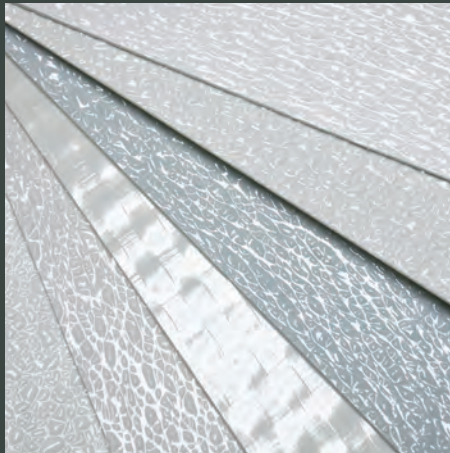


CRANE

Composites

TRAVEL TOUGH
with frp panels

Transportation Panels **ARMORTUF. | KEMLITE.**



frp Fiberglass Reinforced Panels

why **frp**? where **frp**?



sanitary & cleanable

All Crane Composites products are in full compliance with USDA/FSIS requirements and fully support the Food and Safety Modernization Act (FSMA). FRP does not support the growth of mold, mildew, or bacteria.

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.

dependable performance

Count on Crane FRP panels for extremely strong durable panels that resists most stains and chemicals.

there is more to **frp** than ever before

sidewall + ceiling liners

dry/refrigerated trailers + truck bodies

translucent roofs

dry trailers + truck bodies

reefer roofs

refrigerated trailers + truck bodies

side skirts

dry/refrigerated trailers

scuff plates

dry/refrigerated trailers + truck bodies

exterior wall liners

dry/refrigerated truck bodies

laminated panels

frp laminated panels to custom substrate

repair kits

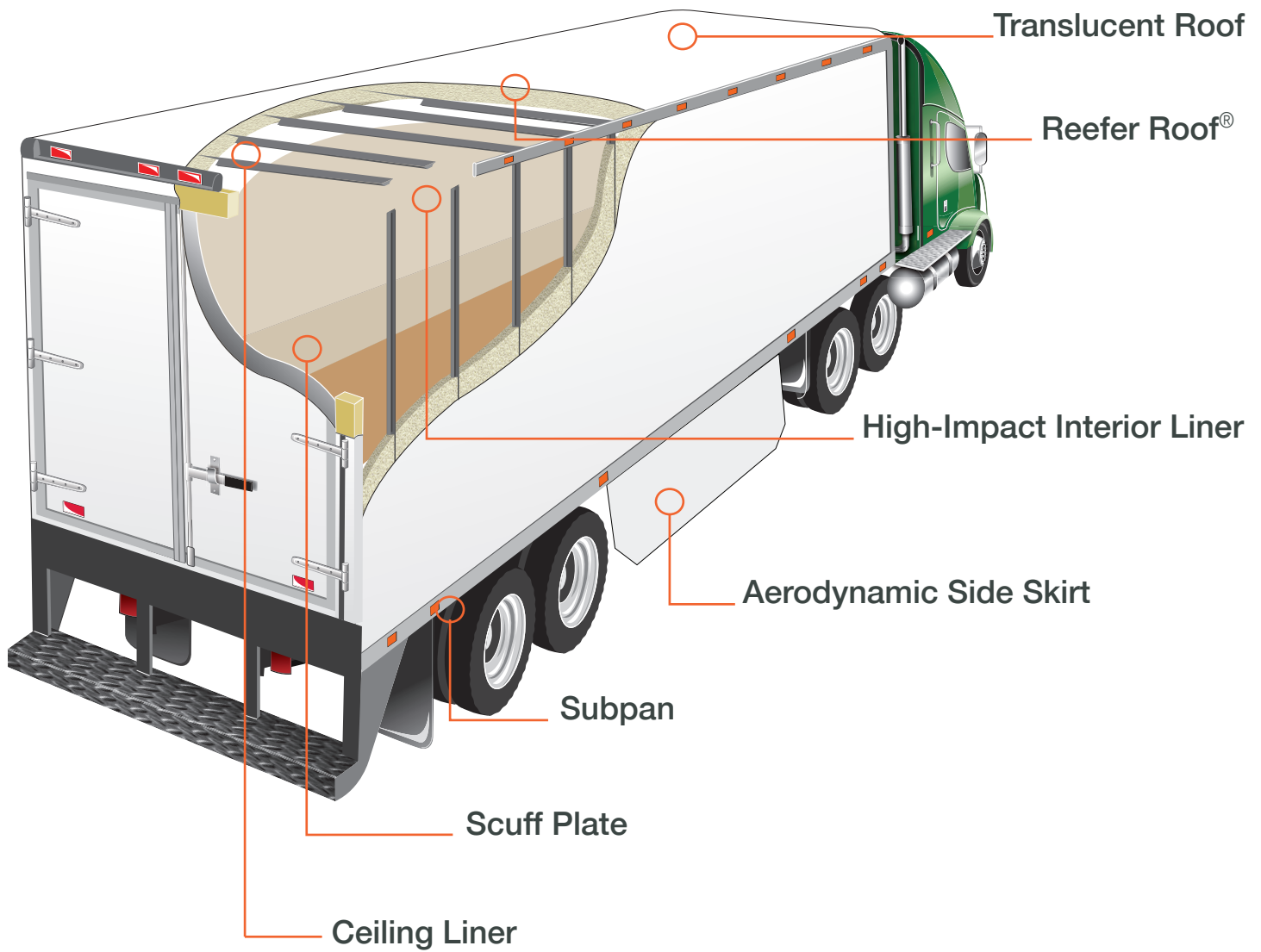
easy repair solutions



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 Food Safety and Modernization Act.

Our products have been used for over 70 years and are used today in food processing plants, restaurants, cold storage 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



