

ICC-ES Evaluation Report


ESR-5161

Issued July 2024

Subject to renewal July 2025

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<p>DIVISION: 03 00 00 — CONCRETE</p> <p>Section: 03 15 00 — Concrete Accessories</p>	<p>REPORT HOLDER: STEP AHEAD TOOLS</p>	<p>EVALUATION SUBJECT: ACCUFOOTING</p>	
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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2021, 2018 and 2015 [International Building Code® \(IBC\)](#)
- 2021, 2018 and 2015 [International Residential Code® \(IRC\)](#)

Properties evaluated:

- Physical

2.0 USES

AccuFooting braces are used as stay-in-place form board braces and for rebar placement for continuous concrete footings 16 inches (406 mm) to 24 inches (610 mm) in width and up to 12 inches (305 mm) in depth.

3.0 DESCRIPTION

3.1 General:

AccuFooting braces are polyethylene braces available in two configurations, H-brace and V-brace. AccuFooting H-braces are used as stay-in-place form board braces, to provide additional support for removable formwork and to aid in the placement of longitudinal bottom reinforcing, by providing periodic support for up to three #3 through #6 size reinforcing bars. AccuFooting H-braces are spaced as necessary to maintain placement of bars with required coverage, typically between 2 ft (0.610 m) and 6 ft (1.829 m) on center. AccuFooting V-braces are stay-in-place braces that attach to the bottom bars of a footing and provide support for a longitudinal horizontal top reinforcing bar and vertical reinforcing dowels spaced periodically at and between V-braces. AccuFooting V-braces are oriented in an inverted V direction and attach to #3 through #6 size reinforcing bars. V-braces are spaced as required for the dowel or vertical bar, typically between 1 ft (0.305 m) to 6 ft (1.829 m) on center. AccuFooting H-braces and V-braces can be used together or independently of each other. See [Figure 1a](#) for placement of AccuFooting H-braces and V-braces used together, and [Figure 1b](#) for placement of AccuFooting V-braces without AccuFooting H-braces.

3.2 Material:

3.2.1 AccuFooting H-braces: The AccuFooting H-braces are high density polyethylene, injection molded braces. H-braces are available in nominal 16 inch (406 mm), 18 inch (457 mm), 20 inch (508 mm) and 24 inch (610 mm) sizes which correspond to 16 inch (406 mm), 18 inch (457 mm), 20 inch (508 mm) and 24 inch (610 mm) wide footings. AccuFooting H-braces are U-shaped, with flanges on both ends which hook over the top of removable nominal 2x form boards to provide additional bracing for formwork. Reinforcing retention tabs

are provided along the bottom of the H-brace to secure footing longitudinal bottom reinforcing bars. For AccuFooting H-brace dimensions, see [Figure 2](#).

3.2.2 AccuFooting V-braces: The AccuFooting V-braces are high density polyethylene, injection molded braces. V-braces are available in nominal 16 inch (406 mm), 18 inch (457 mm), 20 inch (508 mm) and 24 inch (610 mm) sizes which correspond to 16 inch (406 mm), 18 inch (457 mm), 20 inch (508 mm) and 24 inch (610 mm) wide footings. AccuFooting V-braces are inverted V's with retention tabs at each end of the V for attachment to footing longitudinal bottom reinforcing bars. Reinforcing retention tabs are provided at the top of the inverted V to secure a horizontal reinforcing bar and vertical wall reinforcing bar dowels. For AccuFooting V-brace dimensions, see [Figure 3](#).

3.2.3 Concrete: Concrete must be normal-weight concrete complying with IBC Chapter 19 or IRC Section R404, as applicable, and must have a maximum aggregate size such that concrete can be placed without honeycombs or voids in accordance with Section 26.4.2.1(a)(5) of ACI 318-19 (Section 26.4.2.1(a)(4) of ACI 318-14). Concrete must have a minimum specified compressive strength of 2,500 psi (17.2 MPa) at 28 days.

3.2.4 Reinforcing Bars: Reinforcing bars must be structural steel or fiber reinforced polymer reinforcing bars and dowels complying with IBC Chapter 19 or IRC Section R404, as applicable.

