ICC-ES Evaluation Report

ESR-2990

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Subject to renewal September 2025

DIVISION: 06 00 00—WOOD, PLASTICS, AND COMPOSITES **Section: 06 05 23—Wood, Plastic, and Composite Fastenings**	**REPORT HOLDER:** **APPLETON SUPPLY CO., INC.**	**EVALUATION SUBJECT:** **WALL BRACE**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

Property evaluated:

- Structural

2.0 USES

The Appleton Supply Co., Inc., Wall Brace (ASC Wall Brace) is used as an alternative to the code-prescribed nominally 1-by-4 continuous diagonal wood brace used as wall bracing in accordance with IBC Section 2308.9.3 and IRC Section R602.10.3.

3.0 DESCRIPTION

3.1 General:

The ASC Wall Braces are made from No. 20 gage, galvanized steel fabricated into a member with a T-shaped cross section, with one 1.875-inch-wide (48 mm) flange and two 0.375-inch-deep (9.5 mm) parallel webs. The braces are precut into lengths of 9 feet 3 inches (2819 mm) and 11 feet $3^3/_4$ inches (3448 mm). See Figure 2. The brace has a flange that extends into a $^5/_{32}$-inch-wide-by-$^1/_2$-inch-deep (4 mm by 13 mm) slot that is kerf cut into the exterior side of the wall framing.

3.2 Material:

The ASC Wall Braces described in this report are fabricated from ASTM A 653, SS designation, Grade 50, class 1, galvanized steel with a minimum yield strength, F_y, of 50,000 psi (345 MPa) and a minimum tensile strength, F_u, of 65,000 psi (448 MPa). The minimum base-metal thickness of the No. 20 gage steel is 0.0296 inch (0.752 mm). The ASC Wall Braces have a minimum G60 zinc coating specification in accordance with ASTM A 653.

4.0 DESIGN AND INSTALLATION

4.1 Design:

When installed in pairs (refer to Section 4.2), the pair of ASC Wall Braces is substituted for the nominally 1-by-4 continuous diagonal wood let-in brace prescribed in the wall bracing provisions of IBC Section 2308.9.3 and IRC Section R602.10.3. Each ASC Wall Brace is to resist only tension forces. The use of the ASC Wall Brace in engineered designs is beyond the scope of this report.

4.2 Installation:

Iinstallation of ASC Wall Braces must be in conformance with this evaluation report and the manufacturer's published installation instructions. In the event of a conflict between this report and the manufacturer's published installation instructions, this report governs.

The ASC Wall Braces are attached to the wood framed wall by nailing the brace to the top and bottom plates of the wall, and to the intervening studs using two 8d common nails at each connection location. The wood framed stud walls must be constructed in accordance with IBC Section 2308 and IRC Section R602, using 2-inch nominal dimension framing lumber spaced a maximum of 16 inches (406 mm) on center, and a maximum wall height of 10 feet (3048 mm).

After the wall framing is built, but prior to the installation of the wall braces, the wall is squared and the exterior sides of the studs along with the top and bottom plates are marked as to where the saw kerf is to be cut to receive the wall brace. This saw kerf must run at an angle not more than 60 degrees and not less than 45 degrees from the horizontal, from the bottom of the sill plate to the top of the top plates. The kerf is made with a single saw cut made to a depth of $^{1}/_{2}$ inch (13 mm) with a blade that will produce a kerf width of $^{5}/_{32}$ inch (4 mm). The flange of the wall brace is driven into each saw kerf with a hammer and nailed at each stud and plate intersection with two 8d common nails.

The ASC Wall Braces must be installed on the exterior side of the wall framing in pairs in an opposing "V" fashion. Diagonal wall bracings usually run from near the outside corner at the top plate down to the sole or bottom plate. Wall braces must not be interrupted by openings in the walls. Refer to Figure 1 for an illustration of the typical installation requirements.

5.0 CONDITIONS OF USE:

The ASC Wall Brace described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The Appleton Supply Co., Inc., Wall Brace must be manufactured, identified and installed in accordance with this evaluation report and the manufacturer's published installation instructions. A copy of the instructions must be available at the jobsite at all times during installation. In the event of a conflict between this report and the manufacturer's published installation instructions, this report governs.

5.2 The Appleton Supply Co., Inc., Wall Brace must be installed in a wall with a maximum height of 10 feet, and a maximum stud spacing of 16 inches (406 mm), and must be installed in opposing pairs in order to be able to withstand loading from opposite directions without placing the Wall Brace in compression. The angle between the ASC Wall Brace and the horizontal must be between 45 degrees and 60 degrees as described in Section 4.2 of this evaluation report.

5.3 The wood framed walls, to which the braces are installed, must be constructed in accordance with the applicable code, including Section 2308.9.3 of the IBC and Section R602.10.3 of the IRC, as applicable.

6.0 EVIDENCE SUBMITTED

6.1 Structural calculations in accordance with applicable code provisions, including code-prescribed capacity of the let-in brace.

6.2 Quality documentation in accordance with the ICC-ES Acceptance Criteria for Quality Documentation (AC10), dated February 2009 (editorially revised June 2009).

