

Dear Valued Customer,

We have all seen and read the claims by several regional walk-in manufacturers that use some type of Styrene/Styrofoam/Extruded Polystyrene, etc. as their insulation material. They all claim to meet the EISA (Energy Independence Security Act) requirements for coolers or 5" thick panels for freezers.

We recently acquired a 4" walk-in cooler from a regional walk-in manufacturer that uses extruded polystyrene (XPS). Panels were sent to the certified testing facility of a major styrene manufacturer for ASTM c-518 testing per the EISA requirements. Below are the test results:

*At 55° F Core Temperature the K-Factor is 0.1902. This equals an R-Value of 5.26/Inch, which requires a 4.75" thick cooler panel to be in compliance. ($R25 \div 5.26 = 4.75$)

* At 20°F Core Temperature the K-Factor is 0.1635. This equals an R-Value of 6.11/Inch, which requires a 5.24" thick freezer panel to be in compliance. ($R32 \div 6.11 = 5.24$)



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Here are two very important points taken from published data to consider:

>The R-8.1 for freezers and R-7.2 for coolers that is often referenced in Styrene panel manufacturer's collateral, is calculated immediately from freshly extruded styrene that is, before it goes into distribution or is warehoused. There could be a substantial time gap from "right out of the oven" to being glued into a panel during the time gap there is significant loss of insulating value or "K-factor drift" in the material...requiring the following 180-day calculations...

>The 180-day aged R-Value as published by the same manufacturer of Extruded Polystyrene is R-5.7 per inch for freezers and R-5.3 per inch for coolers. These values will require a 5.6" thick panel for freezers and a 4.7" thick panel for coolers to be compliant with EISA.

The above referenced freshly poured R-Value measurement is not in accord with the standard for measuring and enforcing EISA per AHRI Standard 1250P. This standard demands the measurements to be taken from an operating walk-in cooler or freezer, Therefore, XPS R-Values must be used from their 180 day aged reference.

Not only is urethane a superior insulation to XPS, it also offers these advantages over styrene laminated panels:

All of our electrical boxes are flush mounted versus surface mounted electrical boxes on styrene walk-ins. Flush mounted boxes not only provide cleaner look, but are much less prone to damage.

Foam-in place conduit versus surface mounted conduit for all electrical, again, a much cleaner look and less prone to damage from carts, etc.

Urethane panels offer much more design flexibility, whereas styrene panel sizes are limited to the available sizes of the board-stock.

Styrene is glued to the metal skins and could be prone to delaminating.

We do not rely on cleverly worded and misleading sales collateral to hide the real R-Value facts. Our testing results confirm EISA compliance with 3.5" thick panels for coolers and 4" thick panels for freezers.

However we go above and beyond by using 5" thick urethane panel with an R-value of 44 for our freezers.

Urethane is the proven insulation for high-quality, durable and EISA compliant walk-ins. There is good reason that the top grocery retailers, convenience store chains and restaurant chains all specify urethane foamed in place walk-ins!

Styrene and Expanded Styrene "R" great for coffee cups and picnic coolers!