4.0 DESIGN AND INSTALLATION

4.1 Design:

Temporary formwork for foundations must be designed and installed in accordance with Section 26.11 of ACI 318 (-19 and -14) as required by Section 1808.8.6 of the 2021 IBC (1808.8.5 of the 2018 IBC and 2015 IBC) and Section 4.3 of ACI 332 (-20 and -14) as referenced by Section R403.1 of the IRC. Support for formwork, such as steel or wooden stakes, must be designed without consideration of additional support provided by AccuFooting H-Braces. Footings are limited to 16 inch, 18 inch, 20 inch and 24 inch widths.

AccuFooting H-braces and V-braces must be spaced as required to maintain a minimum concrete cover of 3 inches (75 mm) from reinforcing to any undisturbed earth surface, with an allowable tolerance in accordance with Section 26.6.2 of ACI 318 (-19 and -14) or Section 5.6.1 of ACI 332 (-20 and -14), as applicable.

AccuFooting H-braces and V-braces must not be used to support construction loads other than the reinforcing bars indicated in this report. Where V-braces are used in combination with H-braces, the spacing of H-braces must be adjusted to account for the increased weight added to the spans of supporting horizontal bars.

4.2 Installation:

Installation of AccuFooting braces must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

4.2.1 AccuFooting H-braces with optional AccuFooting V-brace installation: AccuFooting H-braces are installed with top flanges hooked over the top of the temporary form boards placed to both sides of the footing. Foundation horizontal bottom reinforcing bars are snapped into lock retention tabs. If required, AccuFooting V-braces are snapped onto the horizontal bottom bars. All AccuFooting V-braces must face in the same direction. Vertical reinforcing dowels and horizontal top reinforcing bars are snapped into place on AccuFooting V-brace lock retention tabs. Additional vertical reinforcing dowels may be provided between AccuFooting V-braces by tying to horizontal top reinforcing bar. Size, quantity, and grade of reinforcing must be based on the approved plans and the applicable code. After reinforcing is in place, concrete is poured and prepared as noted on the approved plans. Clear cover from grade to bottom of H-Brace must be a minimum of 1.5 inches unless otherwise noted in [Figure 4](#). See [Figure 4](#) for installation detail. Once concrete has set, the exposed top flanges of the AccuFooting H-brace and exposed portions AccuFooting V-brace may be struck off and removed as needed.

4.2.2 AccuFooting V-brace installation: If AccuFooting V-braces are to be installed without AccuFooting H-braces, foundation formwork and bottom reinforcing must be placed and supported in accordance with applicable codes. AccuFooting V-braces are then snapped onto the foundation horizontal bottom reinforcing bottom bars and installation may be completed following applicable portions of Section 4.2.1 of this report.

4.2.3 Reinforcing placement: Reinforcement must be placed as indicated on approved construction drawings. A minimum concrete cover of 3 inches must be maintained between reinforcing and bottom of footing. Clear cover from edge form to reinforcing must be a minimum of 3 inches. For IBC, tolerance for reinforcement placement must be in accordance with ACI 318 (-19 and -14) Section 26.6.2. For IRC, tolerance for reinforcement placement must be in accordance with ACI 332 (-20 and -14) Section 5.6.1 and braces must be installed in accordance with the applicable requirements of IRC Chapters 3, 4 and 5.

4.3 Special Inspections: When applicable, periodic special inspection for the reinforcement placement must be in accordance with Section 1705.3 and Table 1705.3 of the IBC.

5.0 CONDITIONS OF USE:

The AccuFooting braces described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The AccuFooting braces are manufactured, identified, and installed in accordance with this report and the Step Ahead Tools published installation instructions. If there is a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 AccuFooting braces must be stored indoors away from direct sunlight.
- 5.3 Concrete quality, mixing and placement must comply with IBC Section 1905 and IRC Sections R404.1, as applicable.
- 5.4 AccuFooting braces are manufactured under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Tension and shear test reports based on ASTM D638-14 and ASTM D732-17, respectively.
- 6.2 Quality Control Documentation in accordance with [ICC-ES Acceptance Criteria for Quality Documentation \(AC10\)](#), dated May 2022.

