

ARMORTUF® Lightweight Liner

PRODUCT CODE: ARMI

SMOOTH WITH FULL WOVEN FIBERGLASS REINFORCEMENT

PRODUCT

ARMORTUF Liner, ARMI, is a high impact resistant panel in a polyester resin. It is comprised of continuous woven and randomly chopped fiberglass fibers. The fiberglass construction of the panel provides consistent physical properties throughout the entire panel. The polyester resin system provides an excellent bonding surface for adhesives and foams without the need for scrims or fabrics.

PURPOSE

ARMORTUF Liner, ARMI, is specifically designed and formulated for use as an impact resistant liner panel for truck bodies and trailers when more strength is needed compared to traditional chopped glass liner panels.



DESIGN PROPERTIES

PRODUCT CODE	NOMINAL THICKNESS	NOMINAL WEIGHT	FINISH	MAXIMUM LENGTH	MINIMUM WIDTH	MAXIMUM WIDTH	COLOR
ARMI	0.065" 1.65 mm	0.47 lbs/ft² 2.35 kg/m²	Smooth	Available up to 500' 152 m	11" 0.3 m	103" 2.6 m	White 85

TYPICAL PHYSICAL PROPERTIES

PROPERTY	ARMI	TEST METHOD
FLEXURAL STRENGTH	30 x 10³ psi 207 MPa	ASTM - D790
FLEXURAL MODULUS	1.1 x 10⁶ psi 7584 MPa	ASTM - D790
TENSILE STRENGTH	25 x 10³ psi 172 MPa	ASTM - D638
TENSILE MODULUS	1.4 x 10⁶ psi 9653 MPa	ASTM - D638
BARCOL HARDNESS	20	ASTM - D2583
THERMAL CONDUCTIVITY	0.4 Btu·in/hr·ft² of 5.0 cal·cm/hr·m² °C	ASTM - C177
GARDNER IMPACT STRENGTH	75 in·lb 8.5 J	ASTM - D5420
PUNCTURE STRENGTH	260 lb 117 kg	internal

SPECIFICATIONS

VALTO panels are manufactured in lengths and widths as required.

COMPOSITION

Reinforcement: Random chopped fiberglass and continuous fiberglass roving.

Resin Mix: Modified polyester copolymer, inorganic fillers, and pigments

FINISHED PANEL QUALITY

1. The frontside of the panel shall have a smooth finish. The backside of the panel shall have a smooth finish. The backside surface may have some variations which do not affect functional properties and are not cause for rejection. The backside of the panel is comprised of a polyester copolymer surface that is commonly bonded with adhesives or to foam in lamination processes. Typically, no additional preparation is required as long as the surface is dirt and oil free.
2. Physical properties shall be as set forth on Page 1.
3. Dimensions shall be as specified on purchase order, subject to the following tolerances:
 WIDTH: $\pm 1/8"$ (± 3.2 mm)
 LENGTH: $\pm 1/8"$ (± 3.2 mm) up to 12' (3.7 m)
 SQUARENESS: $\pm 1/8"$ (3.2 mm) in 48" (1.2 m) of width
 Average thickness: For thickness $\leq 0.100"$, $\pm 0.010"$
 For thickness $> 0.100"$, $\pm 10\%$
5. Bulk Coil policy #6207 applies

CERTIFICATIONS

1. Meets USDA/FSIS requirements. Reference document #6776 for conformance statement.
2. Meets FMVSS 302 requirements
3. Meets minimum requirements of major model building codes for Class C interior wall and ceiling finishes of flame spread ≤ 200 , smoke developed ≤ 450 (per ASTM E-84).

DESIGN DATA NOTES

1. Bulk coil may be ordered in long lengths or in specific cut-to-size pieces. Standard coil lengths are 250' and 500', custom sizes are available. VALTO reserves the right to manufacture and ship total linear footage of long length bulk coils ordered within the following parameter lengths per piece:
 Min. 250' | 61.0 m
 Max. 500' | 152.4 m
 Cut-to-size lengths 12' (3.7 m) and over of the same width will be interlapped (18"-36" [457.2 mm-914.4 mm] interlap per panel) into a coil for ease of handling and shipping. Total length tolerance - 0" and +6" (-0 mm and +152.4 mm).

STAINING STATEMENT

Some staining/discoloration may occur to frp liner panels after they have been in service for several years. This is a normal wear condition. As long as acceptable cleaning methods (i.e., steam cleaning) are used, the surface should remain sanitary and acceptable.

FABRICATING RECOMMENDATIONS

NOTE: Protect your eyes with goggles; cover your nose and mouth with a filter mask; cover exposed skin when cutting VALTO panels.

HAND FABRICATING: Drilling—High speed drill bit (60° cutting angle, with 12°-15° clearance) or hole saw.

STAPLING: Standard pneumatic stapler.

CUTTING: Sheet metal shears or circular saw with reinforced carborundum or carbide-tipped blade.

PRODUCTION FABRICATING: Use carbide-tipped tools. Straight cuts can be sheared (90° cutting edge with 0.002" [0.05 mm] clearance) or sawed. For irregular cuts, use die punch or band saw.

PAINTING PREPARATION: You should always test and validate the selected paint system with the frp panel prior to application. To properly prepare the panel surface for painting, make sure the surface is clean, dry, and free from all oils, grease, silicones, dust, and other contaminants. Common practices for preparation before painting include using alkaline detergents or clean water. Sanding or roughening of the panel surface is recommended to promote paint adhesion. 600 grit or finer sand paper or a 3M "Ultrafine" Scotch-Brite® pad are commonly used to roughen the surface.

CLEANING INSTRUCTIONS: Contact us for cleaning instructions.

SDS: Prior to working with our products, see our most current SDS at valtoem.com/sds.html.

STORAGE REQUIREMENTS

VALTO panels are designed for peak performance prior to and after the panels have been applied. Careful handling during the manufacturing process is important. Avoid excessive clamping, dropping and scraping. Keep contents dry. Store indoors in a well ventilated area. When outside storage is necessary, cover and protect from the weather and exposure to sunlight.

PLEASE NOTE THE FOLLOWING PRODUCT USE INFORMATION:

Products manufactured by VALTO will provide a clean, aesthetically pleasing finished installation. However, by nature, fiberglass reinforced plastic panels may occasionally have small areas that are aesthetically unacceptable for use. Panels should be inspected on-site prior to installation or lamination and original VALTO skid tag/ticket number removed and retained. If any portion of material will not provide an acceptable appearance, VALTO should be notified at once. Please report the non-conforming product utilizing the retained skid tag/ticket number. Upon verification of unacceptability, VALTO will replace or refund the purchase price of the non-conforming product.

At Valto, we partner with our customers, and through innovation, deliver advanced materials that enhance everyday environments. We succeed through a culture of collaboration, continuous improvement, and excellence. With integrity at our core, we challenge the status quo and pursue innovative approaches that benefit our customers and associates.

Since 1954, Valto Engineered Materials has provided innovative products and services and is a leading provider of FRP composite panels. Our lightweight composite products deliver unsurpassed strength and durability; and we continue to pioneer next level performance in building materials, recreational vehicles, and transportation.