



ICC-ES Listing Report ESL-1131

Reissued July 2024

This listing is subject to renewal in July 2025.

CSI: DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 84 00—Firestopping

DIVISION: 23 00 00—HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)
Section: 23 31 13—Metal Ducts

Product Certification System:

The ICC-ES product-certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the listee's quality system.

Product: FLAMEBAR BW11 RISER DUCT SYSTEM

Listee: CONQUEST FIRESPRAY LLC

Evaluation: The Flamebar BW11 Riser Duct System was evaluated as a through-penetration firestop system when vertically-mounted through an unrestrained 2-hour fire-resistance-rated concrete slab floor-ceiling assembly as described in the Assembly Section and tested to the following standard:

- ASTM E814 (-2013a and -2008b), Standard Test Methods for Fire Tests of Penetration Firestop Systems, ASTM International

Firestop System:

The firestop system consists of the Flamebar BW11 Riser Duct System comprising of steel Flamebar BW11 Fire Ducts penetrating vertically through the floor-ceiling assembly, mineral wool insulation that protects and seals the annular space between the duct and the concrete slab, structural supports to suspend the Flamebar BW11 Fire Ducts, and one layer of 5/8-inch-thick (15.8 mm) Type X gypsum wallboard surrounding the duct. Each Flamebar BW11 Riser Duct System uses minimum No. 22 gage galvanized steel [nominally 0.034-inch thick (0.85 mm)] Flamebar BW11 Fire Ducts that are factory coated on the exterior face with Flamebar BW11 coating at a nominal thickness of 1.0 mm. The overall maximum cross-sectional dimensions of the Flamebar BW11 Fire Ducts are 36 inches x 36 inches (914.4 mm x 914.4 mm) and shall be installed through maximum 40 inch x 40 inch (1016 mm x 1016 mm) openings in the test assembly. The Flamebar BW11 Fire Ducts of the Flamebar BW11 Riser Duct System shall be installed as described below in Items 1, 3 and 4 with either independent framing Items 2A and 5A or attached framing Items 2B and 5B.

FLAMEBAR BW11 RISER DUCT SYSTEM (FIGURE 1):

1- FLOOR-CEILING ASSEMBLY – Minimum 4.6 inch thick (116.8 mm) reinforced concrete slab, unrestrained, 2-hour fire-resistance-rated floor-ceiling assembly constructed in accordance with Item 2-1.1 of Table 721.1(3) of the IBC.

2- FLAMEBAR BW11 FIRE DUCT OPTIONS – Use Item 2A with Item 5A and use Item 2B with item 5B.

2A - FLAMEBAR BW11 FIRE DUCT – Minimum No. 22 gage galvanized steel [nominally 0.034-inch thick (0.85 mm)] Flamebar BW11 Fire Ducts, factory coated on the exterior face with nominally 1.0 mm thick Flamebar BW11 coating and constructed with nominal 1-inch diameter (25.4 mm) minimum 22 gage steel tubing cross reinforcements, factory installed midway down the length of each duct section. One end of each duct section is equipped with a self-adhered black Flamebar gasket seal and either a T25 straight or T24 transverse duct connection (TDC flange). The duct sections at each duct joint

connection shall be fastened together at each duct corner with one (1) $\frac{3}{8}$ -inch x $1\frac{1}{2}$ -inch-long (9.5 mm x 38.1 mm) bolt; or the duct sections are to be fastened together with No. 10 x $\frac{3}{4}$ -inch-long (19.1 mm) self-drilling screws spaced nominally 12 inches (304.8 mm) on center, and 6 inches (152.4 mm) from the duct corners (3 screws per side of duct).

2B - FLAMEBAR BW11 FIRE DUCT – Minimum No. 22 gage galvanized steel [nominally 0.034-inch thick (0.85 mm)] Flamebar BW11 Fire Ducts, factory coated on the exterior face with nominally 1.0 mm thick Flamebar BW11 coating. One end of each duct section is equipped with a self-adhered black Flamebar gasket seal and Ductmate Industries, Inc. Ductmate™ Flanges. The duct sections at each duct section joint connection shall be fastened at each duct corner with one (1) $\frac{3}{8}$ -inch x $1\frac{1}{2}$ -inch long (9.5 mm x 38.1 mm) bolt and Ductmate Industries, Inc. Ductmate™ G Clamps spaced nominally 12 inches (304.8 mm) on center, 6 inches (152.4 mm) from the duct corners (3 clamps per side of duct).