benefits of **frp**



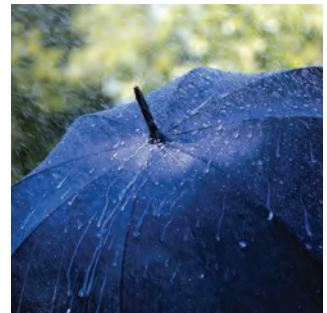
Durable



Mold Resistant

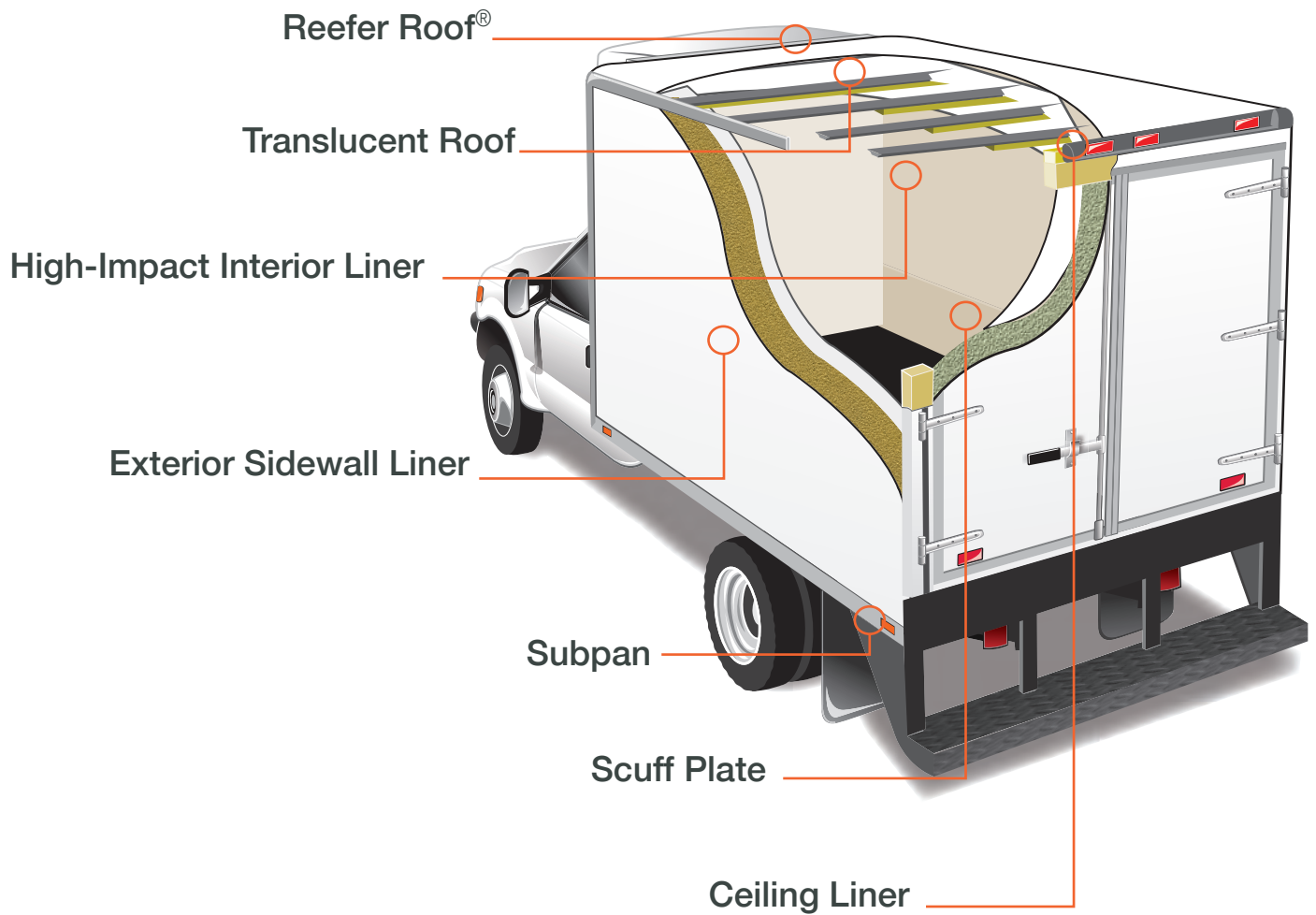


Light Weight



Moisture Resistant

DRY/REFRIGERATED TRUCK BODIES



best **life cycle cost**



Easy to Clean



Easy to Install



**High Weight to
Strength Ratio**



Impact Resistant

Liners superior liner technology



ARMORTUF EMBOSSED (ERMII)

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.

Crane Composites has been lining transportation trailers and truck bodies since 1954. Our liners are lightweight, easy to clean, and highly stain and abrasion resistant. Additionally, our panels are in compliance with FSMA/USDA/FSIS regulations.



liner benefits

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 and woven 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 and help to extend the life of the trailer.

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. The low vapor transmission rate helps to keep moisture from the insulating foam.

thermoplastic

Thermoplastic liner may stains and stains may be difficult to remove due to voids on the surface. The surface of a thermoplastic liner is softer and porous which makes it prone to gouging which may allow dirt and moisture to become embedded and trapped.

