



CUSTOMER BULLETIN 0409

ISO-C1 Polyisocyanurate Insulation

Improved K-Factor/R-Factor

PURPOSE

This Customer Bulletin is another in a series of white papers aimed at providing our clients, engineers, contractors, fabricators, and friends with objective information on competitive products. National attention on energy efficiency has focused on the key role insulation can play. Thermal insulating efficiency, short term and long term, is generally the most important factor considered when selecting insulation. Yet the lack of federal standards or guidelines makes it the issue more challenging than it should be.

This Bulletin provides declarative information on the thermal conductivity and resistivity of several densities of ISO-C1 polyisocyanurate insulation as measured by independent laboratories, with demonstrated compliance with ASTM C591 (the Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation).

SUMMARY OF RESULTS

Third-party independent testing has confirmed that Dyplast's ISO-C1 polyisocyanurate insulation superior thermal resistance when compared to competitive insulation. ISO-C1, at 2 lb/ft³ density, achieved a 6-month aged K-factor of 0.176 which equates to an aged R-factor of 5.7. Combined with ISO-C1/2.0's initial R-factor of 6.7, this product has thermal resistance on par with virtually any commercial insulation available; and approximately double that of fiberglass or mineral wool.

In fact, this R-factor is approximately double that of fiberglass or mineral wool [note that testing per ASTM is at 75F, even though the R-factor of ISO-C1 improves at lower temperatures];

2", 3" and 4" thick samples of ISO-C1/2.0 which were selected by RADCO personnel during an audit conducted at the Dyplast facility. The final 6 month aged K-factors are essentially independent of thickness, with aged values virtually identical. The good news does not end there. The results are actually better than Dyplast's previously listed values of 0.180 k-factor at 1" thickness. Averaging two samples at each thickness, the results were:

- 2.0" thick: K-factor of 0.1763 (core density = 2.09)
- 3.0" thick: K-factor of 0.1762 (core density = 2.01)
- 4.0" thick: K-factor of 0.1756 (core density = 2.02)



Recall also that ISO-C1/ 2.0 is the only two pound density polyisocyanurate bunstock foam that has both UL Listings and FM Approvals for flame spread and smoke development per ASTM E84. UL and FM are two of the most respected testing agencies in the world. No other manufacturer has passed Class 1 at either UL or FM. To maintain our certifications with the testing agencies, Dyplast Products is required to undergo on-site audits up to 4 times per year. **Furthermore, to our knowledge, no other manufacturer of polyisocyanurate bunstock has achieved a Class 1 ASTM E84 certification by independent laboratories.**

For information on Dyplast Products or additional technical data on this product, visit www.dyplastproducts.com.