- 3- **ANNULAR SPACE (NOMINAL) AND FIRESTOPPING MATERIAL** – The Flamebar BW11 Fire Duct shall be centered in the concrete slab opening with a 2 inch (50.8 mm) annular space, except that where the duct is offset towards one side of the slab opening, resulting in a minimum 1-inch (25.4 mm) annular space on one side of the duct and a maximum 3 inch (76.2 mm) annular space on the opposite side of the duct. All annular spaces between the duct and the concrete shall be filled with nominal 4-inch-thick (101.6 mm) nominal 4 pcf (64 kg/m³) density mineral wool insulation, cut to achieve 50 percent compression, and installed 6 inches (152.4 mm) deep with the fibers oriented vertically.
- 4- **DUCT SUPPORTS ON TOP OF FLOOR-CEILING ASSEMBLY** – A minimum 2 inch x 2 inch x $\frac{1}{8}$ -inch (50.8 mm x 50.8 mm x 3.1 mm) steel angle shall be installed on all four sides of the duct on the top surface of the floor-ceiling assembly, and attached to the duct wall with $\frac{3}{8}$ -inch-diameter x $1\frac{1}{2}$ -inch-long (9.5 mm x 38.1 mm) bolts spaced nominally at 8 inches (203.2 mm) on center and 2 inches (50.8 mm) from the duct's corners. Two of the duct supports shall have a minimum bearing width on the concrete slab of 1-inch (25.4 mm).
- 5- **STEEL FRAMING** – Use either independent framing Item 5A with Item 2A or attached framing Item 5B with Item 2B.

5A - GYPSUM WALLBOARD AND INDEPENDENT FRAMING – Independent framing of 2 $\frac{1}{2}$ -inch-deep (63.5 mm), No. 26 gage galvanized steel studs (250S125-18) spaced nominally at 24 inches (609.6 mm) on center and shall be secured to U-shaped No. 22 gage galvanized steel top and bottom tracks using No. 8 x $\frac{1}{2}$ -inch-long (12.7 mm) self-drilling screws, with the steel tracks attached to the concrete slab with $\frac{1}{4}$ -inch diameter x $1\frac{1}{4}$ -inch-long (6.3 mm x 31.7 mm) concrete anchors (3 anchors per wall section). One layer of $\frac{5}{8}$ -inch-thick (15.8 mm) Type X gypsum wallboard (installed with the wallboards' longitudinal edge vertical with a horizontal butt joint at 120 inches (3048 mm) above the unexposed surface of the floor-ceiling assembly) shall be secured to the steel framing with minimum No. 6 x $1\frac{1}{4}$ -inch-long (31.8 mm) Philip bugle-head coarse thread (12 thread per inch) sharp point drywall screws spaced nominally at 12 inches (304.8 mm) on center, with the gypsum wallboard joints and screws receiving a Level 2 finish complying with ASTM C840 or GA 216.

5B - GYPSUM WALLBOARD AND ATTACHED FRAMING – Factory-installed attached framing consisting of Z-shaped No. 26 gage galvanized steel members with 1-inch wide (25.4 mm) flange, a 1-inch high (25.4mm) web and a 2-inch wide (50.8 mm) flange, where the 1-inch wide (25.4 mm) flange side of the Z-shaped steel member is in contact with the Flamebar BW11 Fire Duct and spaced at maximum 24 inches (609.6 mm) on center and at the corners. A spacer strip longitudinally aligned with, and attached to, the Z-shape steel member shall be continuously installed vertically, except at the duct flanges. The attached factory framing shall be secured to the steel ducts using No. 10 x $\frac{3}{4}$ -inch-long TEK screws spaced nominally at 8 inches (203.2 mm) on center. The spacer strips shall be at minimum two-inch wide (50.8 mm) by $\frac{1}{2}$ -inch thick (12.7 mm) Type X gypsum wallboard. An additional spacer strip layer of $\frac{1}{2}$ -inch thick (12.7 mm) or $\frac{5}{8}$ -inch-thick (15.8 mm) Type X gypsum wallboard shall be installed over the initially installed spacer strip as necessary to ensure that the gypsum wallboard finish overlaps the concrete slab. One layer of $\frac{5}{8}$ -inch-thick (15.8 mm) Type X gypsum wallboard shall be installed over the attached framing, with the wallboards' longitudinal edge vertical with a horizontal butt joint at 120 inches (609.6 mm) above the unexposed surface of the floor-ceiling assembly, and fastened through the gypsum wallboard strips with minimum No. 8 x 2-inch-long (50.8 mm) Phillips bugle-head coarse thread (12 thread per inch) sharp point drywall screws spaced nominally at 12 inches (304.8 mm) on center, with the gypsum wallboard joints and screws receiving a Level 2 finish complying with ASTM C840 or GA 216.

Findings:

When installed as described in this report, the Flamebar BW11 Riser Duct System is a through-penetration firestop system with a F Rating of 2 hours and a T Rating of 2 hours, when the Flamebar BW11 Fire Ducts are vertically-mounted through an unrestrained, non-load bearing, 2-hour fire-resistance-rated concrete slab floor-ceiling assembly constructed in accordance with Item 2-1.1 of Table 721.1(3) of the 2018, 2015 and 2012 IBC. Testing is in accordance with ASTM E814, as referenced in the applicable sections of the following code editions:

- 2018 and 2015 *International Building Code*®
Applicable Section: 714.4.1.2
- 2012 *International Building Code*®
Applicable Section: 714.4.1.1.2

Identification:

1. Each component of the Flamebar BW11 Riser Duct System is identified by a label that includes the product name, the name and address of the manufacturer (Conquest Firespray LLC), the listing report number (ESL-1131), and the ICC-ES Listing Mark.
2. The report holder's contact information is the following:

CONQUEST FIRESPRAY LLC
28408 LORNA AVENUE
WARREN, MICHIGAN 48092
(586) 576-7600
www.conquest-firespray.com

Installation: The Flamebar BW11 Riser Duct System must be installed in accordance with Conquest Firespray LLC's published installation instructions and this listing.

