ELEMENTS™ ALUMINUM RAIL INSTALLATION

PRIOR TO INSTALLING RAILING:

Please consult local zoning laws in regards to load requirements, overall height requirements, and bottom space requirements for rails. All supporting structures must be in accordance with applicable building codes. Neighborhood associations and/or historic districts may regulate size, type, placement and type of railing. Apply for permits if required by local authorities and codes. Ensure compliance prior to installation. Local building code requirements will always supersede any and all suggested procedures and measurements in the following installation. The following installation instructions are intended as a general guideline based on common building practices used in railing installation.

TOOLS REQUIRED

- Power drill
- 1/8-in drill bit (for optional hole pre-drilling)
- 1/4-in drill bit
- Snips or saw (for cutting plastic spacer clips)
- Tape measure
- Plumb bob or level
- Saw for cutting aluminum
- Screwdriver or power drill for T25 Torx screws (bit included)
- Safety glasses
- Wrench or ratchet (for post fasteners)
- Pencil
- Optional urethane caulk for high salt water content areas
- Optional PVC adhesive for baseplate cover
- Hearing protection (for saw)

KIT CONTENTS

- (1) 6-ft Top Rail
- (1) 6-ft Bottom Rail
- (1) Crush Block
- (15) 5/8-in Balusters
- (18) Spacer Clips
- (12) #10 x 3/4-in Torx Screws (bit included)
- (1) Instruction Sheet

TIPS

The most recent installation instructions can be found on our website. Please visit www.fiberondecking.com or call customer service at 800-318-7828.

RAIL INSTALLATION

Step 1: Measure the Top Rail and cut as needed

For rail installation, make sure posts are plumb and loosely tightened. Measure the distance between the posts (for accuracy, take measurement between both posts near the bottom), subtract 5/8-in from total measurement, and cut top rail (Figure 1). There should be a 5/16-in space between each end of the cut rail and the upright post (Figure 2).

NOTE: If posts are 69 1/2-in from end to end, cutting may not be needed.

Step 2: Measure the Bottom Rail and cut as needed

Before cutting the bottom rail, center it along the cut top rail to ensure equal hole distance from each side to end of top rail (Figure 2 & 3). Mark the top of the bottom rail at each end in line with the cut top rail. The length of the cut bottom rail will be the same length as the cut top rail.

Step 3: Loosen Post Fasteners

Loosen the posts to allow rail and or stair installation, leaving the post fastener heads approximately 1-in above the baseplate. (Figure 4).
RAIL INSTALLATION (CONTINUED)

Step 4: Fit Rails to Post
Tilt the posts to allow the bottom rail to fit into the bottom post brackets (Figure 5). Repeat for top rail.

Step 5: Tighten Posts and Fasten Rails
After top and bottom rails are fitted into the post brackets, plumb and tighten the posts.

Using the two pre-drilled holes under the top post bracket, fasten the top rail to the top post bracket with (2) #10 x 3/4-in screws (Figure 6).
Optional: Pre-drill the holes with a 1/8-in drill bit.

Fasten bottom rail through the middle of the perpendicular sides of the bottom post bracket with (2) #10 x 3/4-in screws (Figure 7).
Optional: Pre-drill the holes with a 1/8-in drill bit.

Step 6: Fasten Bottom Rail Crush Block
Position the bottom rail crush block under the center of the bottom rail. Fasten bottom rail crush block to the bottom rail with (1) #10 x 3/4-in screw (Figure 8).

Step 7: Drill Drain Holes in Bottom Rail
Drill three 1/4-in drain holes from open holes in the top of the bottom rail through the underside of the bottom rail (Figure 9).

Step 8: Install Rail Balusters
Starting at one end of the rail, install one baluster into the bottom rail so it is plumb with the post. Measure the opening size for the first spacer clip, cut and install into the underside of the top rail (Figure 10). Continue adding a baluster then a spacer clip, working to other end, until 4 holes are left (Figure 11). Insert the final 4 balusters as a group, then spread them out and secure with spacer clips. Measure the last opening, then measure, cut and install the final spacer clip.
RAIL INSTALLATION (CONTINUED)

Step 9: Attach Post Baseplate Cover

After the top and bottom rails and/or stairs have been installed, position both halves of the baseplate cover on either side of the post above the baseplate and below the bottom rail. Align the locking pins on one half to the matching holes on the other half and slide together. Optional: Apply PVC adhesive to the locking pins prior to sliding halves together for a secure fit (Figure 12).
Prior to Installing Stairs:

