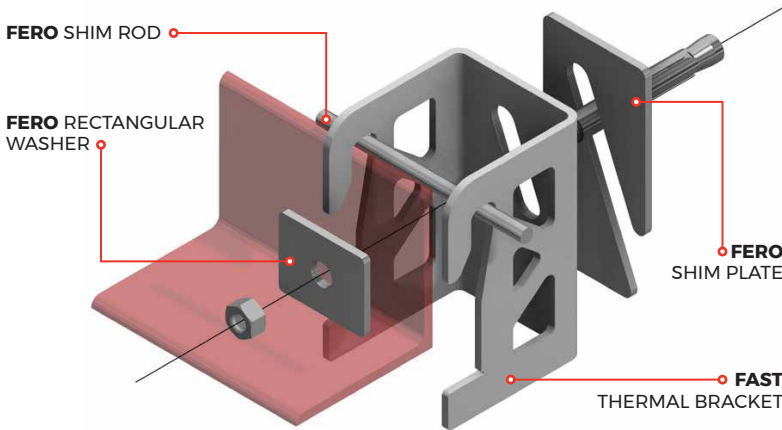



1. System Components



 Note that FERO must supply the FERO Punched Lintel Angle for use with FAST Lintel Brackets as a proprietary system.

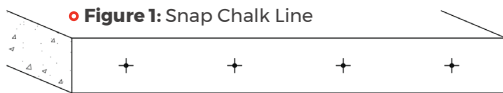
2. Installation of FAST Thermal Brackets are Typical and Straightforward

Installation procedure is generally applicable to all FAST Thermal Bracket configurations. For installation of the anchors, follow the installation instructions from the manufacturer.

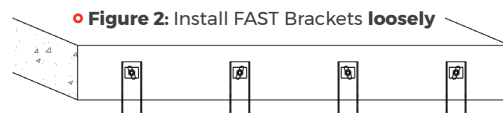
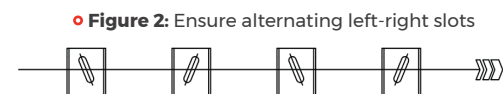
Adapt the FAST Thermal Bracket installation procedure for various wall assembly types.

INSTALLATION

- A** Snap a chalk line, mark the design location of the anchors, and install anchors per the manufacturer's instructions. **(Figure 1)**



- B** Install FAST Thermal Brackets ensuring that the slots are left-and-right alternating to lock Bracket from slip. Finger tighten anchor bolts. An oversized 4.76 mm (3/16") thick rectangular FAST Washer is supplied by FERO and is required for use with the anchor bolt. **(Figures 2, 3)**

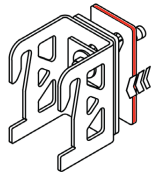


- C** Insert shelf angle and adjust Brackets so that shelf angle is level and positioned correctly. Tighten anchor bolts securely to structural backing. **(Figure 4)**



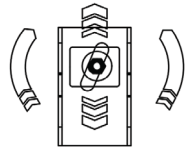
D OPTIONAL STEP

Install FERO Shim Plates (if required) to accommodate construction tolerances. FAST Shim Plates are placed between the structural backing and the backside of the FAST Thermal Bracket. The FAST Shim Plates must bear directly against the structural backing and extend.



• FERO Shim Plates

E Each FAST Thermal Bracket is installed so that the shelf angle rests firmly on the lower supporting legs of the Bracket. After adjusting and positioning the Brackets, the anchor bolts are seated by torquing in accordance with the manufacturer's recommendations.

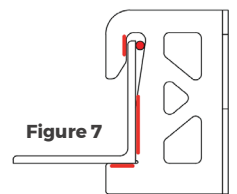


• Adjusting

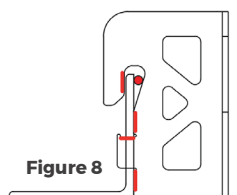
F The lower end of the angle's vertical leg (heel) must rest against the back of the Bracket slot and the upper end of the leg (toe) should be in direct contact with the Bracket claw. To temporarily brace a shelf angle so that it will not dislodge from the FAST Bracket during construction (by vertical impact, before placement of the veneer), FERO provides a hot dip galvanized steel Pin (FAST Shim Rod) that is driven between the backside of the vertical leg of the angle and the Bracket claw.

Install FERO Shim Rods to ensure that the vertical leg of angle is in contact with (back of) Bracket claw/(front of) Bracket slot. The FERO Shim Rod locks the shelf angle in place during construction.

One FERO Shim Rod is used for each length of angle, e.g., for an angle being held by four Brackets, the one shim rod can go in any of the Brackets holding that angle. Care must be taken to ensure that the shelf angle properly contacts and bears against the Bracket so the angle will not rotate or drop under the weight of the veneer. **(Figure 7, 8)** The FAST Shim Rod is hot dipped galvanized and can be left in-place if desired.



• Shim Rod **Standard**



• Shim Rod **Lintel**

3. Additional Considerations

A. FAST Thermal Brackets Alternating Slots

FAST Thermal Brackets have a single skewed slot on their back to receive the anchor bolt, and are manufactured with two different and opposing slot orientations. Orientation of the slots on adjacent brackets must be alternated (left and right) during installation. The slot is placed at a +/- 22.5 degrees on either side of vertical, which reduces the likelihood of Bracket slippage under load. When two or more Brackets are used, adjacent Brackets are installed to alternate the orientation of the slot so that Bracket slippage becomes restrictive. Vertical slippage prevention does not rely solely on the installation torque of the anchor bolt and the vertical frictional resistance developed between Bracket and backing. Because of the angled and opposing slot orientations between adjacent Brackets, the Brackets must slide laterally in-plane to slip vertically. The frictional resistance between the continuous shelf angle and adjacent Brackets helps to prevent in-plane lateral displacement of Brackets and reduces the likelihood of vertical displacement.

