and understand all instructions. Failure to follow all instructions listed below, may result in serious personal injury.

Never hold a workpiece that is too small.
Keep hands away from cutting area. Do not reach underneath work or in blade cutting path with your hands and fingers for any reason.

• The Fortress Al\textsuperscript{13} Stair / Angle Rail Joint Cover can be cut to fit angles from 0° to 45°.
• The best way to cut the Fortress Al\textsuperscript{13} Stair / Angle Rail Joint Cover is to use a miter saw.
• A fine tooth carbide tipped blade designed to cut non-ferrous materials is recommended.
• Determine the required angle. Use a scrap piece of lumber to make a test cut at the required angle.
• Cut a 12" long block from a scrap piece of 2x4. This will support the Fortress Al\textsuperscript{13} Stair / Angle Rail Joint Cover when making the cut.
• Cut a 12" long block from a scrap piece of 1x2. This is used to allow for clearance between the saw fence and the Fortress Al\textsuperscript{13} Stair / Angle Rail Joint Cover.
• Use a piece of double sided foam tape to hold the Fortress Al\textsuperscript{13} Stair / Angle Rail Joint Cover to the 2x4.
• Place a wood shim between the 2x4 and Fortress Al\textsuperscript{13} Stair / Angle Rail Joint Cover to hold it tight.

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Double Sided Foam Tape

Wood Shim
**Fortress Al\(^{13}\) Stair Joint Cover Installation**

The Fortress Al\(^{13}\) Stair Rail Joint Cover is optional and it is used to cover gaps between the Fortress Al\(^{13}\) Post and Fortress Al\(^{13}\) Top and Bottom Rails on stair installations of Fortress Al\(^{13}\) Traditional Adjustable Rail Panels.

- The Fortress Al\(^{13}\) Stair Rail Joint Cover snaps over the top and bottom rails and is held in place with Fortress 300 Fast Epoxy.
- After all Fortress Al\(^{13}\) Traditional Adjustable Rail Panels are installed, test fit the Fortress Al\(^{13}\) Stair Rail Joint Covers.
- **Do Not Apply Epoxy Until All Fortress Al\(^{13}\) Rail Joint Covers are test fit.** Fortress Epoxy has a short working time.
- Install Fortress Al\(^{13}\) Stair Rail Joint Covers by sliding over the Top and Bottom Rails.
- Immediately wipe any excess epoxy from the rail surface.

**Fortress Al\(^{13}\) Angle Rail Joint Cover Installation**

The Fortress Al\(^{13}\) Angle Rail Joint Cover is optional and it is used to cover gaps between the Fortress Al\(^{13}\) Post and Fortress Al\(^{13}\) Top and Bottom Rails on angl installations of Fortress Al\(^{13}\) Traditional Rail Panels.

- The Fortress Al\(^{13}\) Angle Rail Joint Cover snaps over the top and bottom rails and is held in place with Fortress 300 Fast Epoxy.
- After all Fortress Al\(^{13}\) Traditional Rail Panels are installed, test fit the Fortress Al\(^{13}\) Angle Rail Joint Covers.
- **Do Not Apply Epoxy Until All Fortress Al\(^{13}\) Rail Joint Covers are test fit.** Fortress Epoxy has a short working time.
- Install Fortress Al\(^{13}\) Angle Rail Joint Covers by sliding over the Top and Bottom Rails.
- Immediately wipe any excess epoxy from the rail surface.
Installation Instructions for
Fortress Al¹³ Gate Uprights

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. The Fortress Company or its distributors shall not be held liable for improper or unsafe installations.

Fortress Al¹³ Posts must always be secured to the deck framing. Fortress Al¹³ Posts should never be attached to only the deck boards.

Read Instructions Completely Before Starting Installation

Note
When cutting Fortress railing, it is very important to complete the following at cut points. Not following the below steps will result in corrosion at the cut areas:
• Remove all metal shavings from the cut area
• File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime or dirt from the railing.
• Apply two coats of Fortress zinc based touch-up paint to the cut area. Allow paint to dry.
• Be sure to remove any metal shavings from the surface of deck, patio or balcony to prevent damaging the deck surface.

Required Materials
Drill, 5/16" Drill Bit, T-30 Driver Bit, Metal Cutting Saw, Tape Measure, Pencil, Speed Square, Center Punch, Touch Up Paint, Rubber Mallet and Eye Protection.

Fortress Al¹³ Gate Upright Assembly
• Maximum gate width is 48"
• If using Fortress Gate Kit #2, allow 3/4” space between Fortress Al¹³ Gate Uprights and posts on each side for hinges and latch.
• Max spacing between the Fortress Al¹³ Gate Upright and the first baluster on each side of gate is 3-7/8”.
• To determine the required length of panel between Fortress Al¹³ Gate Uprights cut the panel 1-3/4” shorter than the finished gate width at each end. For example if the desired gate width is 48” subtract 1-3/4” from each end of panel. The cut panel length will be 44-1/2”.
• Align Fortress Al¹³ Traditional Panel top and bottom rails with Fortress Al¹³ Gate Uprights. Using a rubber mallet drive Fortress Al¹³ Gate Uprights into the rails.
• Measure 1-3/8” from the edge of Fortress Al¹³ Gate Uprights at each corner. In the center of the rail drill a 5/16” hole. Secure panel to Fortress Al¹³ Gate Uprights with the supplied 3/4” T-30 Bolts.

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Fortress Al¹³ Traditional Panel (34” & 40”)

Fortress Al¹³ Gate Upright

Gate Kit Hinge

Gate Frame

Fortress Al¹³ Post

Gate Hinge

5/16” Drill Bit

1-3/8”

3/4” T-30

Bolt

3/4” T-30

Bolt

3/4” T-30

Bolt

3/4” T-30

Bolt

3/4” If using Fortress Gate #2