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Tools Required

- Power drill
- 1/8-in drill bit (for optional pilot hole pre-drilling)
- Snips or saw (for cutting plastic spacer clips)
- Tape measure
- Plumb bob or level
- Saw for cutting aluminum
- Screwdriver or power drill for T25 Torx screws (bit included)
- Pencil
- Safety glasses
- Wrench or ratchet (for post fasteners)
- Optional urethane caulk for high salt water content areas
- Optional PVC adhesive for baseplate cover
- Hearing protection (for saw)

Kit Contents

- (1) 6-ft Top Rail
- (1) 6-ft Bottom Rail
- (1) Crush Block
- (12) 5/8-in Balusters
- (15) Spacer Clips
- (12) #10 x 3/4-in Torx Screws (bit included)
- (1) Instruction Sheet

Tips

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Stair Bracket Installation

Step 1: Lay Out the Stair Posts and Stair Rails

For stair installation, loosely mount the stair posts and set out the stair rails. To determine the stair bracket location, lay the bottom stair rail on top of the stairs/nosing and, using the top of the bottom stair rail as a guide, make an initial mark with a pencil onto the upper post and the lower post (Figure 1). From the mark you made on the upper post (the post at the top of the stairs), measure and draw a horizontal line 3/8-in below the mark. From the mark you made on the lower post (the post at the bottom of the stairs), measure and draw a horizontal line 3/4-in above the mark.

Figure 1

Step 2: Install Bottom Stair Bracket

Locate the top edge of the backing plate for the bottom stair bracket along the horizontal line. Take care to ensure the backing plate is centered on the post, with the two mounting holes lined up on top of each other. Mark the center of the two mounting holes located inside the backing plate against the post (Figure 2).

Optional: Pre-drill the marked holes with a 1/8-in drill bit.

Figure 2

Locate the backing plate over the marked or pre-drilled mounting holes, and install two #10 x 3/4-in screws through the backing plate and into the aluminum post (Figure 3). Do not overtighten screws.

NOTE: If installing into a wood post, install using two #12 x 2-in pan head screws.

Slide the bottom rail end cap into the backing plate. Secure with two #10 x 1/2-in screws through the backing plate holes and into the bottom rail cap's pre-drilled holes (Figure 4). A third #10 x 1/2-in screw is supplied to fill the end cap's top pre-drilled hole, if so desired.

Figure 3

Figure 4
### STAIR INSTALLATION (CONTINUED)

**Step 3: Install Top Stair Bracket**

Measure up 30 1/8-in from the top of the installed bottom backing plate and make a horizontal line with a pencil onto the post (Figure 5). Locate the BOTTOM edge of the backing plate along the horizontal line. Take care to ensure the backing plate is centered on the post, with the two mounting holes lined up on top of each other. Mark the center of the two mounting holes located inside the backing plate against the post.

Optional: pre-drill the marked holes with a 1/8-in drill bit.

Locate the backing plate over the marked or pre-drilled mounting holes, and install two #10 x 3/4-in screws through the backing plate and into the aluminum post. Do not overtighten screws.

**NOTE:** If installing into a wood post, install using two #12 x 2-in pan head screws.

Slide the top rail end cap into the backing plate. Secure with two #10 x 1/2-in screws through the backing plate holes and into the top rail cap’s pre-drilled holes (Figure 6). A third #10 x 1/2-in screw is supplied to fill the end cap’s top pre-drilled hole, if so desired.

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**Step 4: Cutting Top and Bottom Rails**

Following the stair angle and with posts held plum, measure between the back of the installed stair bracket end caps. Deduct 1/2-in from this measurement and cut top rail to length. Before cutting the bottom rail to the same length as the top rail, make sure the hole pattern is centered with the pre-cut baluster holes equal distance from each end. Do not make cuts to match the stair angle; cut at 90 degree angle (Figure 7).

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**Step 5: Install Bottom and Top Rails into Stair Brackets**

Loosen posts to install bottom rail into bottom stair brackets. With bottom rail in place, install top rail into top stair brackets (Figure 8). Plumb and tighten post. Secure stair rails with #10 x 3/4-in screws (Figure 9).

