Transportation Panels ARMORTUF® | KEMLITE®

TRAVEL TOUGH with frp panels

frp Fiberglass Reinforced Panels
sanitary & cleanable

All Crane Composites products are in full compliance with USDA/FSIS requirements and fully support the new Food and Safety Modernization Act (FSMA).

simple & cost-effective

Thermoset panels provide a non-porous surface which makes it impossible for dirt to become embedded in the surface of the panel. Plus, they’re easy on your budget and designed to last for years to come.

dependable performance

Count on Crane FRP panels for extremely strong durable panels that resists most stains and chemicals. FRP does not support the growth of mold, mildew, or bacteria.
Crane liners have been designed to allow for full compliance with FSMA/USDA/FSIS requirements for non-food contacting applications for years and support the new Food Safety and Modernization Act.

Our products have been used for over 65 years and are used today in food processing plants, restaurants, and in transportation truck bodies and trailers, because they are a cost effective way to create a clean, durable, and sanitary surface.
DRY/REFRIGERATED TRAILERS

- Reefer Roof®
- Translucent Roof
- High-Impact Interior Liner
- Aerodynamic Side Skirt
- Subpan
- Scuff Plate
- Ceiling Liner

benefits of **frp**

- Durable
- Mold Resistant
- Light Weight
- Moisture Resistant
DRY/REFRIGERATED TRUCK BODIES

Reefer Roof®

Translucent Roof

High-Impact Interior Liner

Exterior Sidewall Liner

Subpan

Scuff Plate

Ceiling Liner

best life cycle cost

Easy to Clean  Easy to Install  High Weight to Strength Ratio  Impact Resistant
Liners superior liner technology

Liner market leaders

Crane Composites was first to introduce a composite panel into the truck trailer market. Our panels were the first Fiberglass Reinforced Plastic (frp) composite liners and full seamless lightweight liners in the market.
There are many benefits of Crane Composites’ interior liners; they resist damage and look better longer. Our liners are engineered with a matrix of glass reinforcement and other multiple reinforcement options including long chopped glass partnered with a durable polyester resin system. With a low vapor transmission rate and abrasion resistant surfaces, Crane Composites’ liner options display a consistent white appearance that is easy to clean and maintain.

BENEFITS OF USING CRANE THERMOSET OVER THERMOPLASTIC

thermoset
Many benefits come with using a thermoset liner. Thermoset liners have hard, dense, resin rich surfaces that are easily cleaned and abrasion resistant. With no voids in the surface of our liners, stains do not become embedded or impossible to remove.

thermoplastic
In a thermoplastic liner, stains are difficult to remove due to voids forming on the surface. The surface of a thermoplastic liner is porous which makes it easy for dirt and moisture to become trapped.
Since 1980, Crane Composites has provided the market with a superior translucent roof solution that has addressed the need for a well-lit, lightweight vehicle that allows for a safer loading and unloading of cargo environment.
Kemlite translucent roofs provide enough light to identity products and easy read labels and also provides a safer environment for loading and unloading cargo. It is an efficient way to light a trailer, truck body, or delivery van without spending money to install lighting.

**translucent roof features + benefits**

Crane Composites’ translucent roofs help trailers utilize natural light all while having significant weight savings. With the utilization of natural light, there is no need for installing lights on the interior of a trailer. Our translucent roofs provide enough light to cultivate a safe environment for the loading and unloading of cargo as well as the visibility to read cargo labels.

**SOLUTIONS FOR DRY VANS TRAILERS**

**XLR**
Our premium product that contains engineered fabric on the backside of enhanced tear resistance and a unique resin formulation for enhanced weatherability. When comparing our XLR roof to a standard aluminum roof for a 53’ trailer, there is an average weight savings of about 15% or 34lbs. | 0.50lbs/ft².

**TI**
Woven fiberglass reinforcement built into roadside and curbside edges for additional rivet pull out strength | 0.47lbs/ft².

**SOLUTIONS FOR TRUCK BODIES + DELIVERY VANS**

**TRW**
Heavy duty translucent roof designed for truck bodies. It is a one-piece high-strength FRP roof with a full width woven roving mat | 0.39lbs/ft².

**RISC Cool Roof**
Provides low light transmission supporting cooler vehicle temperatures for delivery vehicles. A one-piece FRP roof with woven reinforcement built into a roadside and curb side edges for additional | 0.46lbs/ft².

