



STERLING CUSTOM SHEET METAL, INC.
27112 FM 2978
Magnolia, TX 77354
www.sterlingcustomsheetmetal.com

STERLING BEST SEALED- INSULATED AIR REGISTER BOX

CSI Division:
**23 00 00 HEATING VENTILATION AND
 AIR CONDITIONING (HVAC)**

1.0 AREA OF RECOGNITION

Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box recognized in this report has been evaluated for surface burning and progressive combustion, and is a suitable alternative for use with HVAC ducts required in the IMC and IRC. The following code editions are recognized:

- 2021, 2018, 2015, 2012, 2009, and 2006 International Mechanical Code® (IMC)
- 2021, 2018, 2015, 2012, 2009, and 2006 International Residential Code® (IRC)
- 2023 Florida Building Code – Mechanical (FBC-Mechanical)
- 2023 Florida Building Code – Residential (FBC-Residential)
- LC-1017, approved October 2008 (applicable portions)

2.0 LIMITATIONS

Use of Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box recognized in this report is subject to the following limitations:

2.1 Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box shall be manufactured, identified, and installed in accordance with this report and the applicable code. In the event of a conflict, this report governs.

2.2 Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box is limited to use in HVAC systems contained in buildings of Type V nonrated construction under the IBC and any type of construction permitted by the IRC.

2.3 Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box is limited to a total of 13 pounds of foam per 1000 square feet of floor area.

3.0 PRODUCT/CODE APPLICATION

Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box is a factory-made, internally

insulated, polyurethane transition HVAC fitting from square to round metallic duct. The Sterling's Best Sealed Air Register Box is manufactured in 2 versions, a factory installed tap, and field installed tap, which permits more specific placement of the tap during construction. The foam plastic insulation is used to increase energy efficiency in a difficult to insulate section of the HVAC system. The foam plastic insulation has a nominal thickness of 1¼ inches (31.7 mm) or 1⁹/₁₆ inches (39.7 mm), and a nominal density of 2.25 lbs/ft³ (36.0 kg/m³).

3.1 Surface Burning Characteristics: In accordance with LC1017, when tested in the as-built configuration in accordance with ASTM E84, the flame spread index was 25 or less and the smoke-developed index was 200 or less.

3.2 Hot-surface Performance: When the foam plastic insulation alone was subjected to testing in accordance with ASTM C411 at a temperature of 250°F (121°C.), the insulation did not flame, glow, smolder, or smoke.

3.3 R-Value: When tested in accordance with ASTM C518 at a nominal thickness of 1¼ inches (31.7 mm), the thermal resistance of the foam plastic insulation resulted in an R-value of 6. When tested at a nominal thickness of 1⁹/₁₆ inches (39.7 mm), the thermal resistance of the foam plastic insulation resulted in an R-value of 8.

4.0 INSTALLATION

Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box foam plastic internally insulated transition fittings shall be installed such that the total amount of foam plastic insulation from all installed fittings does not exceed 13 pounds per 1000 square feet of floor area.

When installed in accordance with this report, the foam plastic insulation installed in the insulated air register box is not required to be protected by either an ignition barrier or a thermal barrier.

Sterling Best Sealed Air Insulated Register Boxes with the factory installed tap (See Figure 1) shall not be modified. The Sterling Best Sealed Air Register Boxes manufactured without a factory installed tap shall have the tap installed according to the manufacturer's published instructions when locating and attaching the supplied field installed tap section to the factory manufactured box (See Figure 2).

5.0 SUBSTANTIATING DATA

Data in accordance with LC-1017, approved October 2008 (applicable portions), manufacturer's descriptive literature, and installation instructions. Test reports are from laboratories in compliance with ISO/IEC 17025.

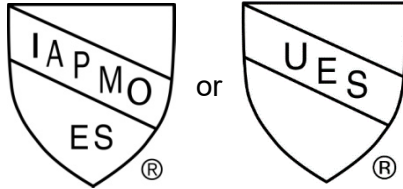
The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.





6.0 IDENTIFICATION

Each Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box shall be labeled with the name of the manufacturer (Sterling Custom Sheet Metal, Inc.), part description, the weight of foam plastic, R-Value, 13 pounds / 1000 sq. ft. limitation, and the IAPMO UES ER-448 number. Either one of the IAPMO UES Marks of Conformity may also be used as shown below.