7.0 IDENTIFICATION

7.1 The Appleton Supply Co., Inc., Wall Braces described in this report are identified with a die-stamp label indicating the name of the report holder (Appleton Supply Co., Inc.), the report number (ESR-2990) and the manufacturer's model number and UPC code number.

7.2 The report holder's contact information is the following:

APPLETON SUPPLY CO., INC.
1905 WEST HASKELL STREET
APPLETON, WISCONSIN 54912

NOTE:
1. Maximum Stud Spacing 16" O.C.
2. Two (2) 8d Nails per Stud/Plate (Typical)
3. 45°-60° Installation Angle

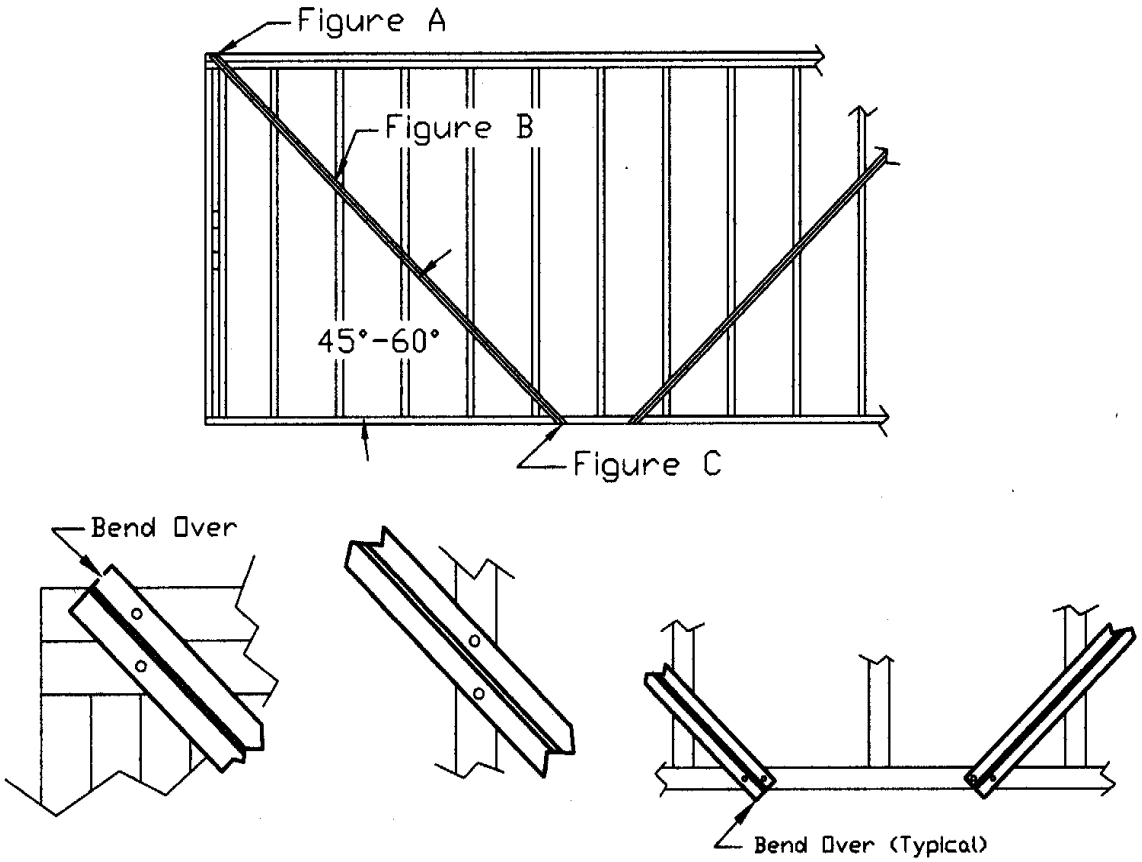

FIGURE 1—TYPICAL INSTALLATION OF THE ASC WALL BRACE

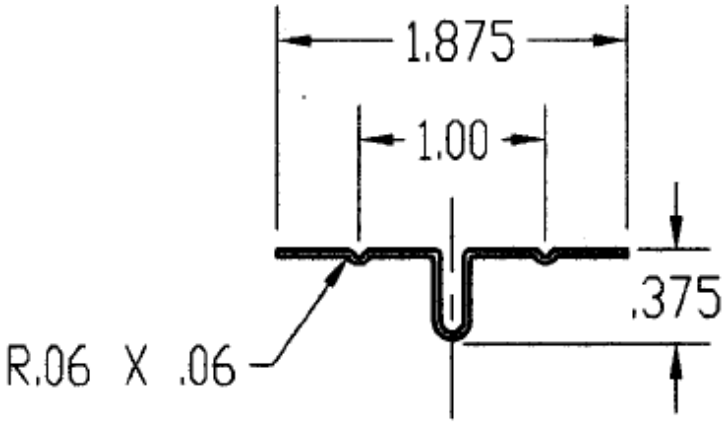

FIGURE 2—ASC WALL BRACE CROSS SECTION