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5161) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, a label bearing the report holder's name (Step Ahead Tools) and address, the product name, and the evaluation report number (ESR-5161) is affixed to each pallet.
- 7.3 The report holder's contact information is the following:

STEP AHEAD TOOLS
POST OFFICE BOX 2455
BIGFORK, MONTANA 59911
(406) 885-1102
www.accufooting.com

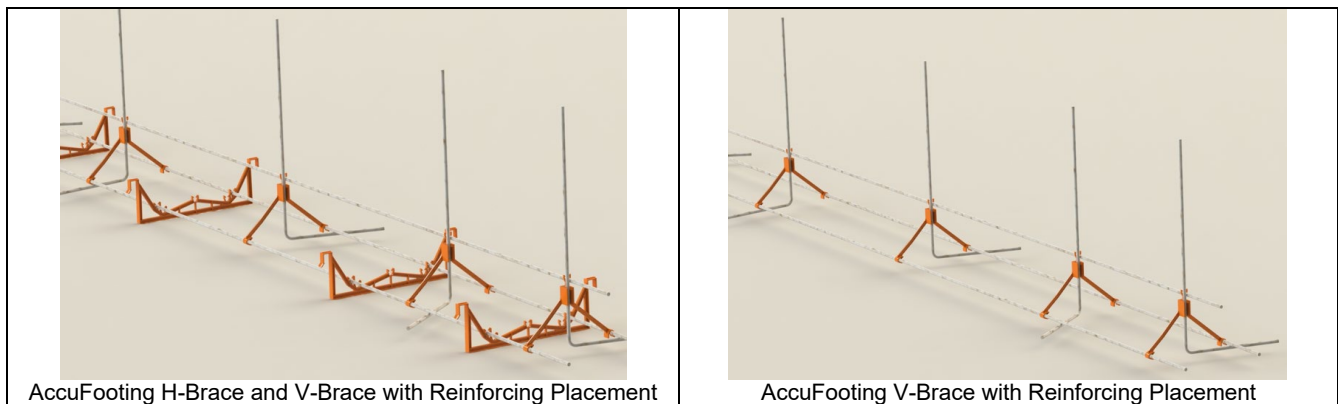


FIGURE 1— ACCUFOOTING H-BRACE AND V-BRACE INSTALLATION

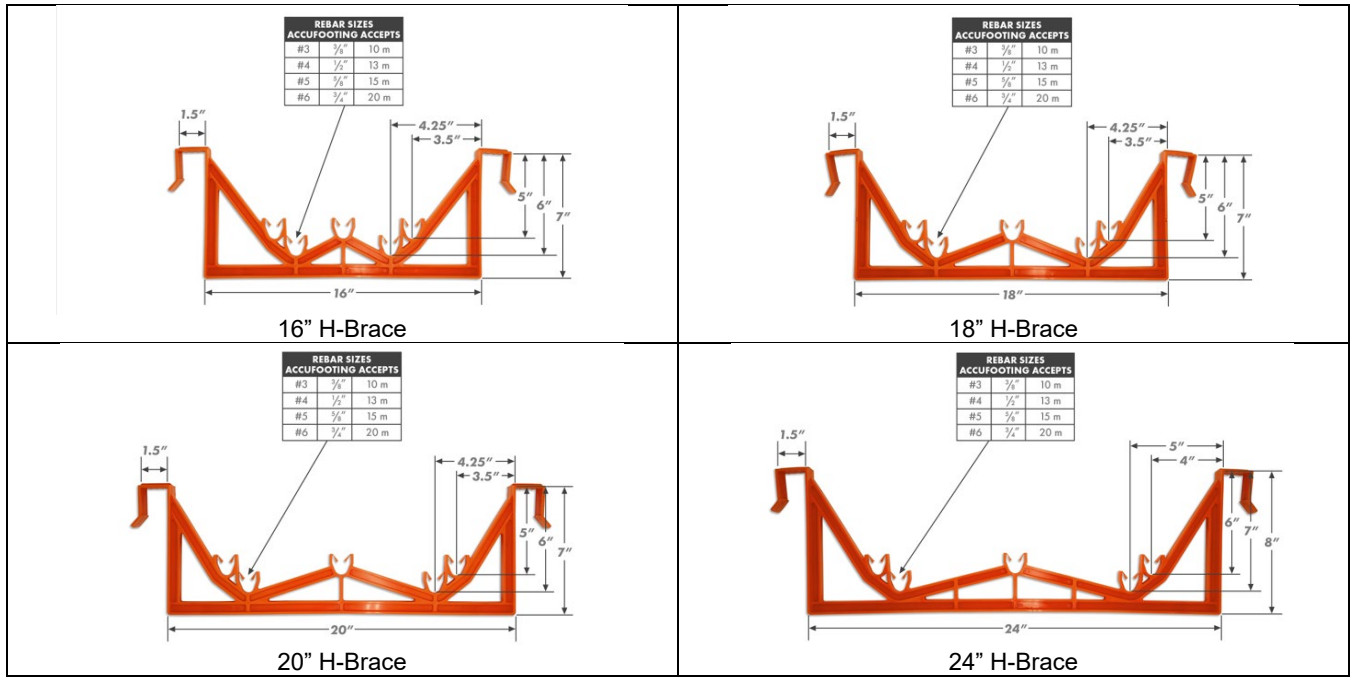


FIGURE 2— ACCUFOOTING H-BRACE DIMENSIONS

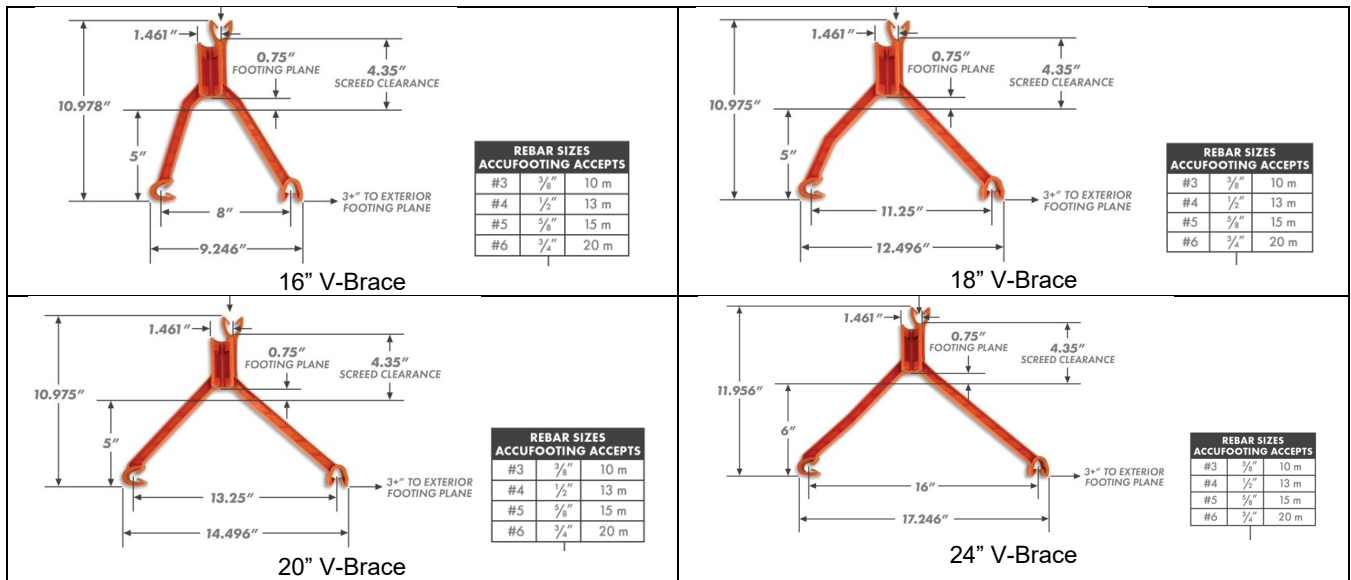
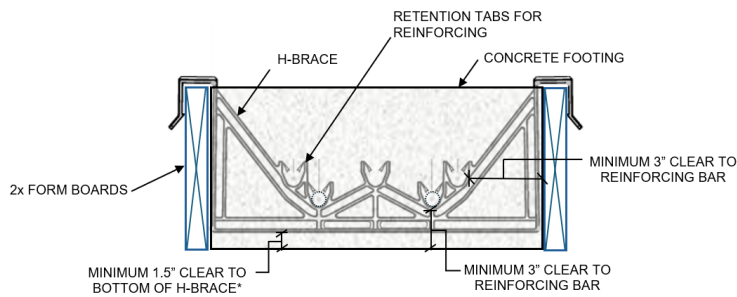


FIGURE 3— ACCUFOOTING V-BRACE DIMENSIONS



*MINIMUM CLEAR DISTANCE MAY BE REDUCED PROVIDED AGGREGATE CAN FLOW BELOW H-BRACE FOR PROPER PLACEMENT OF CONCRETE.

FIGURE 4— ACCUFOOTING H-BRACE INSTALLATION