Endura-Stone Installation Instructions

1. Measure the total distance from the bottom of the beam to the platform.

2. Using a jack and post, jack up the beam only enough to remove the sting post, no more than 1/4

3. Determine the top centerline and mark it on the beam.

4. Hang a plumb bob from the top centerline to determine the bottom centerline.

5. Mark the bottom centerline point.

6. Using a square, draw a centerline perpendicular to the outside edge of the platform.

7. Draw a centerline parallel to the outside edge.

8. Measure from the top of the column to the proper length and make a series of marks around the column shaft.

9. Using a piece of cardboard as a guide, draw a line all the way around the column.

10. Cut the column using an abrasive circular saw. CAUTION: Because the column is load bearing, its top and bottom edges must be level to achieve full, even contact. Between the load surfaces and the shaft. Use a rasp to level as required.

11. Mark and drill clearance holes on the top and bottom of the column to accommodate bolts for the 1?" L-brackets. (L-brackets sold separately.)

12. Slide cap over the top of the column to rest on the neck ring, then slide the base onto the column.

13. Secure two L-brackets on the top and bottom of the column using throughbolts. Do not use screws and do not over tighten.

14. Apply construction adhesive to the top and bottom of the column.

15. Put the assembly in place and plumb. Make sure that the load is centered over the column shaft and evenly distributed. Secure L-brackets to the platform and beam.

16. Apply construction adhesive to the cap and base.

17. Align the square part of the base with the platform below and push the base down until secure.

18. Slide the cap up to the beam and push up until secure. Screws may be used to secure the cap to the beam and the base to the platform. (When using screws, first drill pilot holes and fill with putty to cover screw heads.)

19. Apply caulk to gaps between the cap and base and the column shaft.

20. Prepare the column for painting by sanding lightly with 120-grit or finer wet/dry sandpaper.

21. Remove dust by wiping the column, cap, and base with soap and water.

22. Paint the column with a high-quality oil-base or acrylic-latex paint.

Endura-Stone Installation Instructions

1. Measure the exact floor to ceiling height using a plumb to insure accuracy.

2. Cut the bottom of the column shaft as needed to achieve the measurement taken in step 1. Use an abrasive blade. CAUTION: Because only the shaft is load bearing, its top and bottom edges must be level to achieve full, even contact between load surfaces and shaft**. Use a rasp to level as required. NOTE: All height adjustments must be made from the bottom of the shaft. For the cap to fit correctly, the top of the shaft must be trimmed only enough to achieve level contact with load surfaces, or to achieve correct installation of decorative capitals.

3. Slip one-piece cap and base onto column shaft (see figure 1). The two-piece cap and base are attached after then shaft is installed. If this column is installed where it could collect water or debris, the top of the column and cap MUST be flashed (covered) to prevent such collection. Use lead, copper, aluminum, galvanized, etc. flashing cut slightly larger than the cap, and fold the edges down over the cap after step 5. It is not permissible at any time to fill the interior of the column shaft with sand, concrete or any other material.

4. If installation requires some method of securing the column in place before load is applied, use Endrua-Stone Installation Kit #71760 (see figure 2) NOTE: Always drill clearance holes in columns and secure with through-bolts — DO NOT USE SCREWS — and do not over-tighten.

5. Apply standard construction adhesive to flashing (if used), top surface of cap and bottom surface of base; then tip loosely assembled column shaft into position, align flashing (if used), and lower load onto shaft to hold it in position. Align square part of cap with load surface (or flashing) above and push up against it to secure. Align square part of base with load surface below cap and push down until it is secure.

6. Caulk gaps between shaft and cap and base as desired.

7. All round columns are factory sanded. All surfaces of cap and base, square columns, and the concave area at the bottom of the flutes on fluted columns require preparation by sanding with 80 to 100 grit sandpaper. Sand to remove all glossy areas. Always follow the instructions of the paint manufacturer. A. To paint with oil base paint, remove all dust and dirt by thoroughly wiping column with cleaner compatible with your chosen paint. Allow to dry completely. Use a high quality oil base paint. Primer is not needed if the oil base paint is the desired color. B. To paint with acrylic latex paint, we recommend using a high quality primer like Sherwin-Williams® PrepRite® Anchor-Bond and a topcoat like Sherwin-Williams® SuperPaint®. Remove all dust and dirt before painting by thoroughly cleaning with a cleaner like Simple Green® or isopropyl alcohol. Allow to dry completely before priming.