**TI**
Woven fiberglass reinforcement designed to improve visibility for safer loading and unloading of cargo | 0.37lbs/ft².

for the latest news follow us on: [facebook.com/cranecomposites](http://facebook.com/cranecomposites)
For a roof solution specifically designed and formulated to enhance the thermal efficiencies of your trailer or truck body, one product rises above other materials in the market: Kemlite Reefer Roof. Kemlite Reefer Roof is engineered with a unique resin formulation to reflect heat-generating solar radiation.
Our Kemlite Reefer Roof’s ability to reflect most solar radiation improves the ability of your refrigerated trailer to maintain its desired interior temperature. As such, our Kemlite Reefer Roof option creates a more thermally efficient refrigerated trailer which in turn assists in reducing the operating costs of your trailers’ cooling units.

**reefer roof features + benefits**

**REEFER ROOF AS A SYSTEM**

- Improves ability to maintain vehicle’s interior temperature
  - Thermal break; conducts 1,000x less heat than aluminum roof panels
  - Durable, impact resistant roof panel and easy to repair

- Reflects up to 2x the solar radiation when compared to an oxidized aluminum roof.

order free samples at: FRPSamples.com
For an aerodynamic side skirt solution with superior durability, one product rises above other materials in the market: Crane Composites fiberglass reinforced plastic (FRP) Aerodynamic Side Skirt. The Crane Composite Aerodynamic Side Skirt is designed to meet fleet’s fuel efficiency requirements and enhance the productivity of a trailer while also lowering the total cost of ownership.
When comparing aerodynamic side skirt material, weight, flexibility, and panel composition are three key attributes that determine the performance over time of side skirts. Made with a woven fiberglass and polyester resin matrix, the Crane Aerodynamic Side Skirt raises the bar and provides fleets with a skirt that has a high strength-to-weight ratio with enhanced flexibility.

side skirts features + benefits

Crane Aerodynamic Side Skirts utilize both a fully woven high strength glass reinforcement, along with long strand chopped glass reinforcement, to achieve a flexible and durable panel that is designed to take abuse. The thickness of our skirt, 0.135", was derived to reduce fluttering of the panel, which can create drag. The skirts are enhanced with a unique resin system and UV inhibitors, which resist scratching and create a barrier between the environment and the glass reinforcement, providing longer life in high-abuse applications.

CRANE SIDE SKIRT PRODUCT FEATURES

RUGGED DESIGN
- Bending up to 90° both ways
- High flexural strength
- Crane’s thermoset plastic and fully woven glass reinforcement allows for better fastener retention

LIGHTWEIGHT
Under 1lb per square foot

IMPROVE FUEL EFFICIENCY
- Lightweight, robust design
- Panels designed to be flexible, yet stiff enough to resist fluttering to help maximize fuel efficiency

CUSTOMIZABLE
Resin system is decal/logo friendly and ready to build your brand

for the latest product information, visit: crane-composites.com/tr
Scuff Plate Panels protecting your sidewalls

Kemlite Scuff Plate panels are a high-impact, durable, lightweight product that are more cleanable, more stain resistant, and more abrasion resistant than competitive plastic materials and alternative solutions such as wood and aluminum.

Kemlite Scuff Plate is specifically designed and formulated for use as a scuff plate to protect your sidewalls from forklift and pallet damage in high abuse or impact areas within your vehicle.

**benefit** Crane is Designed to Last

- Minimizes damage caused by forklifts, pallets, crates, and cargo
- Protects against dents and tears
- Equipped with unique Surfaseal Technology for unmatched cleanability and stain resistance
- Superior performance at a fraction of the weight and thickness of alternative materials for more

Kemlite scuff plate is designed to take the abuse that is inevitable from loading and unloading your trailers and truck bodies. Scuff is the first barrier, the sacrificial layer...for that reason, we know it needs to last. Kemlite scuff plate will act as that barrier as evidenced by the image below.
Manufacturers and dealers choose Crane Composites Fiberglass Exterior panels over the competition, because its smooth finish looks better, cleans easier, and lasts longer!

**CRANE EXTERIOR PRODUCT FEATURES**

**NOBLE SELECT**
An all-composite, wood-free exterior panel with superior surface and weathering performance. Crane’s premium solution is Noble Select is designed for laminated. Decal and wrap friendly.

**CRANE GOLD**
Crane Gold panels set the GOLD standard with a premium, high-gloss finish. It delivers the smoothest finish with thick gel-coat for a fiber free result. Crane Gold is engineered with a superior resin system to provide best-in-class thermal stability.

**FILON MAX**
Our newest Filon sidewall product enhanced with a reduced fiber-show finish. Take your vehicle to the MAX! Our FILON MAX collable exterior sidewall panels are specially formulated to deliver maximum weathering capabilities and engineered with a high-gloss finish that is especially illuminating in natural light.
Kemply® Laminated Solutions used to suit your vehicle needs

Wood offers a panel construction that exhibits superior structural strength and rigidity. Wood cores are available in different varieties (Plywood, OSB, etc) and thicknesses depending on the performance required.

We can laminate to foam, honeycomb and other materials. We can also laminate any Crane Composites material to either or both sides of the substrate.

