

# The Art And Science Of Thermoset Composites



## Composite Truck Box



**FORTIUM**<sup>TM</sup>  
High Glass Fiber Composites



**iDI** Composites<sup>®</sup>  
International

**Ideas For Meaningful Results.**

[idicomposites.com](http://idicomposites.com)

## Composite Truck Box

### inquiry

Automotive designers and engineers are always looking for innovative solutions for product improvement, especially as it relates to strength, reducing weight, consolidating parts and cost savings. The truck box is a main selling feature of a pick-up and therefore must meet strict performance standards. This highly visible part needs to be extremely durable to support heavy loads and withstand corrosive substances, all while maintaining a high grade appearance, despite consistent use and relentless exposure to UV and other environmental elements. As it is one of the larger parts in a truck's design, it presents a significant opportunity to reduce weight, add durability and enhance the truck's appearance.



### idea

Traditionally, truck boxes have been made from steel or aluminum because of their high load bearing capabilities. However, both materials scratch, dent, and corrode. With metals, maintaining a high grade appearance may require the costly installation of a secondary bed liner to absorb heavy loads and mitigate environmental factors. Composite materials are the replacement solution to traditional metals. With multiple dynamic performance features, composites are becoming the material of choice for innovative designers and engineers.



### innovation

Using IDI's Fortium™ material (specifically F250-UV) results in a truck box that is inherently resistant to environmental elements. It is UV stable, rust and dent resistant, strong, and reduces weight, all while retaining a high grade appearance without the need of a bed liner. Depending on the design, composite materials can allow for the production of the truck box composed of one continuous piece or assembled from multiple pieces, resulting in overall part consolidation. The strength, performance and flexibility offered by IDI's Fortium™ composites make them an excellent material choice for innovative customers seeking to go beyond the value limitations of conventional materials.

## Fortium™ Scratch Black Technology

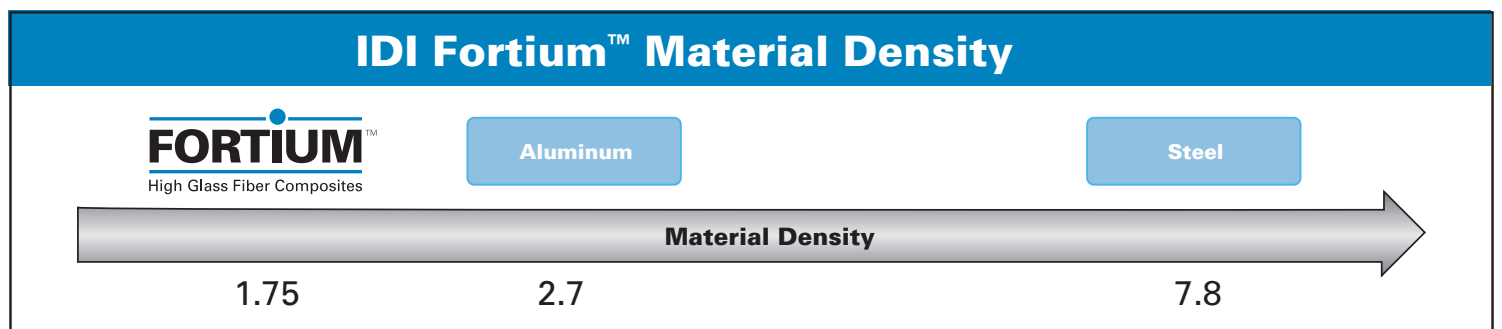
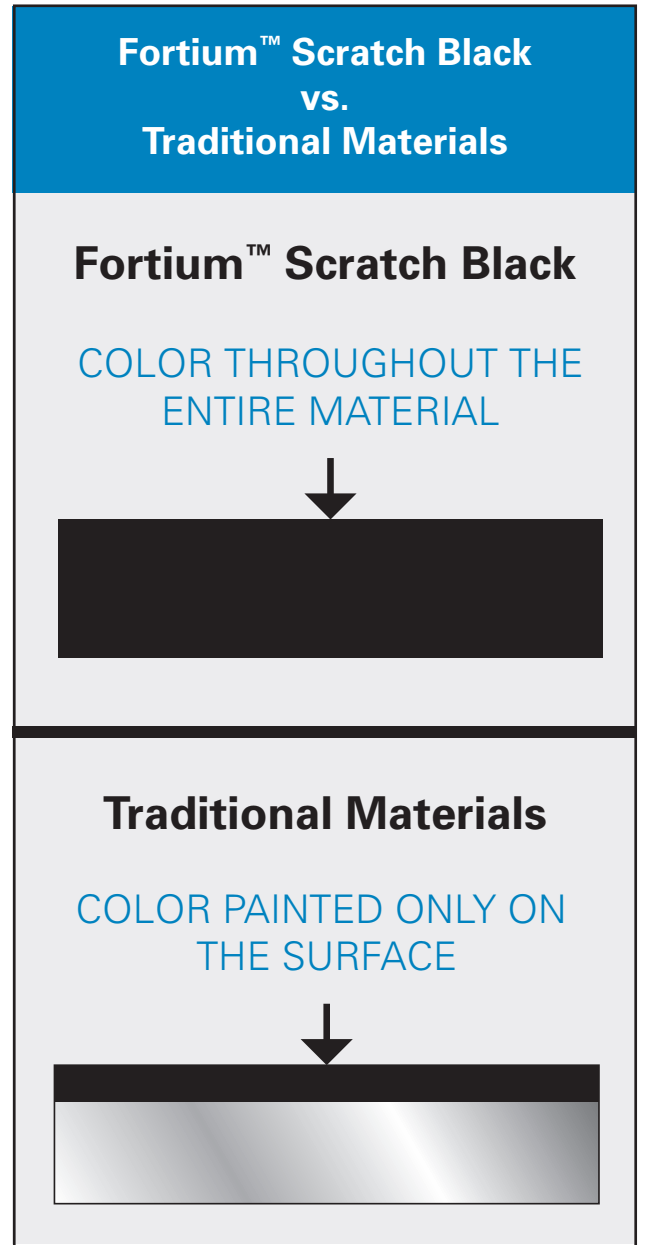
Fortium™ is made with our Scratch Black technology. With Scratch Black, the color pigmentation is not just on the surface, but permeates the entire part. With traditional materials like aluminum and steel, this is not possible. The difference is clear in a product like a truck box which receives heavy use. As payloads rub against a traditional part, the resultant scratches are very apparent as they reveal the metal beneath. Because Fortium™ Scratch Black permeates the part, these scratches are much harder to detect resulting in an aesthetic part that maintains its beauty over time, even under the harshest conditions.