Optional: Pre-drill the holes with a 1/8-in drill bit.
Step 6: Install Stair Balusters

Starting from the bottom of the stairs, install one baluster into the bottom rail so it is plumb with the bottom post. Measure the opening size for the first spacer clip, cut it and install into underside of top rail (Figure 10). Continue adding a baluster then a spacer clip until you’ve installed the last baluster. Measure the last opening then measure, cut and install the last spacer clip (Figure 11).

Figure 10

Figure 11

Step 7: Fasten Bottom Rail Crush Block

Fasten bottom rail crush block to the bottom rail with (1) #10 x 3/4-in screw (Figure 12).

Figure 12

Step 8: Attaching Post Baseplate Cover

After the top and bottom rails and/or stairs have been installed, position both halves of the baseplate cover on either side of the post above the baseplate and below the bottom rail. Align the locking pins on one half to the matching holes on the other half and slide together.

Optional: Apply PVC adhesive to the locking pins prior to sliding halves together for a secure fit (Figure 13).

Figure 13
PRIOR TO INSTALLING POST:

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TOOLS REQUIRED
• Power drill
• 3/8-in x 6-in drill bit for installing to deck
• 1/4-in x 4-in masonry bit for installing to concrete
• Tape measure
• Plumb bob or level
• Safety glasses
• Wrench or socket (for post fasteners)
• Pencil or marker (for marking hole location)
• Optional PVC adhesive for baseplate cover

KIT CONTENTS
• (1) Post
• (1) Baseplate Cover
• (1) Instruction Sheet

NEED TO PURCHASE (PER POST)

For Wood Installation:
• (4) 5/16-in - 18 x 6-in Bolts Grade 5
• (4) 5/16-in - 18 x 6-in Hex Nuts Grade 5
• (4) 5/16-in - Flat Washers, Small Series N
• (8) 5/16-in - Fender Washers, Large .06-in Thick, Stainless Steel

For Concrete Installation:
• (4) 1/4-in x 3-in Powers Wedge Bolts
• (4) 5/16-in - Flat Washers, Small Series N

TIPS
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POST INSTALLATION TO DECK

Step 1: Position Posts for Deck
Locate posts at equal intervals along the outside of deck (up to 72-in maximum on-center), placing the edge of the baseplate 2-in from the edge of the deck. If the deck edge has a overhang, add the overhang distance to the 2-in (Figure 1).

Step 2: Mark Holes to be Drilled
Using the post baseplate as a template, mark the deck surface for drill locations for each of the four corner holes (Figure 2).

Step 3: Drill Holes
Ensure sufficient fasteners and wood reinforcement blocking are used for installation. A minimum of 4-in of blocking depth is required. Using a 3/8-in drill bit, drill four holes through the deck board and reinforcement blocking board.

Step 4: Attach Bolts, Washers and Nuts
Place the post into position over the drilled holes and insert a 5/16-in - 18 x 6-in bolt with small 5/16-in washer into each of the four holes. Attach two large 5/16-in washers and one 5/16-in - 18 hex nut to each of the four bolts under the deck (Figure 3).
POST INSTALLATION TO DECK (CONTINUED)

Step 5: Loosely Tighten the Post
To allow rail and/or stair installation, loosely tighten the nuts, leaving the bolt heads approximately 1-in above the baseplate (Figure 4)

Step 6: Attach Post Baseplate Cover
After the rails and/or stairs have been installed, plumb and tighten the posts. Position both halves of the baseplate cover on either side of the post above the baseplate and below the bottom rail. Align the locking pins on one half to the matching holes on the other half and slide together.
Optional: Apply PVC adhesive to the locking pins prior to sliding halves together for a secure fit (Figure 5)

POST INSTALLATION TO CONCRETE

Step 1: Position Posts for Concrete
Locate posts at equal intervals along the outside of concrete (up to 72-in maximum), placing the edge of the baseplate a minimum of 3 5/8-in from the edge of the concrete (Figure 1).

Step 2: Mark Holes to be Drilled
Using the post baseplate as a template, mark the concrete surface for drill locations for each of the four corner holes (Figure 2)

Step 3: Drill Holes
Using a 1/4-in masonry drill bit, drill four holes into the concrete to a minimum depth of 3 1/2-in. Thoroughly clean the holes from all dust and debris.
Step 4: Attach Bolts with Washers
Place the post into position over the drilled holes and insert a 1/4-in x 3-in concrete bolt with small 5/16-in washer into each of the four holes (Figure 3).