8. Columns may be split to cover lally columns, posts, etc. using an abrasive Carborundum or carbide blade. NOTE: Split columns are not load bearing.

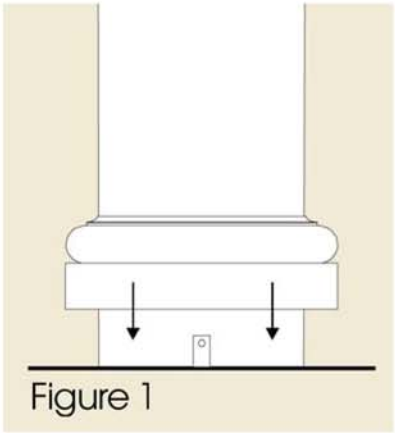
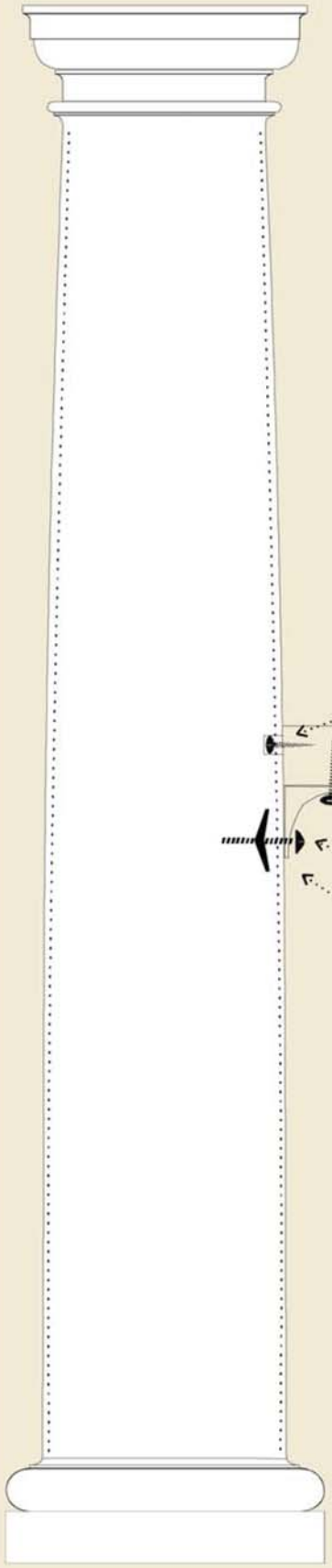


