

## TOUGHER AND SAFER THERMOPLASTIC COMPOSITES

Whether it be for safety, medical, automotive, marine or telecom, our new line of ultra-tough thermoplastic composites can prove to be better than steel.

Our composite materials can give the benefits of steel but are:

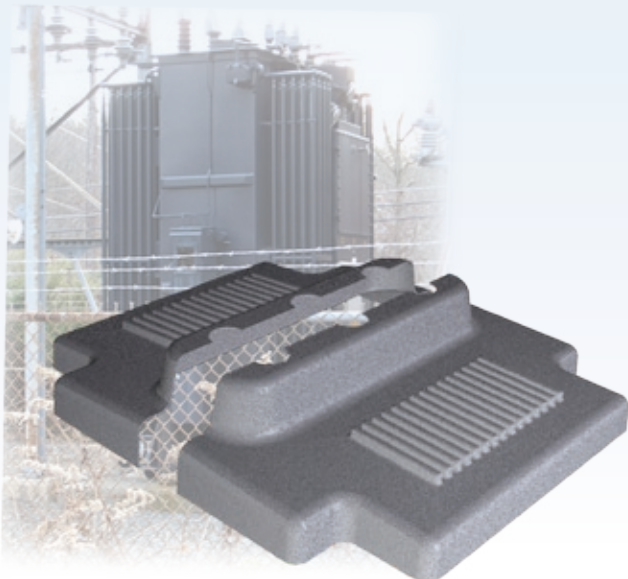
- Stronger and more flexible than sheet steel
- Moldable to customer specific geometry
- Parts consolidation, easier to work with
- Vandal Resistant
- Lighter than steel assemblies
- Non-Corrosive, weatherable
- Developed to not need painting or plating
- Available with few size limitations
- Less expensive than metal weldments
- Easier to transport and assemble
- Recyclable materials
- More Ductile than thermoset products
- Excellent fire resistance
- Very low smoke and toxicity

Potential applications range from boat, automobile and motorcycle components to outdoor enclosures and barriers for protection against explosions and the effects of blasts. Besides conventional applications, Ideal Jacobs is exploring ways to integrate communication devices, sensors, smart circuits even nano sensors into the thermoplastic composites. Ideal Jacobs' technologies are not simply emerging, they exist and they can all be made recyclable!

Areas of use include:

### Outdoor Equipment Enclosures

Weatherable and structural composites enable forming of enclosures designed to protect critical assets such as communications gear, control circuits and infrastructure equipment. The materials Ideal Jacobs uses are non-conductive, non-corrosive and impact and vandal resistant.



### Hardened Radomes

The low dielectric properties of both the polymer and reinforcement fabrics enable Ideal Jacobs to build frequency transparent covers and protective shields. Applications range from a variety of communications gear, satellite dishes, antennas and sensors.

### Boiler and High-Pressure Vessel Protection

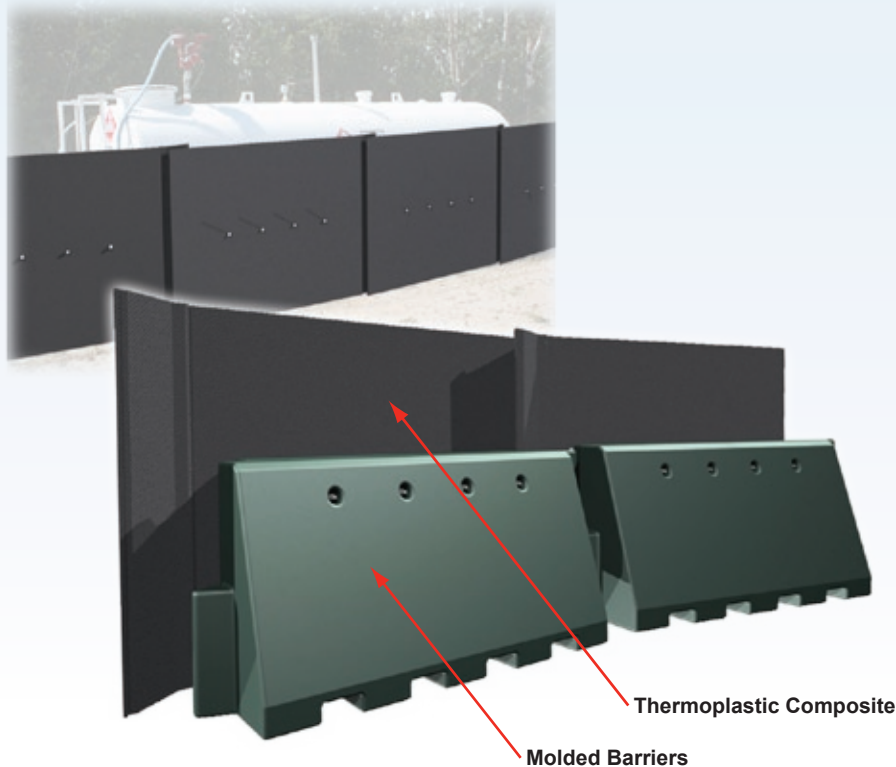
Ideal Jacobs combines high-strength composites with energy absorbing materials (EAMs) to create structures or enclosures that provides protection from high pressure vessel failure and flying debris. The rigid composites compress EAMs during an event to erode the kinetic energy of shrapnel and flying debris.



