QWIK GUIDE: ISO-CF AND ISO-CF/HT COMPOSITE FOAM CORE THERMAL CONDUCTIVITIES AT LOW TEMPERATURES

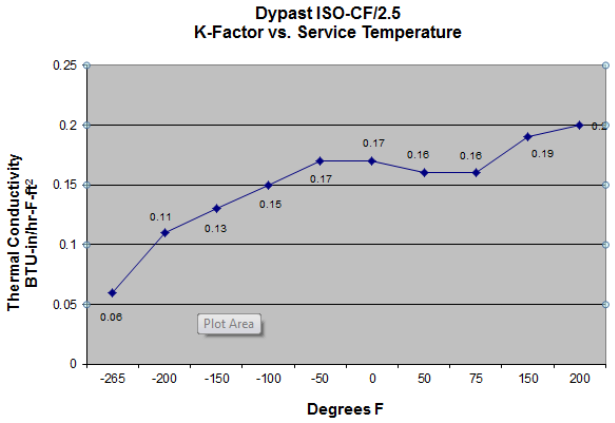
BACKGROUND:

A large proportion of composite applications require, or can greatly benefit from, substrates are highly thermally efficient -- in other words "*they insulate well*". Dyplast's ISO-CF line of products are polyisocyanurate, a modified/improved polyurethane, and one of the top insulators that still offers:

- Rigidity/stiffness/strength
- Light weight
- Thermal and dimensional stability
- Temperature range diversity
- Fabrication flexibility (size, dimension, shape, tolerance)
- Substrate material and adhesive compatibilities
- Excellent water/moisture resistance
- Cost efficiency

THERMAL CONDUCTIVITY

ASTM C591 is the *Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate*, and is arguably the key Standard used by insulation system end-users and engineer/specifiers to guide decision-making. ASTM C591 is a demanding Standard that requires measurement of physical properties, including thermal conductivities, across a range of temperatures. It is typically a prerequisite when insulation performance is of importance. Composite engineers interested in thermal performance can benefit greatly by demanding comparable information from alternative substrate suppliers. The latest version of the Standard, ASTM C591-13, imposes some additional requirements such as the measurement and publication of thermal conductivities (k-factors) measured across a temperature range from +200°F to -200°F. Dyplast has traditionally included this information so its clients have accurate information by which to make informed decisions in low-temperature applications. This Qwik Guide updates this information, and continues as demonstrable proof of Dyplast's policy of full disclosure and prompt compliance, and superior product physical properties in composite applications:



Notes:

1) K-factor[1] is thermal conductivity, essentially the inverse of thermal resistance, R-value); the lower the better!

2) For perspective, at 75°F, the k-factor of extruded and/or expanded polystyrene, Divinycell®[2] H at comparable densities, and frankly the vast majority of competitive composite substrates is 0.20 or much higher (worse).

Conclusion

ISO-CF and ISO-CF/HT have excellent strength-to-weight ratios and rigidity, and when combined with Dyplast's high-volume production and quick turn-around capabilities, our composite products are superior to the vast majority. When our superior thermal conductivity is considered, Dyplast's ISO-CF and ISO-CF/HT should be at the top of the selection!

[1] In some industries, k-factor is used in an entirely different context to represent *failure rates*.

[2] A registered trademark of Diab-Barracuda Ab CORPORATION SWEDEN Box 201 Laholm SWEDEN S-312 01