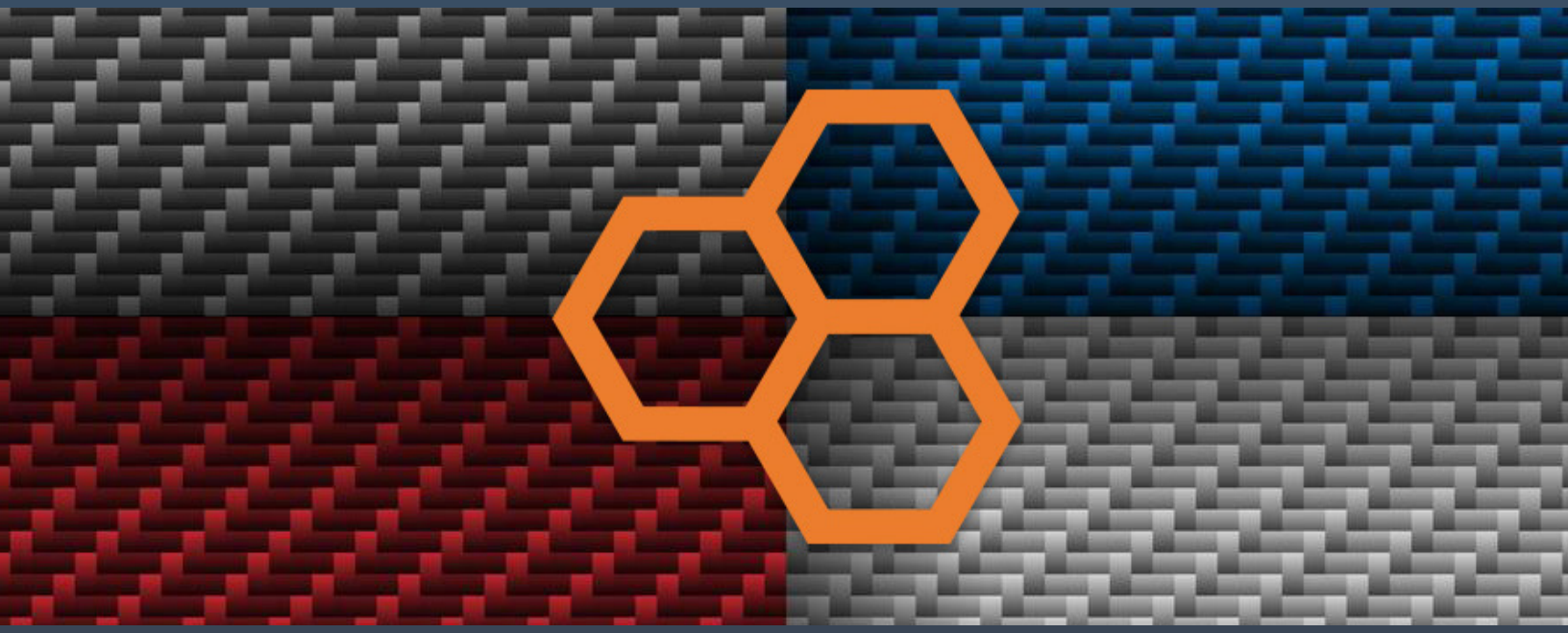
COMPOSITE ENVISIONS KNOWLEDGE HUB
PRACTICAL AND INSIGHTFUL COMPOSITES INFORMATION



CERTIFICATIONS OF COMPLIANCE

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Certifications of Compliance (Certs) are important throughout the composite industry for achieving the utmost quality assurance in the products presented to a customer. It is the manufacturers way of telling their customer that a product is 100% what it states based upon highly standardized and scrutinized testing method applications, manufacturing, or fabrication processes. In the aerospace industry for example, certifications of compliance are of utmost importance before a fabric, resin, prepreg, adhesive, core, or any other product goes onto any process or part of what may later go onto a flying aircraft. Certs are not just limited to the aerospace and composite industry. But with many composite and aerospace certs, a deep, microscopic level of traceability and fulfillment is met with what looks to be a simple certification of compliance, as it often a single page that accompanies a material or product. This is important when realizing about how much we trust a product each time we step in a plane, or even fasten a seatbelt. Having the assurance of such certifications go a long way with keeping the utmost integrity in all composite standards.

Certifications tell the customer or buyer of the material that their fiber, fabric, resin, or prepreg will perform in a manner it says it will and was made accordingly. This has huge implications on how parts are designed, and materials are chosen for a given laminate part. When a certification of compliance is involved, it goes way past achieving a surface finish or simply designing a part. For example, if a Carbon Fiber part was marketed and purchased as a true carbon fiber part, the manufacturer or fabricator could provide a certificate of conformance stating that it is in fact carbon fiber and not just a skinned piece of plastic or only have a top layer carbon fiber over fiberglass.

CERT VS TDS

Can someone just get the same numbers from a technical data sheet and not need a cert? For instance, for carbon fibers, one important characteristic is tensile strength. On a technical data sheet, it will have the results measured in a unit of pressure and the testing method associated with it. Design your part to the given needed parameters and boom, done. (By the way, it is rarely that easy) But it's the same right?

Not exactly. There is a manufacturing process that goes along to make fibers, tows, fabrics, and prepregs. Certifications of compliance may assure that the specific "lot" or "run" of that production material that may be used in a product that is complaint to the same standard that corresponds to the data in the technical data sheet. The cert says that this lot of material that someone may use conforms to an approved manufacturing processes and / or has been subject to testing methods as listed and passes to that generated specification, and specific testing method, whatever it may be. When a company provides this document, they are legally binding themselves to their work.

Why it costs extra? There is a value associated with the work, time, and resources that go into testing various lots of composite parts. Still, those resources are not free. It carries the same principal as with aerospace grade materials. Testing equipment for a full lab setup can

cost in the figure of millions with the degree of specific testing needs that may need to be complete for certain fabrics, fibers, yarns, prepregs, etc. The testing equipment is also tested for accuracy and proper functionality, and it is extensive! Proper documentation practices are also highly scrutinized as test records and pertinent manufacturing data must be kept in case they are later needed. For these reasons, there is a cost associated with providing the needed information such as certifications of compliance. (And that is just to conform the material.) This doesn't start to include the compliance portion of a manufacturers process which may be in the order of millions of dollars to provide an approved certification. Needless to say, the simple cert may not be so simple at all. It is highly dependent on the customers need and what the material will be used for.

Do you always need certifications of compliance? Not typically for DIY projects or something like car modifications as a hood. However, it totally depends on the requirements for the part and how the product will be applied or used down the road, like aerospace grade materials, you often get what you pay for. Certs provide assurance that resources are well spent.

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