**KEMPLY with plywood (BCX)**

Plywood (BCX) with 0.05" fiberglass panel laminated to one side of substrate.

**available thicknesses**

0.375" | 9.5 mm  
0.5" | 12.7 mm  
0.625" | 19.1 mm

**KEMPLY with oriented strand board (OSB)**

Oriented Strand Board (OSB) with 0.05" fiberglass panel laminated to one side of substrate.

**available thicknesses**

0.375" | 9.5 mm  
0.5" | 12.7 mm  
0.625" | 19.1 mm

cost effective & high performance

Crane works with laminating partners to create custom solutions engineered to suit your customer's specifications and application requirements.
## Repair Kits designed for quick, durable repairs

<table>
<thead>
<tr>
<th>Repair Kits</th>
<th>REPAIR DESCRIPTIONS</th>
<th>KIT COMPONENTS</th>
<th>FEATURES</th>
</tr>
</thead>
</table>
| **Peel + Stick Repair Patch** | The Peel and Stick patch is specifically designed as a quick and easy repair method for on-site repairs with few steps and minimal equipment, time, and labor needed for repairing damage to Crane Composites’ interior and exterior liners.                                                                                                                   | The kit includes 12"x12" frp squares                                                                                                                                                                                                                                                                                                              | • Minimal Equipment  
• Quick, On-Site Repair  
• Self-Adhering Patch  
• Minimal Labor                                                                                                                                                                                                 |
| **Liner Repair Kit**         | The Liner Repair Kit is specifically designed to repair damage to Crane Composites’ liner panels. The Liner Repair Kit can be used for small and large tears and punctures.                                                                                                               | The kit includes Crane’s unique resin mix, a chopped glass mat, film, and catalyst.                                                                                                                                                                                                                                                                                                                                 | • Minimal Equipment  
• Film and Fiberglass Included For Your Needs  
• Chemicals Must Be Mixed Using Kit Supplies                                                                                                                                                                                                                                       |
| **SunPatch Roof Repair Kit** | The SunPatch Fiberglass Repair Kit is specifically designed to repair damage to Crane Composites’ roof panels. The SunPatch is intended for small tears and punctures. The SunPatch cures in 5-10 minutes after exposure to UV rays.                                                                                       | The patch is a resin impregnated fiberglass mat that is ready for application. No mixing is required.                                                                                                                                                                                                                                                                                                        | • Minimal Equipment  
• Quick, On-Site Repair  
• Cures with UV Light  
• Minimal Labor                                                                                                                                                                                                                                                                   |
| **Translucent Roof Repair Kit** | The Translucent Repair Kit is specifically designed for repairing damage to Crane Composites’ roof panels. The Translucent Roof Repair Kit can be used for small tears, and large tears or gouges.                                                                                      | The kit includes Crane’s unique resin mix, a chopped glass mat, film, and catalyst.                                                                                                                                                                                                                                                                                                                                 | • Durable Repair  
• Film and Fiberglass Included For Your Needs  
• Chemicals Must Be Mixed Using Kit Supplies                                                                                                                                                                                                                                           |
### SIDEWALL + CEILING LINERS

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Product Code</th>
<th>Strength</th>
<th>Thickness</th>
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</thead>
<tbody>
<tr>
<td>ArmorTuf High Impact Liner</td>
<td>EARM*</td>
<td>⬤ ⬤</td>
<td>0.07”</td>
</tr>
<tr>
<td>ArmorTuf Heavy-Duty Liner</td>
<td>EATR*</td>
<td>⬤ ⬤</td>
<td>0.085”</td>
</tr>
<tr>
<td>ArmorTuf Lightweight Liner</td>
<td>ARMI*</td>
<td>⬤</td>
<td>0.065”</td>
</tr>
<tr>
<td>ArmorTuf High-Impact Liner</td>
<td>ARMT*</td>
<td>⬤ ⬤</td>
<td>0.075”</td>
</tr>
<tr>
<td>ArmorTuf-NXT High Impact Liner</td>
<td>ANXT</td>
<td>⬤</td>
<td>0.075”</td>
</tr>
<tr>
<td>ArmorTuf Lightweight Liner</td>
<td>ERMI</td>
<td>⬤</td>
<td>0.06”</td>
</tr>
<tr>
<td>Kemlite Lightweight Liner</td>
<td>LTR*</td>
<td>⬤</td>
<td>0.06”</td>
</tr>
<tr>
<td>Kemlite Lightweight Tapered Liner</td>
<td>LTR*</td>
<td>⬤</td>
<td>0.09”</td>
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<tr>
<td>Kemlite High-Strength Liner</td>
<td>LHS*</td>
<td>⬤</td>
<td>0.06”</td>
</tr>
<tr>
<td>Kemlite Lightweight Liner</td>
<td>LTR*</td>
<td>⬤</td>
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### SUBPANS