Figure 1

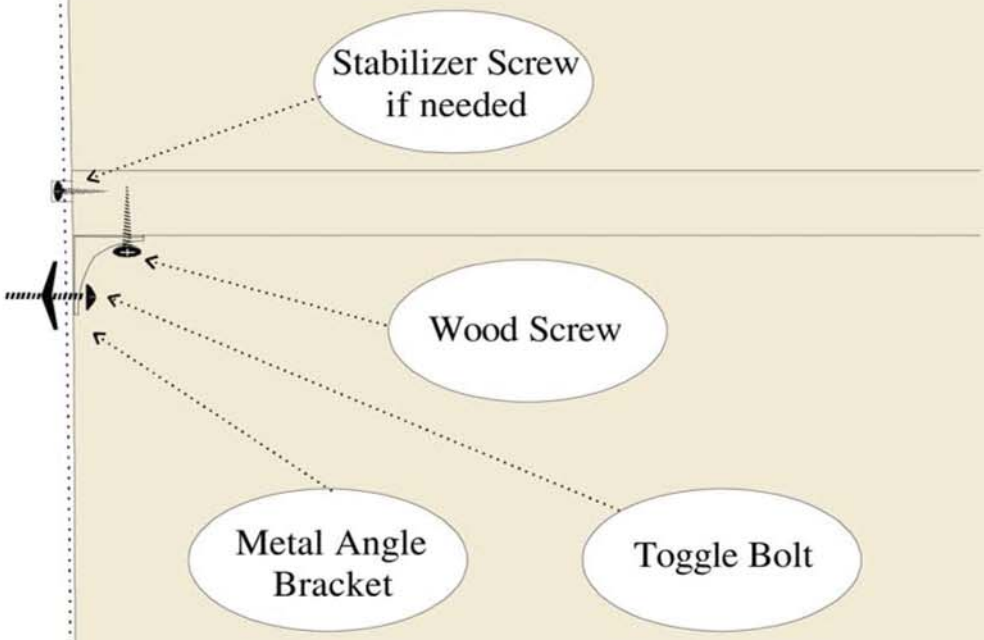
*Please check your local building codes to determine whether Endrua-Stone columns are applicable for your needs.
**Installing column shaft off-center from overhead beam will reduce load bearing capacity.

Endura-Stone Installation Instructions



Instructions for Attaching Handrails to Ekena Millwork Endura-Stone® Columns

Rail to Column Kit #71758



1. Trace the curve of the column (a contour gauge is helpful) at the desired rail height.
2. Copy the curve to the end of the rail which will be attached to the column.
3. Carefully cut the end of the rail to ensure an attractive, tight fit.
4. Attach metal Angle Bracket to the bottom of railing using rust proof wood screws.
5. Mark desired spot on column shaft.
6. Drill pilot hole in wall of column, slightly larger than toggle bolt.
7. Attach angle bracket to column wall with toggle bolt. The toggle bolt will spread any force applied over a wide area of the inside of the column. Do Not Over-tighten!

(Note: the stabilizer screw is not included. It would be used to prevent rotation of the rail. A hole the same size as your screw head is drilled through the column. The screw is driven into the end of the rail. The screw head slips into the hole in the column shaft, keeping the rail from turning.)

Endura Stone Non-Load Bearing Decorative Capitals / Installation Instructions

A. PARTS AND SUPPLIES NEEDED FOR INSTALLATION

Hardware not included:
The following will need to be purchased before beginning installation.
Standard construction adhesive
Mineral spirits - for cleaning
High quality primer and topcoat paint

B. PREPARATION

1. General – Good industrial / construction hygiene practices demand that when grinding, cutting, or sanding our products, you must work in a well-ventilated area and wear protective safety equipment, such as gloves, safety glasses and a MSHA/NIOSH approved respirator.

C. INSTALLATION OF DECORATIVE CAPITALS

1. Before installing the decorative capital, cut the column at the top of the shaft just above the neck ring. Cut within 1/8" from the neck ring and belt sand flush to finish (see Fig. A).

2. ***Before cutting the bottom of the column shaft*** measure the opening where the column will be installed. When calculating the over all height required be sure to include the height of the capital and plug. The plug will be 1/8" to 3/16" higher than the capital. Trim the column shaft bottom to fit the height of the opening AFTER cutting the top of the shaft at neck ring.

*NOTE: Column may be trimmed using an abrasive saw blade or a fine-toothed hand saw. The capital may be trimmed using a Sawzall® with a 10" / 14" tooth saw blade.

3. To attach the plug to the capital: Turn the capital over with the base facing up.

4. Cut two '2x6's – 1 foot in length and place halfway across the base of capital at opposite ends.

5. Trace the capital radius on the '2x6's and cut.

6. Put adhesive on the base of the capital, turn over and center over the metal plug.

7. Using a steel drill, drill three 5/32" holes in each radius piece through the steel plate.

8. Screw a #10 sheet metal screw into each of the six holes. On the outside of the capital, countersink and pilot drill a 7/64" hole through the base of the capital into each radius '2x6' and secure with a screw.

9. Apply a good grade of construction adhesive between the top of the column shaft and the bottom of the capital (See Fig. B).