# THERMOPLASTIC COMPOSITE APPLICATIONS

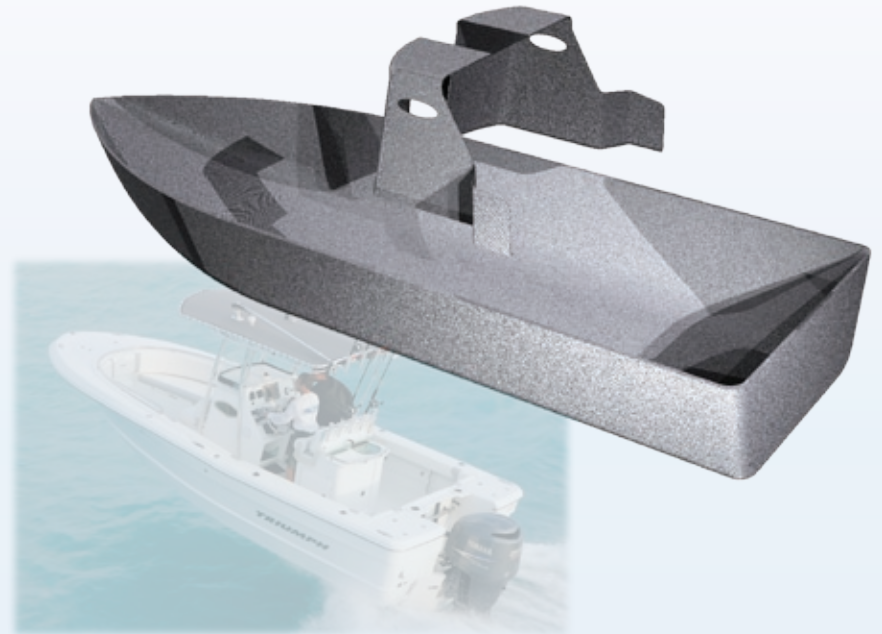
## Barrier Protection

Thermoplastic composite barriers offer adjustable positioning with up to 30 degrees of full protection from blasts, firearms and impacts. They can be mounted to molded barriers and are stackable for simplified shipment and transportation. Molded barriers can also be filled with any material (sand, water, stone, etc.) to weigh down barriers for temporary or permanent placement.



## Marine Applications

Thermoplastics offer an alternative to epoxy fiberglass parts. The thermoplastic-based composites do not chip or crack like the harder, more brittle fiberglass predecessors. Reinforced thermoplastic composites can be formed into hull liners, pilot houses, engine covers and a variety of ballistic shield applications.



For more information about our Thermoplastic Composite material, please contact us at one of our locations below:

**Ideal Jacobs World Headquarters**  
515 Valley Street • Maplewood, NJ 07040  
United States of America  
Tel: (877) 873-4332 • Fax: (973) 275-5161  
Inquiries: [info@idealjacobs.com](mailto:info@idealjacobs.com)

**Ideal Jacobs Asian Headquarters**  
Floor 4, Block D • Gangxia Industry Park  
319 East Hubin Road • Xiamen, China • 361012  
Tel: +86 592 506-4000 • Fax: +86 592 507-4000  
Inquiries: [infoxm@idealjacobs.com.cn](mailto:infoxm@idealjacobs.com.cn)

