

Flamevex™ QISO®: Changing the Game in Mechanical Performance

Flamevex™ QISO® is a game-changing collaboration between **IDI Composites International** and **A&P Technology** combining the structural properties of a continuous braided fiber with the moldability of SMC.

Flamevex™ is a series of highly flame-resistant SMCs with high mechanical properties, offering the ability to mold large complex parts with dimensional stability from a lightweight solution.

QISO® quasi-isotropic fabric is balanced in a single layer of braid. Stronger, lighter and more efficient, QISO® enables significant cost savings and superior performance.

By co-molding Flamevex™ and QISO®, customers can optimize performance and cost.

IDI Composites and A&P Technology have been the market-leaders in bringing innovative solutions to automotive and aerospace applications. By joining forces on Flamevex™ QISO®, we are changing the materials game for EV battery enclosures.

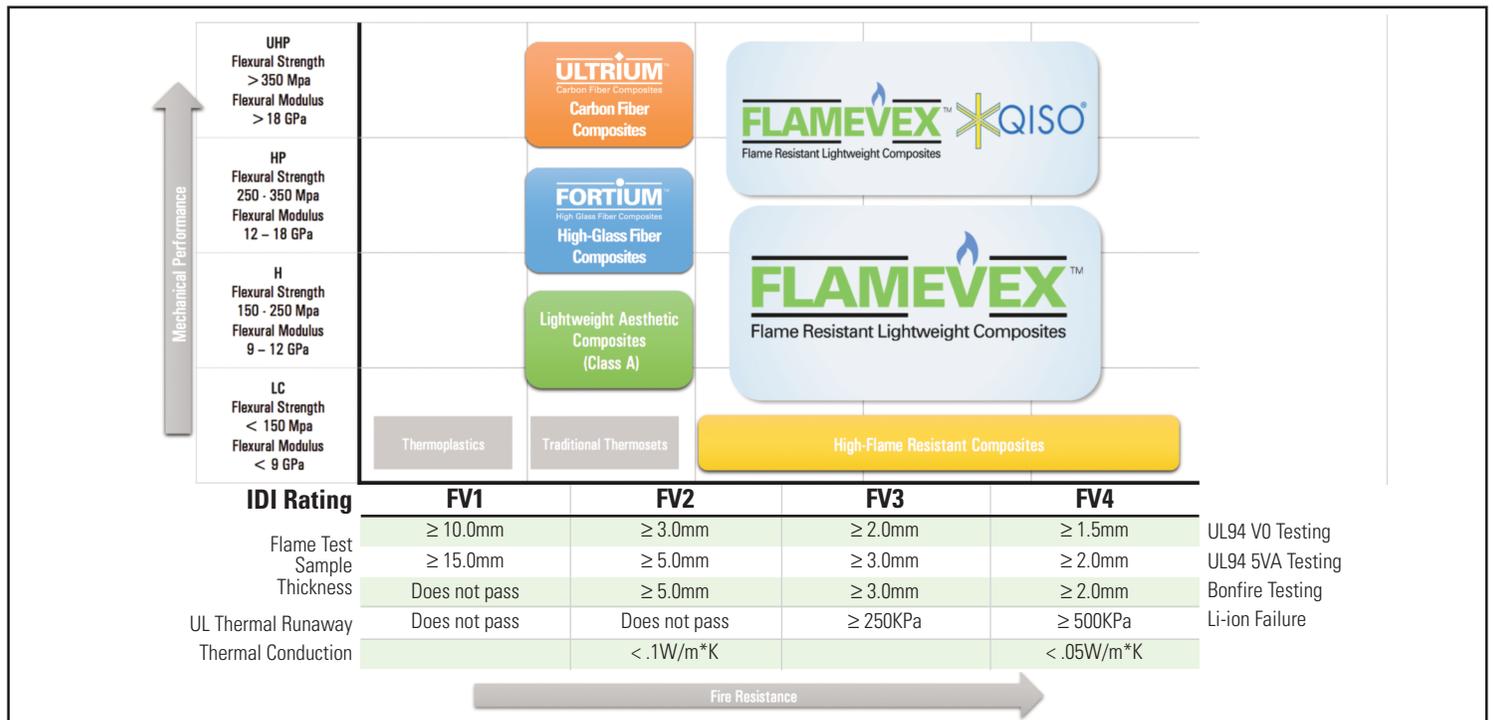
Flame Performance

With Flamevex™, IDI is advancing SMCs to previously unknown fire performance levels without compromising thickness, strength, or moldability. Flamevex™ materials offer a range of flame performance levels that can be tailored to an OEM's requirements, from UL 94 V0 and 5VA to the China Bonfire testing levels and now **thermal runaway** events!

Structural Strength & Stiffness

EV battery enclosures are increasingly integrated into the primary structure of the vehicle. This means designs must be capable of handling crash energy and other primary loads.

Furthermore, **thermal runaway** testing performed by IDI indicates tensile strength and stiffness are critical to containing these events. Because thermal runaway events involve short-term, but extreme pressure spikes, utilizing QISO® for strength and stiffness specifically where it is needed and Flamevex™ for overall flame resistance makes this solution ideal when combatting thermal runaway events.



Flamevex™ Performance Levels

IDI's Flamevex™ materials are available at a range of performance levels. FV3 materials take fire resistance a step above other thermoset composites and are capable of passing UL94 V0 at 2.0mm. For even higher performance, FV4 materials pass UL94 V0 at 1.5mm.

- High Flame Resistance & Performance
- Light Weighting
- High Structural Strength & Stiffness
- Dimensional Stability
- Electrical & Thermal Insulation
- Low Density & Low Shrink



Series: FLAMEVEX™
Product Description: SMC WITH ENHANCED FLAME PERFORMANCE
 Flame-resistant SMC with great mechanical performance designed for the challenges of high-density energy storage and protection in next-generation vehicles.

	FV330	FV449 <i>(In Development, Pre-Release Data)</i>
Flexural Strength Test Method: ISO 178*	261 MPa	335 MPa
Flexural Modulus Test Method: ISO 178*	12 GPa	13 GPa
Tensile Strength Test Method: ISO 527*	146 MPa	180 MPa
Tensile Modulus Test Method: ISO 527*	16 GPa	16 GPa
Impact Strength, Notched Izod Test Method: ISO 180	115 kJ/m ²	134 kJ/m ²
Specific Gravity Test Method: ISO 1183	1.89	1.71
Shrinkage Test Method: ASTM D955	0.069%	0.035%
Fiber Content Test Method: ASTM D3171	35%	52%
Flammability Test Method: UL-2596	≥ 250 KPa	--
Flammability Test Method: UL-94**	5VA 2.5mm	5VA 1.5mm
Appearance	Black	Black

* Data from cut specimens.

** Testing performed by IDI in accordance with UL-94 method.

The information on this sheet is a guide. The stated values reflect an average of several tests conducted on Composites International's (CI's) goods. These values were obtained under ideal conditions and may not be replicated in any particular test, part, or application. Because the values achieved in actual parts depend considerably on part design, molding conditions, and testing methods, no guarantee is made or implied regarding values to be obtained in any specific test, part, or application. CI makes no warranty or representation as to the suitability of any of its goods for use in any application. CI relies on customer to conduct its own tests and judge for itself the suitability of CI's goods.

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GLOBAL SOLUTIONS**



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Oldbury, UK

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