10. USE CARE when positioning the capital on top of the column. Large capitals may require a forklift.

11. PICK UP THE CAPITAL FROM THE BOTTOM OF THE STEEL PLATE ONLY. It is important to center the capital on top of the column. Remove any excess adhesive.

12. Countersink and pilot drill four 7/32" screw holes into the top of the neck ring through the 3/4" plywood on the plug bottom. These holes should be level with the plywood. Screws should be long enough to penetrate the base of the capital (See Fig. B).

13. Secure the capital with #10 or #12 rustproof screws. Do not over tighten. Length of the screws will depend on the size of the capital and neck ring.

14. Lower the soffit onto the plug. Since the plug will be 1/8" to 3/16" higher than the capital, you should add shims to fill the gap between the soffit and capital.

15. To install the shims, countersink and pilot drill a 7/32" hole through the capital, shims and soffit and secure with a screw. Follow the column manufacturer's installation instructions.

Endura Stone Non-Load Bearing Decorative Capitals / Installation Instructions

D. OPTIONAL INSTALLATION INSTRUCTIONS TO COVER THE CAVITY OF THE CAPITAL

1. Using a 3/8" or 1⁄2" Marine grade plywood, place the plywood on the top of the capital and trace an outline of the capital.
2. Over cut the tracing by 1⁄4".
3. Apply a premium grade of silicone between the plywood and the capital top.
4. Screw the plywood to the capital suing stainless steel screws.
5. Caulk the back edge of the plywood where it meets the soffit with silicone adhesive.
6. You may also use flashing, or a combination of both flashing and plywood. There is no need to bend the flashing over the edge of the capital. This product is rot proof and impervious to water.

E. FINISHING

1. Finish by caulking all seams and drill holes.
2. Repairs to the capital may be made using automotive adhesive such as Bondo®.
3. Apply a high quality primer to both the column and capital.
4. Finish with a premium grade of topcoat paint (see Fig. C).

OTHER INFORMATION

It is always advisable to check your local building codes before starting construction. If you have any questions regarding these installation instructions and your local building code requirements, please contact Ekena Millwork before starting installation.

It is recommended that safety gloves, hats and goggles, as well as other specified safety equipment be used during installation and construction.

Ekena Millwork shall not be responsible if any failure to comply with these instructions results in the product failing to perform the purpose intended. Failure to comply with the above instructions shall result in voiding the terms and conditions as stated in the warranty.

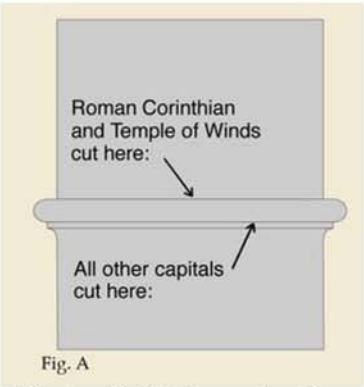


Fig. A – Cut Column at neck ring when installing decorative capitals.

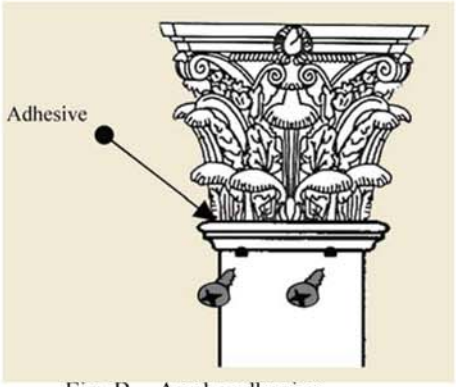


Fig. B – Apply adhesive between the top and bottom of capital.

Fig. C –Apply a high quality primer before painting.

Endura Stone Load Bearing Decorative Capitals / Installation Instructions

A. PARTS AND SUPPLIES NEEDED FOR INSTALLATION

Hardware not included:
The following will need to be purchased before beginning installation.
Standard construction adhesive
Mineral spirits - for cleaning
High quality primer and topcoat paint

B. PREPARATION

1. General – Good industrial / construction hygiene practices demand that when grinding, cutting, or sanding our products, you must work in a well-ventilated area and wear protective safety equipment, such as gloves, safety glasses and a MSHA/NIOSH approved respirator.

