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ICC-ES Listing Report ESL-1438

Issued August 2023
Revised January 2024
This listing is subject to renewal August 2024.

CSI: DIVISION: 13 00 00—SPECIAL CONSTRUCTION
Section: 13 26 00—Fabricated Rooms
Section: 13 26 13—Storm Shelter Rooms

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: THE KNIGHT

Listee: SURVIVAL ZONE, LLC

Evaluation: The Knight is a safe room consisting of ¼-inch thick (6.3 mm) ASTM A36 steel wall panels with a ¼-inch thick (6.3 mm) steel roof panel. Each room includes a manual operated steel door with four – $^{7}/_{8}$-inch diameter (22 mm) horizontal stainless steel latch pins. See Table 1 and Figure 1 for components and details. The Knight was evaluated to the following standards:

- ICC 500-2020, ICC/NSSA Standard for the Design and Construction of Storm Shelters, International Code Council and National Storm Shelter Association.
- ASTM E330-14, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, ASTM International.
- ASTM E1886-19, Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials, ASTM International.

Findings: The Knight safe room, at tabulated sizes indicated in Table 1, has met the test requirements detailed in Table 2 for an above-ground, tornado shelter when tested in accordance with ICC 500, as referenced in the applicable sections of the following code edition:

- 2021 *International Building Code®*
  Applicable Sections: 202, 423, 1031.2 Exception 5, 1604.5.1 Exception, and 1604.10
- 2021 *International Residential Code®*
  Applicable Sections: R323

Identification:

1. The ICC-ES mark of conformity, electronic labeling, or the listing report number (ICC-ES ESL-1438), and when applicable, the ICC-ES listing mark, along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
2. In addition, the Knight is identified by a label on the packaging bearing the manufacturer's name (Survival Zone) and address, the product name (The Knight), manufacturer's lot number, Hazard use – Tornado, Missile Weight and Speed, Design Wind Pressure, and the phrase "2020 edition of ICC 500".

3. The report holder's contact information is the following:

   SURVIVAL ZONE, LLC
   37312 NORTH 4030 ROAD
   TALALA, OKLAHOMA 74080
   www.survivalzonesaferooms.com

Installation: The product must be installed in accordance with Survival Zone's published installation instructions and applicable standard. Connection of the Knight safe room to an existing concrete foundation or slab must meet the design and installation requirements in Section 307 of ICC 500.

Conditions of Listing:

1. The listing addresses only conformance with the standards noted above.
2. Approval of the product's use is the sole responsibility of the local code official.
3. The listing applies only to the materials tested and as submitted for review by ICC-ES.
4. Complete plans verifying compliance with this listing must be submitted to the code official for each project at the time of permit application, when required by the statutes of the jurisdiction in which the project is to be constructed.
5. The Knight is manufactured under a quality control program with inspections by ICC-ES.

TABLE 1: STORM SHELTER COMPONENTS FOR THE KNIGHT

ROOM DIMENSION[1]	DOOR	WALL PANELS[2]	ROOF PANEL	VENT
36 in. wide by 48 in. long	One - 24 in. wide by 73 in. long by ¼ -in. thick	Two – 36 in. wide by 80 in. tall by ¼ -in thick Two – 60 in. wide by 80 in. tall by ¼-in. thick	One – 36 in. wide by 48 in. long by ¼ -in. thick	One – 3 in. wide by 9 in. long located on roof panel.
36 in. wide by 60 in. long	One - 24 in. wide by 73 in. long by ¼ -in. thick	Two – 36 in. wide by 80 in. tall by ¼ -in thick Two – 60 in. wide by 80 in. tall by ¼-in. thick	One – 36 in. wide by 60 in. long by ¼ -in. thick	One – 3 in. wide by 9 in. long located on roof panel.
42 in. wide by 60 in. long	One - 30 in. wide by 73 in. long by ¼ -in. thick	Two – 42 in. wide by 80 in. tall by ¼ -in thick Two – 60 in. wide by 80 in. tall by ¼- in. thick	One – 42 in. wide by 60 in. long by ¼ -in. thick	One – 3 in. wide by 9 in. long located on roof panel.
48 in. wide by 48 in. long	One - 24 in. wide by 73 in. long by ¼ -in. thick	Four – 48 in. wide by 80 in. tall by ¼ -in. thick	One – 48 in. wide by 48 in. long by ¼ -in. thick	One – 3 in. wide by 9 in. long located on roof panel.
48 in. wide by 72 in. long	One - 30 in. wide by 73 in. long by ¼ -in. thick	Two – 48 in. wide by 80 in. tall by ¼ -in thick Two – 72 in. wide by 80 in. tall by ¼ -in. thick	One – 48 in. wide by 72 in. long by ¼ -in. thick	One – 3 in. wide by 9 in. long located on roof panel.
48 in. wide by 96 in. long	One - 30 in. wide by 73 in. long by ¼ -in. thick	Two – 48 in. wide by 80 in. tall by ¼ -in thick Two – 96 in. wide by 80 in. tall by ¼ -in. thick with additional steel support rib welded vertically to the center of the inside face.	One – 48 in. wide by 96 in. long by ¼ -in. thick with additional steel support rib welded vertically to the center of the inside face.	Two– 3 in. wide by 9 in. long located on roof panel.

For **SI**: 1 in. = 25.4 mm

1. The Knight safe room dimensions can range between 36 inches wide by 48 inches long to 48 inches wide by 96 inches long. Custom rooms between tabulated size ranges are available upon request.
2. For wall panels, the height ranges from 76 inches to 93 inches and are available upon request.

TABLE 2 – ICC 500 REQUIREMENTS

ICC 500 SECTION(S)	TEST METHOD	REQUIREMENT	RESULT
305.1, 305.2, Table 305.1.1, 306.1, and 803	Impact test requirements – ASTM E1886	All storm shelter components (wall and roof panels and doors) shall meet wind-borne debris and impact test requirements at the 250-mph design wind speed	Pass
304 and 805	Static and Cyclic Pressure requirements – ASTM E330	All storm shelter components (wall and roof panels and doors) shall be static pressure tested to 1.2 times the design wind pressure	Pass Positive/Negative Design Wind Pressure Load = 117 psf Positive/Negative Test Static Pressure load = 140.4 psf

For **SI**: 1 ft = 304.8 mm, 1 psf = 47.88 Pa

TABLE 2 – THE KNIGHT SAFE ROOM (TYPICAL)