learn more at: cranecomposites.com/resources

Translucent Roofs light, bright + watertight

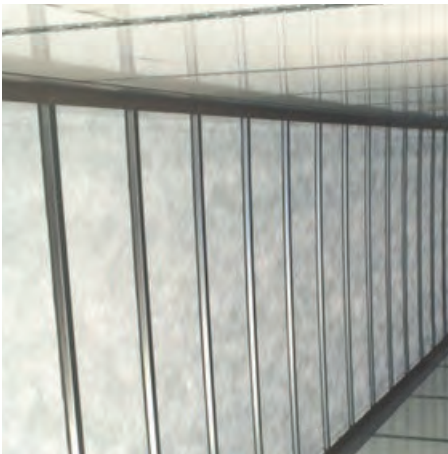


KEMLITE EXTENDED WEATHERING ROOF (XLR)

bringing natural light into your trailer

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. While protecting your cargo from UV light, Crane roofs also help to reduce heat build-up in your trailer in comparison to aluminum.

KEMLITE translucent roofs provide enough light to identify 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, while protecting your cargo from UV light.



translucent roof features + benefits

Crane Composites' translucent roofs help trailers utilize natural light and allow for even light distribution throughout the trailer 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 or truck body. 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, while protecting the cargo from UV.

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 0.075"

Woven fiberglass reinforcement built into roadside and curbside edges for additional rivet pull out strength | 0.47lbs/ft². Ideal roof for moving van trailers and livestock trailers.