NOTE: Decorative Capitals are load bearing to meet the level of load bearing capacity of the column.

C. INSTALLATION OF DECORATIVE CAPITALS

NOTE: Steel and wooden plugs are not needed for installation of Decorative Capitals – except where noted in product specifications. See separate installation instructions for Non-Load Bearing Capitals.

1. Before installing the decorative capital, cut the column at the top of the shaft just above the neck ring. Cut within 1/8" from the neck ring and belt sand flush to finish (see Fig. A).

2. Before cutting the bottom of the column shaft – measure the opening where the column will be installed. When calculating the over-all height required be sure to include the height of the capital. Trim the column shaft bottom to fit the height of the opening.

NOTE: Column may be trimmed using an abrasive saw blade or a fine-toothed hand saw. The capital may be trimmed using a Saw-zall® with a 10" / 14" tooth saw blade.

3. Apply a good grade of construction adhesive between the top of the column shaft and the bottom of the capital (See Fig. B).

4. Center the capital on the top of the column. Remove any excess adhesive.

5. Countersink three [3] screw holes below the neck ring up through the base of the capital. Screws should be long enough to penetrate the base of the capital (see Fig. B).

6. Secure the capital with three galvanized or stainless steel [rust-proof] screws. Do not over tighten.

7. Raise soffit and slide assembled column with attached capital into place. Follow the column manufacturer's installation instructions.

D. INSTALLATION OF SPLIT COLUMNS AND CAPITALS

NOTE: Split columns and split capitals are not load bearing.

1. Join the two capital half's using a good grade of construction adhesive. Caulk all seems and finish as described below.

E. FINISHING

1. Finish by caulking all seams and drill holes.

2. Repairs to the capital may be made using automotive adhesive such as Bondo®.

3. Apply a high quality primer to both the column and capital.

4. Finish with a premium grade of topcoat paint (see Fig. C).

Endura Stone Load Bearing Decorative Capitals / Installation Instructions

OTHER INFORMATION

It is always advisable to check your local building codes before starting construction. If you have any questions regarding these installation instructions and your local building code requirements, please contact Ekena Millwork before starting installation. It is recommended that safety gloves, hats and goggles, as well as other specified safety equipment be used during installation and construction.

Ekena Millwork shall not be responsible if any failure to comply with these instructions results in the product failing to perform the purpose intended. Failure to comply with the above instructions shall result in voiding the terms and conditions as stated in the warranty.

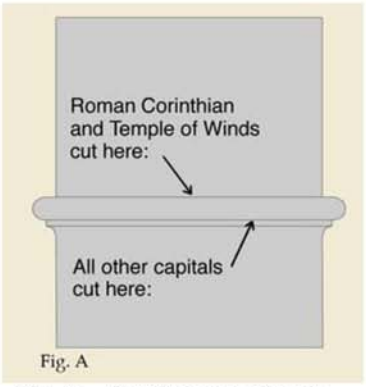


Fig. A – Cut Column at neck ring when installing decorative capitals.

Fig. B – Apply adhesive between the top and bottom of capital.

Fig. C –Apply a high quality primer before painting.

Endura Stone
Pass Flame Spread and Smoke Density Test

OVERVIEW

Ekena Millwork Endura-Stone Columns now pass the ASTM E, 84-01, "Standard Test Method for Surface Burning Characteristics of Building Materials" (NFPA 255, ANSI/UL 723 and UBC 8-1).

FEATURES & BENEFITS

Endrua-Stone Columns now have a Flame Spread Index (FSI): of 15. This index puts the Endrua-Stone Column in a Class I Flame-Spread classification under the 1997 uniform fire code. This is an industry first for FRP columns.

Endrua-Stone Columns also have a Smoke Developed Index (SDI) of 335. This index is well below the allowable SDI index of 450. This is also an industry first for FRP Columns.