Step 5: Loosely Tighten the Post
To allow rail and/or stair installation, loosely tighten the bolts, leaving the bolt heads approximately 1-in above the baseplate (Figure 4).

Step 6: Attach Post Baseplate Cover
After the rails and/or stairs have been installed, plumb and tighten the posts. Position both halves of the baseplate cover on either side of the post above the baseplate and below the bottom rail. Align the locking pins on one half to the matching holes on the other half and slide together.
Optional: Apply PVC adhesive to the locking pins prior to sliding halves together for a secure fit (Figure 5)
PRIOR TO INSTALLING RAIL BRACKETS:

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TOOLS REQUIRED
- Power drill
- 1/8-in drill bit for (optional pilot hole pre-drilling)
- Tape measure
- Screwdriver or power drill for T25 Torx screws
- Safety glasses
- Pencil

KIT CONTENTS
- (1) Top Rail Bracket
- (1) Bottom Rail Bracket
- (4) #10 x 3/4-in Torx Screws
- (4) #12 x 2-in pan head Torx Screws (for wood post)
- (1) Instruction Sheet

TIPS
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RAIL BRACKET INSTALLATION

Step 1: Install Bottom Rail Bracket

Measure up 2-in from the top of the post baseplate and mark this location with a pencil onto the post (Figure 1). Locate the bottom rail bracket against the post, aligning the BOTTOM of the bracket with the 2-in marked line. Take care to ensure the bracket is centered on the post. Mark the center of the two mounting holes located inside the bracket against the post. Optional: Pre-drill the marked holes with a 1/8-in drill bit.

Locate the bracket over the marked or pre-drilled mounting holes, and install two #10 x 3/4-in screws through the bracket and into the aluminum post. Do not overtighten screws.

NOTE: If installing into a wood post, install using two #12 x 2-in pan head screws.

Step 2: Install Top Rail Bracket

Measure up 33 15/16-in from the top of the post baseplate and mark this location with a pencil onto the post (Figure 2). Locate the top rail bracket against the post, aligning the BOTTOM of the bracket with the 33 15/16-in marked line. Take care to ensure the bracket is centered on the post. Mark the center of the two mounting holes located inside the bracket against the post. Optional: Pre-drill the marked holes with a 1/8-in drill bit.

Locate the bracket over the marked or pre-drilled mounting holes, and install two #10 x 3/4-in screws through the bracket and into the aluminum post. Do not overtighten screws.

NOTE: If installing into a wood post, install using two #12 x 2-in pan head screws.
PRIOR TO INSTALLING STAIR BRACKETS:

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TOOLS REQUIRED

- Power drill
- 1/8-in drill bit for optional pilot hole pre-drilling
- Tape measure
- Screwdriver or power drill for T25 Torx screws
- Safety glasses
- Pencil

KIT CONTENTS

- (1) Top Rail End Cap & Backing Plate
- (1) Bottom Rail End Cap & Backing Plate
- (4) #10 x 3/4-in Torx Screws
- (6) #10 x 1/2-in Torx Screws
- (4) #12 x 2-in pan head Torx Screws (for wood post)
- (1) Instruction Sheet

TIPS

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STAIR BRACKET INSTALLATION

Step 1: Lay Out the Stair Posts and Stair Rails

For stair installation, loosely mount the stair posts and set out the stair rails. To determine the stair bracket location, lay the bottom stair rail on top of the stairs/nosing and, using the top of the bottom stair rail as a guide, make an initial mark with a pencil onto the upper post and the lower post (Figure 1). From the mark you made on the UPPER post (the post at the top of the stairs), measure and draw a horizontal line 3/8-in below the mark. From the mark you made on the LOWER post (the post at the bottom of the stairs), measure and draw a horizontal line 3/4-in above the mark.

Step 2: Install Bottom Stair Bracket

Locate the TOP edge of the backing plate for the bottom stair bracket along the horizontal line. Take care to ensure the backing plate is centered on the post, with the two mounting holes lined up on top of each other. Mark the center of the two mounting holes located inside the backing plate against the post (Figure 2).

Optional: Pre-drill the marked holes with a 1/8-in drill bit.