Conditions of Listing:

1. The listing report addresses an unrestrained, non-load bearing minimum 4.6-inch-thick (116.8 mm), 2-hour fire-resistance-rated concrete floor-ceiling assembly constructed in accordance with Item 2-1.1 of Table 721.1(3) of the 2018, 2015 and 2012 IBC with the vertically-mounted Flamebar BW11 Riser Duct System penetrating vertically through the floor-ceiling assembly.
2. The listing report addresses only conformance with the standard and the code sections noted above.
3. Approval of the product's use is the sole responsibility of the local code official.
4. The listing report applies only to the Flamebar BW11 Riser Duct System materials tested and as submitted for review by ICC-ES.
5. The Flamebar BW11 Riser Duct System described in this listing report is produced under a quality control program with inspections by ICC-ES.

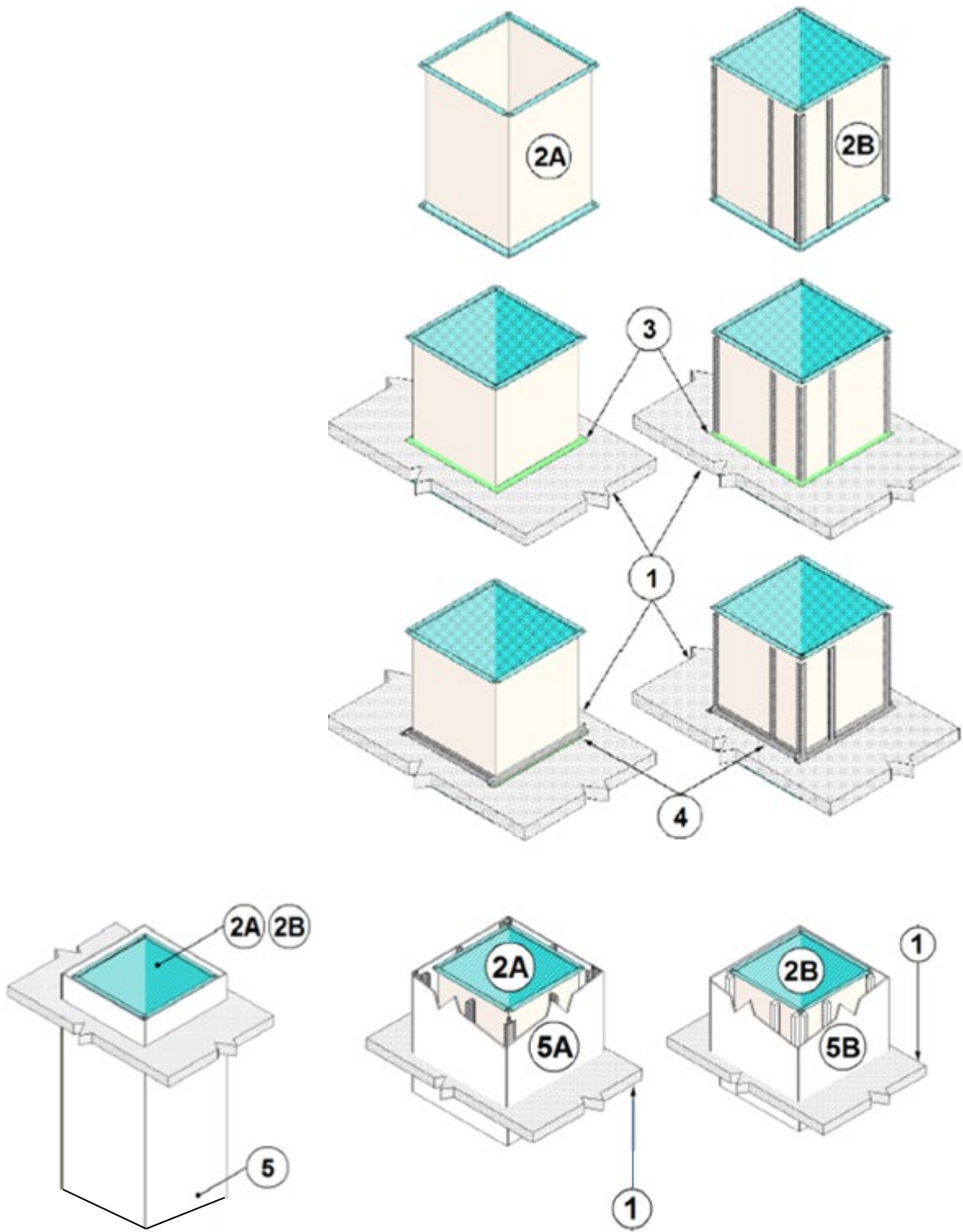


FIGURE 1—FLAMEBAR BW11 RISER DUCT SYSTEM WITH INDEPENDENT FRAMING (2A and 5A) AND ATTACHED FRAMING (2B and 5B)