Industry standard FRP columns have a typical Flame Spread Index (FSI) of 70-85 and a Smoke Developed Index (SDI) of 900-1025.

APPLICATIONS

Endrua-Stone Columns now pass the ASTM E, 84-01 test for interior applications in markets where the building code officials have started to enforce Section 318 of the 1995 CABO One and Two Family Dwelling Code or Section 803.3.2 of the 1996 BOCA National Building Code.

SPECIFICATIONS

Test Data

UNROUNDED FSI 15.5
UNROUNDED SDI 335.8
FS*TIME AREA (Ft*Min) 30.2
SMOKE AREA (%*Min) 273.2

OBSERVATIONS DURING TEST

IGNITION TIME (Min:Sec) 3:31
MAXIMUM FLAME FRONT ADVANCE (Ft.) 7.0
TIME TO MAXIMUM ADVANCE (Min:Sec 10:00
MAXIMUM TEMP. AT EXPOSED TC(*F): 563
TIME TO MAXIMUM TEMP. (Min:Sec) 9:57
TOTAL FUEL BURNED (Cu.Ft.) 52.4
DRIPPING (Min:Sec) None
FLAMING ON FLOOR (Min:Sec) 8:15
AFTERFLAME TOP (Min:Sec) 3:00+
AFTERFLAME FLOOR (Min:Sec) 3:00+

Full test results available on request.

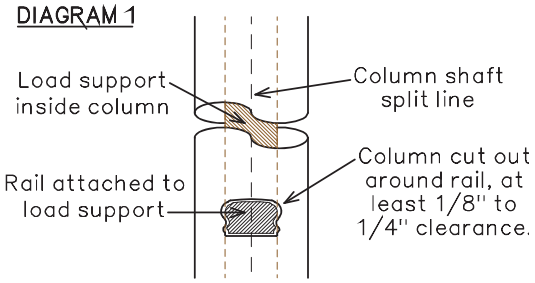
ENDURA-STONE® COLUMN SPLIT KIT #72665

INSTALLATION INSTRUCTIONS FOR REASSEMBLING SPLIT COLUMNS

Each kit contains six nylon locking straps with six 1/8" spacers and one quart (1.85 lb.) automotive body filler. For columns over 12 ft height, or 14" diameter, two kits will be required per column. We recommend using a carbide or abrasive (Carborundum or similar) blade to trim the shaft.

NOTE: Split columns/pilasters are not load bearing, nor can they be considered structural in any way, even when installed according to these instructions. Do not attach railing or other items requiring support directly to the column/pilaster: these must be connected to a structural member inside the column/pilaster or the wall behind the pilaster (see Diagram 1). We do not provide a warranty on split columns.

DIAGRAM 1



1. Measure the exact height at the location the column is to be installed. Be sure to include any draft angle your installation requires. The column must be trimmed 1/4" to 1/2" less than exact height.
2. Transfer these measurements to the column. Any excess must be trimmed from the bottom of the column.
3. Install L-brackets on each side of the column, two on the top and two on the bottom. Pre-drill the column to insert the bolts and do not over tighten the nuts as the column may fracture.
4. Install the column halves around the existing support. Carefully align the two halves together. Slip two 1/8" spacers onto each nylon strap. Loosely install the nylon straps around the assembled column approximately 2 to 3 feet apart (larger diameter columns may require two or more straps joined end to end to encircle column.) Insert 1/8" spacers into each side of the column and then pull the nylon straps tight (photo at right). After all straps and spacers have been installed, position the column and secure the L-brackets to the top and bottom surfaces.
5. Follow the body filler manufacturer's mixing recommendations. Work the body filler into the joints with a plastic body filler spreader or putty knife.
6. Wipe or scrape away any excess body filler. After the body filler has cured, cut the nylon straps and remove the spacers. Fill the areas of the joints where the spacers and straps had been with body filler.
7. After all of the body filler has cured, sand the joints smooth with sandpaper. If necessary, fill any low spots with body filler. Sand again until smooth.
8. Apply construction adhesive to the top of the cap. Push the cap up against the ceiling surface being careful to align the square portion of the cap to the surface. Apply construction adhesive to the bottom of the base. Push the base down against the floor surface being careful to align the square portion of the base to the surface.
9. Caulk the joint between the cap and the column shaft and the joint between the base and the shaft.
10. Column must be painted. Follow the recommended procedure on the instruction sheet included with the cap and base.