IAPMO UES ER-448

For additional information about this evaluation report please visit www.uniform-es.org or email at info@uniform-es.org

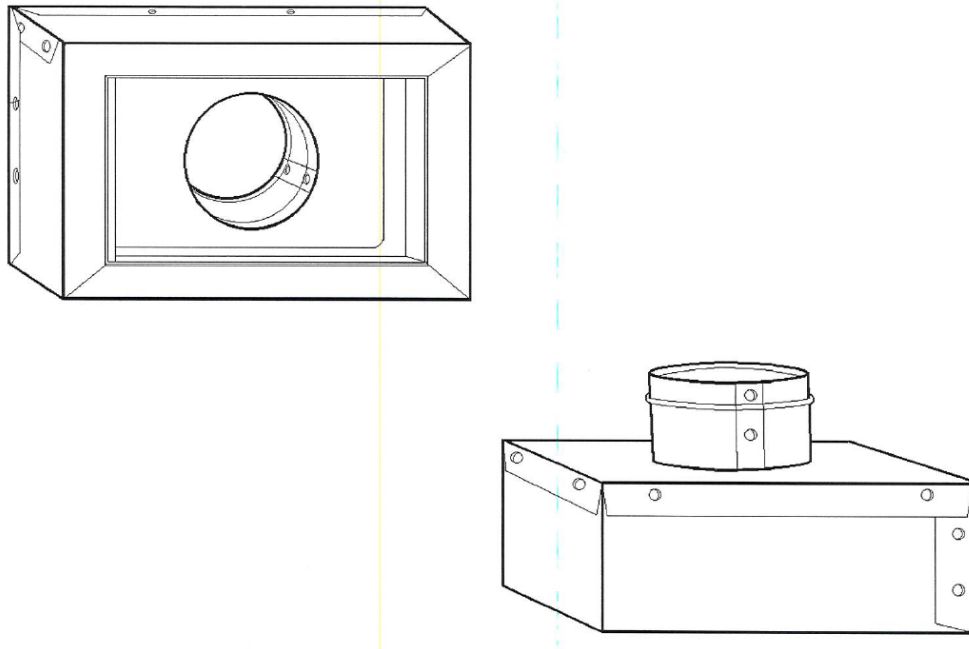


FIGURE 1 – Factory Installed Tap and Register Box

10x8x6 wide side
register box

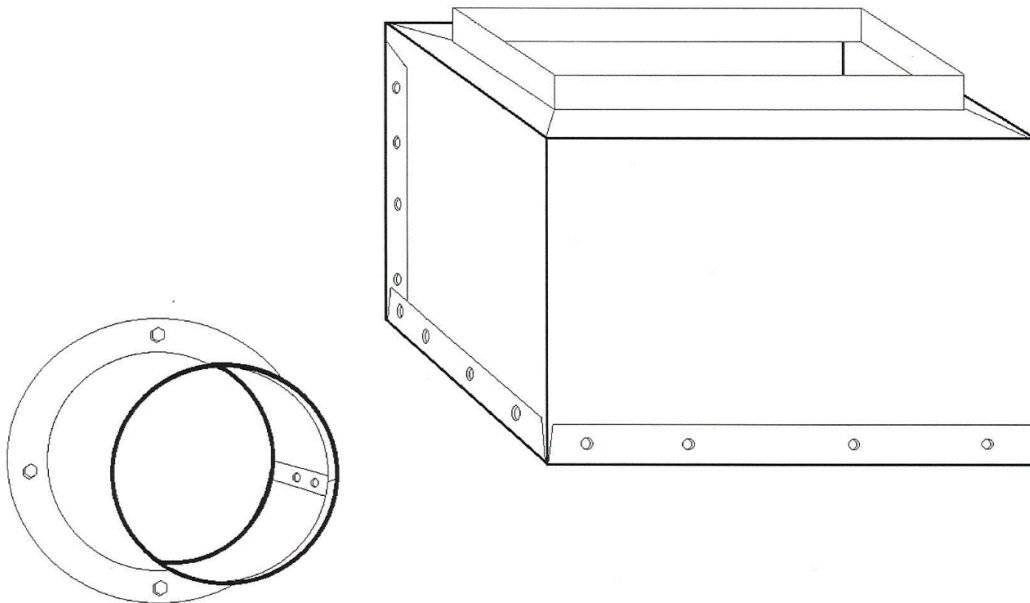


Figure 2 – Tap and Box for Field Installation



FLORIDA SUPPLEMENT

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1.0 RECOGNITION

Sterling Custom Sheet Metal, Inc.'s Sterling Best Sealed Insulated Air Register Box evaluated in IAPMO UES ER-448 is a satisfactory alternative to the following codes and regulations:

- 2023 Florida Building Code, Mechanical (FBC-Mechanical)
- 2023 Florida Building Code, Residential (FBC-Residential)

2.0 LIMITATIONS

Use of Sterling Best Sealed Insulated Air Register Box described in this report supplement is subject to the following limitations:

2.1 Use of Sterling Best Sealed Insulated Air Register Box shall comply with the provisions of the applicable codes, the manufacturer's published installation instructions, and this report. Where conflicts occur in these provisions, the most restrictive shall govern.

2.2 For products falling under Section 5(d) of Florida Rule 61G20-3.008, it has been verified that the report holder's quality assurance program is audited by a quality assurance entity, approved by the Florida Building Commission, to provide oversight and determine that the products are being manufactured as described in this evaluation report to establish continual product performance.

2.3 This supplement expires concurrently with ER-448.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org