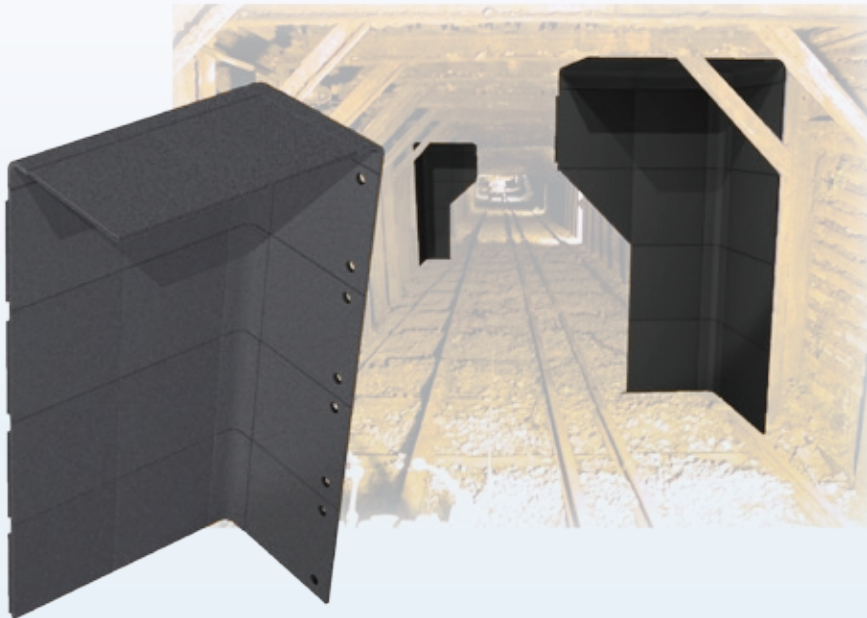
**Mexican Distribution Center**  
Privada Sie rra de Quila 2869 Int. 401  
Rinconada La Calma  
Zapopan, Jalisco, Mexico • CP 45080  
Office / Fax: +52 33 3634-4694

**Netherlands Distribution Center**  
Hondsdiijk 3  
Koudekerk aan den Rijn 2396 HG  
The Netherlands  
Tel: +31 71 341-6555 • Fax: +31 71 341-6558

## ADDITIONAL THERMOPLASTIC COMPOSITE APPLICATIONS

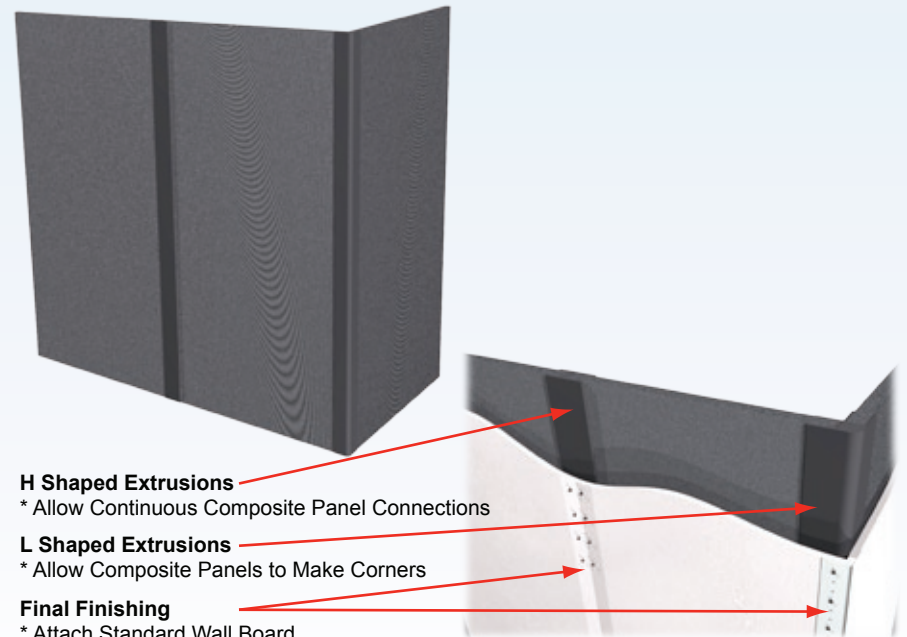
### Mine Safety Applications

Structural panels including curved, angled and corrugated shapes which offer personnel a safer area in case of emergencies.



### Architectural Applications

Composite panels can be molded thin to serve as added shielding for existing building structures or thicker to be free standing. The molded product is "ideal" for offering building occupants protection against threats such as flying debris or the effects of blasts. Thicker panels enable construction of guard shacks, check points and border stations.



#### H Shaped Extrusions

- \* Allow Continuous Composite Panel Connections

#### L Shaped Extrusions

- \* Allow Composite Panels to Make Corners

#### Final Finishing

- \* Attach Standard Wall Board

- \* Applied with Screws

- \* Use standard corner bead to finish edge



## Protective Clothing

Molded inserts can be strategically placed in athletic apparel and protective race gear to shield against impact, falls or accidents. Inserts can be molded rigid or from elastomers to protect the torso, specific bones or joints and even protect the skin from abrasion.



## Shipping Containers

High impact resistant collapsible containers can be assembled for transport and then deconstructed for storage. Impact liners can be molded for existing containers.

## Vehicle Components and Impact Protection

Ideal Jacobs' thermoplastic composites offer a wide range of custom vehicle components and impact protection solutions. Our material provides high strength impact protection and can be formed into floor pans, shields, strength members or passenger cabin protection beams. Structural platforms or glass mats can be separated from plastic resin at the end of product life for recyclability.



## Motorcycle Accessories

Reinforced thermoplastic composites can be formed into a number of components such as fairings, skid plates, engine shields and cargo carriers.



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