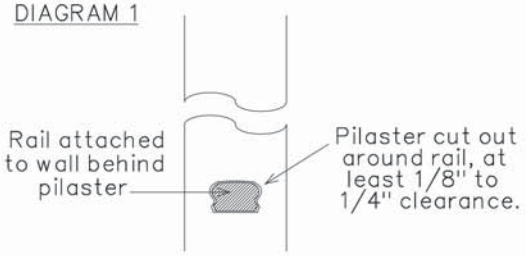
<u>Columns are not to be used in a free standing application. An internal structural support will be required on free standing applications.</u> If this column is installed where it could collect water or debris, the top of the column and cap MUST be flashed (covered) to prevent such collection. Use lead, copper, aluminum, galvanized, etc. flashing cut slightly larger than the cap, and fold the edges down over the cap before step 8. It is not permissible at any time to fill the interior of the column shaft with sand, concrete or any other material.

ENDURA-STONE® COLUMNS

INSTRUCTIONS FOR INSTALLING SPLIT COLUMNS AS PILASTERS

NOTE: If installing with ornamental capitals, we suggest that you trim/install column shaft first, then slide capital in place rather than trying to attach the capital to the shaft. Split columns/pilasters are not load bearing, nor can they be considered structural in any way, even when installed according to these instructions. Do not attach railing or other items requiring support directly to the column/pilaster: these must be connected to a structural member inside the column/pilaster or the wall behind the pilaster (see Diagram 1). When used as pilasters they must have room to shift for expansion, building settling, etc. We do not provide a warranty on split columns.

DIAGRAM 1



1. Measure the exact height at the location the column is to be installed. Be sure to include any draft angle your installation requires. **COLUMN SHOULD BE TRIMMED TO 1/4" or 1/2" LESS THAN EXACT HEIGHT**. (The Tuscan or Roman Doric cap will cover the gap so it won't be visible.)
2. Transfer these measurements to the column. Any excess must be trimmed from the bottom of the column.
3. Set column shaft in place temporarily, and scribe shaft to fit building wall correctly. This must be done to ensure a close fit without gaps where the column shaft engages the wall.
4. Install L-brackets on each side of the column, two on the bottom and two on the top (if using Tuscan or Roman Doric caps). Pre-drill the column to insert the bolts and do not over tighten the nuts as the column may fracture.
5. For columns with ornamental capitals, it may be necessary to attach blocking on the building wall to which the column will be attached, both at the top of the shaft, and where the capital will be installed (Diagram A on reverse). For tall columns, blocking may be permissible at the mid-point of the shaft (Diagram B on reverse).
    a. Blocking used is typically 2x4 pressure-treated lumber, about 4" long.
    b. Set column in place temporarily. Trace the outside edges of the column where blocking will be attached, and mark that location on the shaft as well. Remove shaft.
    c. Pre-drill and countersink holes in the column shaft at locations marked in step 4a (only one screw per block.) Screw holes should be enough bigger than the screws to allow for column expansion and building settling.
    d. Measure thickness of shaft at the pre-drilled holes. Allowing for the shaft thickness as measured, and the curve of the shaft (round columns) and about 1/8" free space, attach blocks with two non-corrosive screws.
    e. Set column in place over blocking. Column should not be tight - if it is, remove column and adjust blocking so there is about 1/8" free space. (Column shafts may expand/contract with temperature changes.) Attach with non-corrosive screws. DO NOT OVER-TIGHTEN SCREWS.
6. Attach angle brackets at bottom of column with Tapcon screws, and if using Tuscan or Roman Doric caps, attach top of column angle brackets with wood screws. (If using decorative capitals, see separate installation instructions. Capitals may be pre-drilled/countersunk and attached to blocks just like the shaft instructions in step 5.)
7. Flash cap or capital if necessary*. Apply construction adhesive to the top and back of the cap. For Tuscan and Roman Doric caps, push the cap up against the ceiling surface and flush with wall. If using ornamental capitals, attach to blocking (if used). Apply construction adhesive to the bottom and back of the base. Push the base down against the floor surface and flush with wall.
8. Use premium quality paintable latex caulk to finish any visible holes where screws were installed. Caulk the joint between the cap and the column shaft and the joint between the base and the shaft. Caulk along edges of shaft where it engages the wall. (Be sure your caulk is compatible with the paint you will be using.)
9. Column must be painted. Follow the recommended procedure on the instruction sheet included with the cap and base.