<table>
<thead>
<tr>
<th>Product Description</th>
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<tbody>
<tr>
<td>Kemlite Lightweight Subpan</td>
<td>LTR-SP*</td>
<td>⬤</td>
<td>0.06”</td>
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</table>

### TRANSLUCENT ROOFS

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Product Code</th>
<th>Strength</th>
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</thead>
<tbody>
<tr>
<td>Kemlite Extended Weathering Roof**</td>
<td>XLR*</td>
<td>⬤ ⬤</td>
<td>0.075”</td>
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<tr>
<td>Kemlite Aftermarket Translucent Roof***</td>
<td>TRF*</td>
<td>⬤ ⬤</td>
<td>0.075”</td>
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<tr>
<td>Heavy Duty Translucent Roof Designed for Truck Bodies ****</td>
<td>TRW</td>
<td>⬤ ⬤</td>
<td>0.06”</td>
</tr>
<tr>
<td>Kemlite Translucent Roof***</td>
<td>TI*</td>
<td>⬤</td>
<td>0.06”</td>
</tr>
<tr>
<td>Kemlite Cool Roof***</td>
<td>RISC*</td>
<td>⬤</td>
<td>0.075”</td>
</tr>
<tr>
<td>Heavy-Duty Translucent Roof****</td>
<td>EATR*</td>
<td>⬤ ⬤</td>
<td>0.085”</td>
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<tr>
<td>REEFER ROOFS</td>
<td>PRODUCT CODE</td>
<td>STRENGTH</td>
<td>THICKNESS</td>
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<tr>
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<tr>
<td>Kemlite Reefer Roof</td>
<td>RISC*</td>
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<table>
<thead>
<tr>
<th>SIDE SKIRTS</th>
<th>PRODUCT CODE</th>
<th>STRENGTH</th>
<th>THICKNESS</th>
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<tbody>
<tr>
<td>Aerodynamic Side Skirt</td>
<td>ARMR</td>
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<td>0.135&quot;</td>
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<table>
<thead>
<tr>
<th>SCUFF PLATES</th>
<th>PRODUCT CODE</th>
<th>STRENGTH</th>
<th>THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kemlite Heavy-Duty Liner and Scuff Plate</td>
<td>STI*</td>
<td>●●●●</td>
<td>0.240&quot;</td>
</tr>
<tr>
<td>Kemlite Strength Liner and Scuff Plate</td>
<td>EGAT*</td>
<td>●</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>Kemlite Lightweight Liner and Scuff Plate</td>
<td>LTR*</td>
<td></td>
<td>0.120&quot;</td>
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<table>
<thead>
<tr>
<th>EXTERIOR SIDEWALLS</th>
<th>PRODUCT CODE</th>
<th>STRENGTH</th>
<th>THICKNESS</th>
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</thead>
<tbody>
<tr>
<td>Noble SELECT</td>
<td>NS</td>
<td>●●</td>
<td>0.184&quot;</td>
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<tr>
<td>Crane GOLD</td>
<td>CAU</td>
<td>●</td>
<td>0.065&quot;</td>
</tr>
<tr>
<td>Filon MAX</td>
<td>MAX</td>
<td></td>
<td>0.05&quot;</td>
</tr>
<tr>
<td>Filon G3</td>
<td>RBP</td>
<td></td>
<td>0.045&quot;</td>
</tr>
</tbody>
</table>

* This product contains Surfaseal®, a unique surface to Crane Composites. This protective finish ensures that our panels will stand up to harsh conditions while maintaining a clean and sanitary surface.
** Equipped with Enhanced Tear Resistant Fabric
*** Equipped with Woven Fiberglass Edge Reinforcement
**** Equipped with Full Width Woven Mat or Bi-directional Fiberglass for Livestock trailers only
who we are

Crane Composites Inc., a subsidiary of Crane Co. (NYSE:CR), is the world's leading provider of fiber-reinforced composite materials.

The superior option

Since 1954, we have continued to pioneer numerous patented technologies for industrial and commercial product applications. Crane Composites fiber-reinforced panels (FRP) can be found in virtually every type of vertical market, from highly industrialized environments to stylish retail and hospitality settings.

No matter what the application, our products and team reflect our mission statement: we are a performance driven organization committed to global leadership and products of high-quality composite materials.

Customers benefit not only from the outstanding performance characteristics of our products, but also from our extensive support programs. Our expert product teams are focused on the needs of customers to provide unparalleled service and expertise.

The following are trademarks of Crane Composites, Inc. or a related company: ArmorTuf, Kemlite, Kemply, Noble, Reefer Roof, SunPatch and Surfaseal

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