SOLUTIONS FOR TRUCK BODIES + DELIVERY VANS

TRW

Woven 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 making it ideal for delivery vehicles. A one-piece FRP roof with woven reinforcement built into a roadside and curb side edges for additional rivet pull-out strength. | 0.46lbs/ft².

TI 0.05"

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

Reefer Roofs **because efficiencies matter**

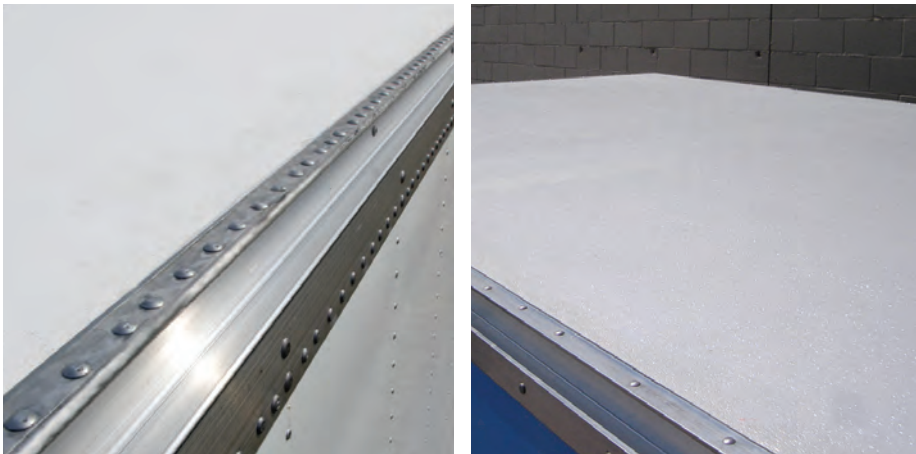


KEMPLITE REEFER ROOF (RISC)

durable + sustainable composite roof

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: KEMPLITE Reefer Roof. KEMPLITE 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.

Aerodynamic Side Skirts **because efficiency matters**

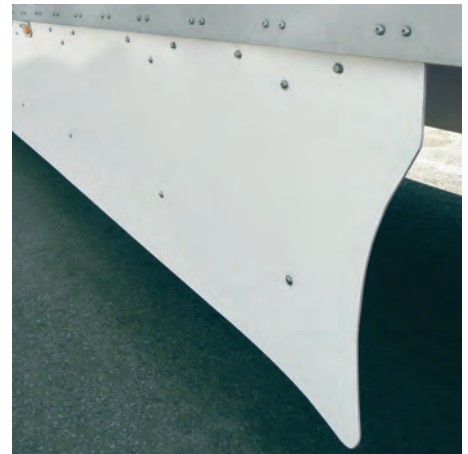


AERODYNAMIC SIDE SKIRTS (ARMP)

rugged design, lightweight & durable

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 is the only solution to 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°
- High flexural strength
- Crane's thermoset plastic and fully woven glass reinforcement allows for better fastener retention

IMPROVE FUEL EFFICIENCY

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

LIGHTWEIGHT

Under 1lb per square foot

CUSTOMIZABLE

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

for the latest product information, visit: cranecomposites.com/tr

Scuff Plate Panels protecting your sidewalls



KEMLITE SCUFF PLATE (EGAT)

KEMLITE Scuff Plate panels are a high-impact, durable, thin 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
- Maximizes available payload
- Protects against dents and tears
- Equipped with unique Surfaseal Technology for unmatched cleanability and stain resistance
- A fraction of the weight and thickness of alternative materials

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.

Exterior Sidewalls **quality + service**

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. HONEYCOMB

NOBLE Honeycomb walls are made with a honeycomb core, boasting a durable exterior gel coat finish on one side and reinforcement with a fiberglass resin on the back side of the panel. This panel is wood free and offers high strength-to-weight characteristics for structural applications. Paint and graphic friendly.

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. Paint and graphic friendly.

CRANE. GOLD

Crane Gold panels set the GOLD standard with a premium, high-gloss finish. It delivers the smoothest finish with 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 coilable 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.