*If this column is installed where it could collect water or debris, the top of the column and cap MUST be flashed (covered) to prevent such collection. Use lead, copper, aluminum, galvanized, etc. flashing cut slightly larger than the cap, and fold the edges down over the top of the cap during step 6. It is not permissible at any time to fill the interior of the column shaft with sand, concrete or any other material.

Diagram A – for Ornamental Capitals

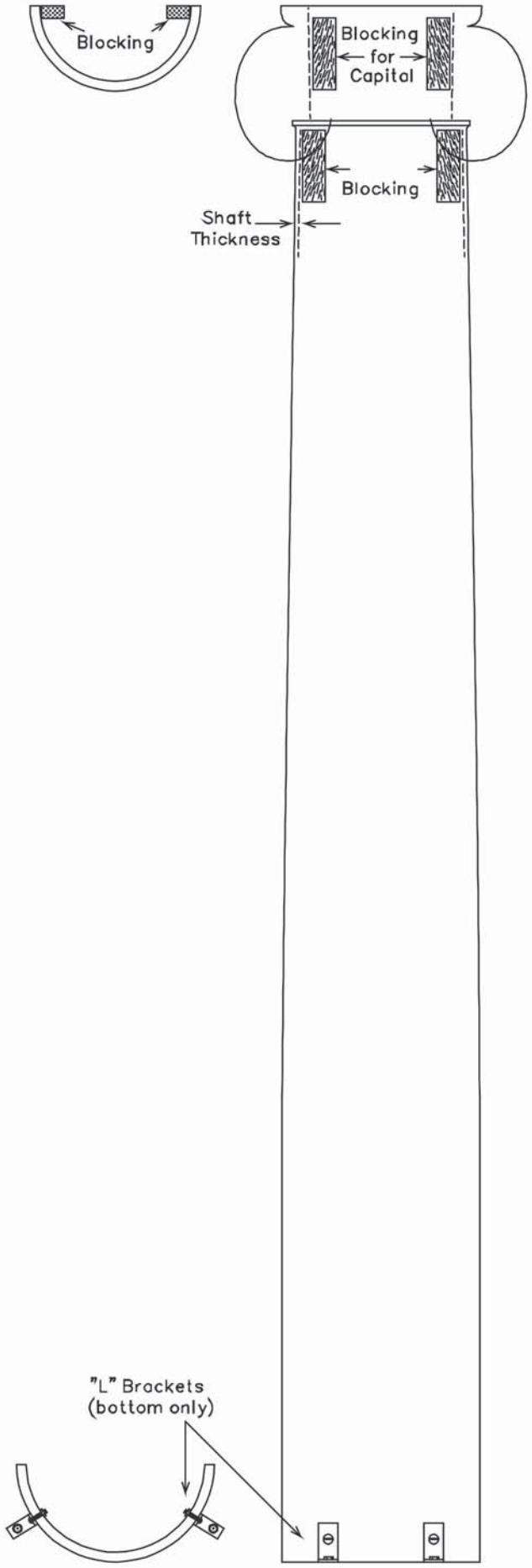


Diagram B – for Tuscan and Roman Doric Caps
(with optional blocking half-way up the shaft)