## Standing Up To The Sun

Fortium™ is not just incredibly strong, but it is also able to weather the elements. Fortium™ F250-UV displays a very high UV stability based on numerous test methods and as a thermoset enjoys a natural resistance to corrosion and weather effects.

## Lower Density Than Traditional Materials

Because of its high glass fiber content, Fortium™ offers significant strength for such a low density material, while also imparting a very durable impact resistance to parts that are made from it. All of these features combine to make Fortium™ a clear choice for a strong, lightweight and durable part with long lasting aesthetic properties.



The need to extend the range of electric and new energy vehicles means more and more need for lightweight solutions. At 1.75 density, Fortium™ materials are far lighter than metal alternatives.

- High strength
- Impact resistant
- Highly moldable for complex geometries
- Out-performs aluminum and steel on a performance to weight basis

**Fortium™ F250-UV developed for North America, other formulations available globally.**

**Series:** FORTIUM™  
**Product Description:** TOUGH | WEATHERABLE | MOLDED-IN BLACK SMC  
 Applications include hard-wearing, textured, weather-exposed, semi-structural applications such as truckbeds, underbodies, treadplates, and tough enclosures.

	F250-UV
Glass Fiber Content	48%
Flexural Strength Test Method: ASTM D790	235 MPa
Flexural Modulus Test Method: ASTM D790	10 GPa
Tensile Strength Test Method: ASTM D638	140 MPa
Tensile Modulus Test Method: ASTM D638	13 GPa
Impact Strength, UnNotched Izod Test Method: ASTM D256	115 kJ/m <sup>2</sup>
Moisture Absorption Test Method: ASTM D570	0.6 %
Specific Gravity Test Method: ASTM D792	1.75
Shrinkage Test Method: ASTM D955	-0.034 %
Gel Time Test Method: DSC	63 s
Cure Time Test Method: DSC	107 s
UV Stability Test Method: Various Xenon, AZ, FL...	Very High
Part-Level Impact, t=3mm Test Method: Steel ball drop impact, not cracked through.	>30J

**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.

8/2022



**GLOBAL LOCATIONS  
GLOBAL SOLUTIONS**



[idicomposites.com](http://idicomposites.com)

United States  
Noblesville, Indiana

Europe  
Vineuil, France

United Kingdom  
Oldbury, UK

Asia/Pacific  
Shanghai, China

Caribbean  
Aguirre, Puerto Rico

Mexico  
Mexico City, Mexico