B. Shimming

To accommodate tolerances in the position of the structural backing that otherwise cannot be accommodated by selecting a different size Bracket, FAST Shim Plates are placed between the structural backing and the backside of the Bracket. The FAST Shim Plates must bear directly against the structural backing and are sized and configured to fit the back surface of the bracket and provide full bearing.

For typical 3/16" shims where the number of FAST Shim Plates per bracket would exceed two, a larger depth FAST Thermal Bracket should be installed in lieu of shimming. The further the FAST Thermal Bracket is shimmed, the more eccentricity is applied onto the anchor, resulting in more tension force and potential bolt bending. Anchors are typically the limiting factor for spacing of the FAST Thermal Bracket.

C. Shelf Angle and FAST Shim Rods

Once all adjustments have been made, veneer can be laid on the angle, respecting the requirements of all applicable standards for veneer installation and positioning with respect to the toe of the angle.

D. FAST Washers

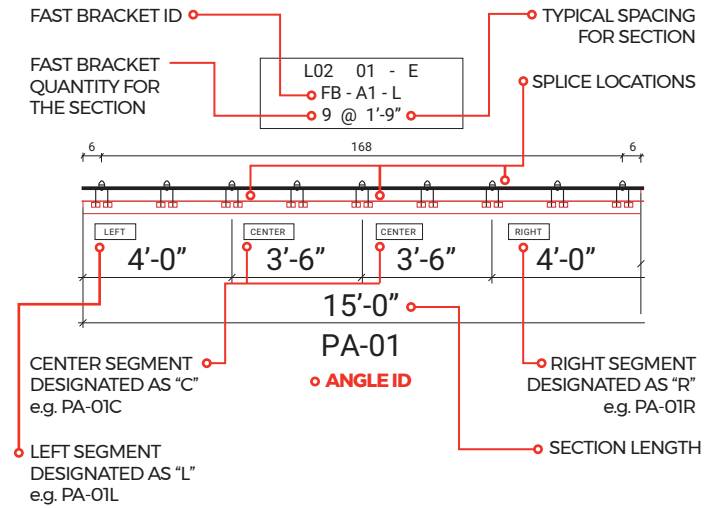
(Supplied with FAST Thermal Brackets) Must be used at every nut. Only FERRO FAST Washers can be used. FAST Washers should not be used for any other purpose and particularly should not be used as shims or spacers.

E. Air Vapour Barrier

If an air/vapour barrier membrane is installed behind the FAST Thermal Bracket, only use one layer of membrane, and scuff the plastic finish (if present) to reduce the likelihood of Bracket rotation and slip under load.

Angle Map Key

FERRO Punched Lintel Angles get cut down into shorter segments and are joined at FAST Thermal Lintel Brackets. An Angle Map will be provided for these cuts when FERRO Punched Lintel Angle is supplied. **The Angle Map Key below shows how to read the Angle Map.**



4. Contractor and/or Installer Disclaimer

The contractor shall verify all dimensions and components with the project drawings prior to commencing work. Resolve all discrepancies with FERRO prior to construction.

The installer of any FERRO components is responsible for installing accordingly with FERRO installation instructions. The installer shall clarify with FERRO of any ambiguities or uncertainties with the installation. For all non-FERRO components, follow the specifications and instructions provided by the manufacturer.

The contractor is solely responsible for site safety.

All steel components supplied by FERRO, including the FAST Thermal Brackets, Shim Plates and Shim Rods and FAST Washers are hot dip galvanized after fabrication in accordance with ASTM A123. FAST Thermal Brackets, FAST Shim Plates and FAST Washers are manufactured from 4.76 mm (3/16") mild steel plate. FAST Brackets are also available in stainless steel.

Copyright © 2023 FERRO Corporation

FERRO®, FAST®, Thermal Bracket™, FAST-FLEX™ are registered trademarks of FERRO Corporation.

The FERRO FAST family of masonry supports, as installed may fall within the scope of one or more US or foreign patents or patent applications. Those patents include US 9,316,004; US 9,447,585; US 10, 323,419; US 10,294,676; US 11,041,315; US 11,162,265; and other pending applications. Other US and Foreign Patents Pending.

FERRO Corporation

1-877-703-4463 or 1-780-455-5098

engineering@ferrocorp.com

www.ferrocorp.com

WARRANTIES AND DISCLAIMERS: As with all other manufactures, FERRO warrants that our products are manufactured from the appropriate grade and type of steel and galvanized in order to ensure that all products manufactured by FERRO satisfy the requirements of CSA A370 (which references ASTM A123), ACI 530.1/ASCE 6/TMS 602 (which references ASTM A153, 458 g/m²) and the International Building Code (IBC) (which reference ASTM A153, Class B, 458 g/m²). FERRO warrants that our products are manufactured to the applicable standards and codes. The properties of steel are known and our published data provides engineers and architects with all the data required to design/engineer. As the spacing and selection is done by the EOR, any failure of the products due to improper selection, engineering, spacing, etc. is not the responsibility of FERRO and FERRO assumes no liability or provides no warranty with respect to failure caused by issues unrelated to the manufacture of our products.