Locate the backing plate over the marked or pre-drilled mounting holes, and install two #10 x 3/4-in screws through the backing plate and into the aluminum post (Figure 3). Do not overtighten screws.

NOTE: If installing into a wood post, install using two #12 x 2-in pan head screws.

Step 3: Install Top Stair Bracket

Measure up 30 1/8-in from the top of the installed bottom backing plate and make a horizontal line with a pencil onto the post (Figure 5). Locate the BOTTOM edge of the backing plate along the horizontal line. Take care to ensure the backing plate is centered on the post, with the two mounting holes lined up on top of each other. Mark the center of the two mounting holes located inside the backing plate against the post.

Optional: Pre-drill the marked holes with a 1/8-in drill bit.

Locate the backing plate over the marked or pre-drilled mounting holes, and install two #10 x 3/4-in screws through the backing plate and into the aluminum post. Do not overtighten screws.

NOTE: If installing into a wood post, install using two #12 x 2-in pan head screws.

Step 4: Install the Stair Railing

Slide the bottom rail end cap into the backing plate. Secure with two #10 x 1/2-in screws through the backing plate holes and into the bottom rail cap’s pre-drilled holes (Figure 4). A third #10 x 1/2-in screw is supplied to fill the end cap’s top pre-drilled hole, if so desired.

NOTE: If installing into a wood post, install using two #12 x 2-in pan head screws.

Slide the top rail end cap into the backing plate. Secure with two #10 x 1/2-in screws through the backing plate holes and into the top rail cap’s pre-drilled holes (Figure 6). A third #10 x 1/2-in screw is supplied to fill the end cap’s top pre-drilled hole, if so desired.
**ELEMENTS™ ALUMINUM ANGLE BRACKET INSTALLATION**

**PRIOR TO INSTALLING ANGLE BRACKET:**

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**TOOLS REQUIRED**
- Power drill
- 1/8-in drill bit for optional pilot hole pre-drilling
- Tape measure
- Screwdriver or power drill for T25 Torx screws
- Safety glasses
- Pencil

**KIT CONTENTS**
- (1) Top Rail End Cap & Backing Plate
- (1) Bottom Rail End Cap & Backing Plate
- (4) #10 x 3/4-in Torx Screws
- (6) #10 x 1/2-in Torx Screws
- (4) #12 x 2-in pan head Torx Screws (for wood post)
- (1) Instruction Sheet

**TIPS**
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**ANGLE BRACKET INSTALLATION**

**Step 1: Install Bottom Angle Bracket**

Measure up 1 7/8-in from the top of the post baseplate and make a horizontal line with a pencil onto the post (Figure 1). Locate the BOTTOM edge of the backing plate along the horizontal line. Take care to ensure the backing plate is centered on the post, with the two mounting holes side-by-side. Mark the center of the two mounting holes located inside the backing plate against the post.

Optional: Pre-drill the marked holes with a 1/8-in drill bit.

Locate the backing plate over the marked or pre-drilled mounting holes, and install two #10 x 3/4-in screws through the backing plate and into the aluminum post. Do not overtighten screws.

NOTE: If installing into a wood post, install using two #12 x 2-in pan head screws.

Slide the bottom rail end cap into the backing plate. Secure with two #10 x 1/2-in screws through the backing plate holes and into the bottom rail cap’s pre-drilled holes (Figure 2). A third #10 x 1/2-in screw is supplied to fill the end cap’s top pre-drilled hole, if so desired.

**Step 2: Install Top Angle Bracket**

Measure up 30 1/8-in from the top of the installed bottom backing plate and make a horizontal line with a pencil onto the post. Locate the BOTTOM edge of the backing plate along the horizontal line. Take care to ensure the backing plate is centered on the post, with the two mounting holes side-by-side (Figure 3). Mark the center of the two mounting holes located inside the backing plate against the post.

Optional: Pre-drill the marked holes with a 1/8-in drill bit.

Locate the backing plate over the marked or pre-drilled mounting holes, and install two #10 x 3/4-in screws through the backing plate and into the aluminum post. Do not overtighten screws.

NOTE: If installing into a wood post, install using two #12 x 2-in pan head screws.

Slide the top rail end cap into the backing plate. Secure with two #10 x 1/2-in screws through the backing plate holes and into the top rail cap’s pre-drilled holes (Figure 4). A third #10 x 1/2-in screw is supplied to fill the end cap’s side pre-drilled hole, if so desired.