CRANE GOLD (CAU)

Get more out of every mile and moment, choose Crane Composites Fiberglass Exterior for your vehicle for a radiant seamless finish.

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



Repair Kits	REPAIR DESCRIPTIONS	KIT COMPONENTS	FEATURES
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	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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 Sun-Patch 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Durable Repair • Film and Fiberglass Included For Your Needs • Chemicals Must Be Mixed Using Kit Supplies

Crane Composites Transportation product specifications

SIDEWALL + CEILING LINERS	PRODUCT CODE	BENEFITS	THICKNESS
ARMORTUF Heavy-Duty Liner Embossed	EATR	● ●	0.085" 2.2 mm
ARMORTUF Heavy-Duty Liner Smooth	ARMT	● ●	0.075" 1.9 mm
ARMORTUF Liner Embossed	ERMI	● ●	0.075" 1.9 mm
ARMORTUF Liner Smooth	ARMI	● ● ●	0.065" 1.5 mm
KEMLITE Liner Embossed	LTR	● ●	0.09" 2.3 mm 0.120" 3.1 mm
KEMLITE Tapered Liner Embossed Built-in scuff	LTR	●	0.120" 3.1 mm -tapers to 0.090" 2.3 mm
KEMLITE Ceiling Liner Embossed	LTR	● ●	0.06" 1.5 mm 0.075" 1.9 mm
KEMLITE Subpan Liner Embossed	LTR	● ●	0.06" 1.5 mm

● HEAVY-DUTY WOVEN ● HIGH-STRENGTH WOVEN ● WEIGHT SAVINGS ● SURFASEAL® FINISH

TRANSLUCENT ROOFS	PRODUCT CODE	BENEFITS	THICKNESS
KEMLITE Trailer Translucent Roof**	XLR	● ●	0.075" 1.9 mm
Aftermarket Trailer Translucent Roof**	TRF	●	0.075" 1.9 mm
ARMORTUF Truck Body Translucent Roof***	TRW		0.06" 1.5 mm
KEMLITE Translucent Roof** 0.06 for truck bodies and 0.075 for trailers	TI	● ●	0.06" 1.5 mm 0.075" 1.9 mm
KEMLITE Cool Roof** Provides low light transmission supporting cooler vehicle temperatures for delivery vehicles	RISC*	● ●	0.075" 1.9 mm
ARMORTUF Heavy-Duty Translucent Roof*** for livestock trailers	EATR*	● ●	0.085" 2.2 mm

● HIGHEST LIGHT TRANSMISSION ● BEST TEMPERATURE CONTROL ● HIGH-STRENGTH WOVEN ● SURFASEAL® FINISH

* 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

REEFER ROOFS	PRODUCT CODE	THICKNESS
KEMLITE Reefer Roof	RISC*	0.075" 1.9 mm

SIDE SKIRTS	PRODUCT CODE	THICKNESS
CRANE Aerodynamic Skirt Panel	ARMR	0.135" 3.4 mm

SCUFF PLATES	PRODUCT CODE	BENEFITS	THICKNESS
KEMLITE Monster Scuff	STI*	● ●	0.240" 6.1 mm
KEMLITE GatorPlate Scuff	EGAT*	● ●	0.145" 3.7 mm
KEMLITE Liner + Scuff Embossed	LTR*	●	0.120" 3.1 mm

● HIGH-STRENGTH ● SURFASEAL® FINISH

EXTERIOR SIDEWALLS	PRODUCT CODE	BENEFITS	THICKNESS
NOBLE HONEYCOMB	RCHWM	● ●	0.39" 10 mm
NOBLE SELECT C85	NS	● ●	0.184" 4.7 mm
CRANE GOLD	CAU	●	0.065" 1.7 mm
FILON MAX	MAX	●	0.05" 1.3 mm 0.07" 1.8 mm 0.085" 2.2 mm
FILON G3	RBP	●	0.045" 1.1 mm

● WOOD-FREE SUBSTRATE ● PREMIUM GLOSS ● HIGH GLOSS ● STANDARD FINISH

who we are

Crane Composites Inc., a subsidiary of Crane Company (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.



cranecomposites.com/ccitr | 1.800.435.0080 | sales@cranecomposites.com

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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