

*Envirotuff Liner*TM Patented

***Protection to withstand
the toughest weather conditions***



Who makes ETL?



A Subsidiary Of



San Miguel Yamamura Woven Products Sdn. Bhd., a subsidiary of the San Miguel Corporation, is a leading manufacturer of a wide range of radiant barriers for residential & commercial buildings, agricultural and industrial applications.

San Miguel Yamamura Woven Products Sdn. Bhd. exports its products to North America, the European Union, ASEAN, China, the African Continent, Australia and the Middle East.



EnXtrotuff Liner prevents temperature fluctuations and providing protection to sensitive products

What is ETL?



2003 has seen the exciting launch of a product set to redefine the transport of wine and many other containerised goods.

The *Envirotuff Liner*, or ETL is a new innovation to arrive in the marketplace and will quickly replace existing insulation alternatives due to its supreme efficiency and effectiveness.

The *Envirotuff Liner* is a product specially designed to insulate shipping containers enabling the goods within to be protected from the dangerous temperature spikes witnessed during transport.



Prevents extreme temperature fluctuations



Fast & easy to install



Delivers your product the way it was packed



Is cost efficient

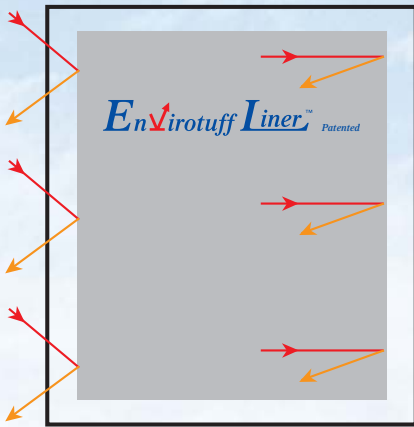
Why use ETL?



Across all industries, moving products in standard dry shipping containers can expose the goods to severe temperature fluctuations. In many cases this can cause irreversible damage to the product resulting in lost sales and expensive insurance claims.

A prime example of where temperature variations can cause havoc is during transportation of wine. Even minimal fluctuations can result in such problems as the loss of bouquet, oxidation, cork dryness and leakage; all these outcomes undoing the fine and competitive art of winemaking.

How does ETL work?

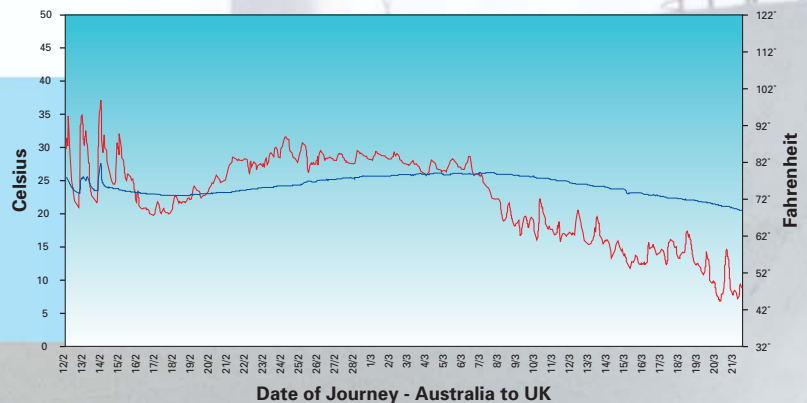


Goods inside the ETL are protected from dangerous temperature spikes as only a very small percentage of heat (or cold) is allowed in or out of the liner due to reflective properties on both sides.

- Container Wall
- Radiant heat trying to penetrate or escape
- Envirotuff Liner
- Radiant heat being reflected

The ETL is a fully woven reflective liner that is hung into a general-purpose ISO shipping container and allows for forklift loading, hand loading and slip sheet. Once loaded it is completely sealed providing a closed off temperature & humidity controlled environment for the goods inside.

Without the proper protection of the ETL, cargo inside a container can be exposed to dangerous heat penetrating by radiation and convection. Radiation or radiant heat comes through the container wall from the outside via infrared radiation while convection is the hot air circulating throughout the container. The ETL eliminates these problems by reflecting up to 97% of the radiant heat and preventing hot or cold air coming through the sealed liner, which would affect the goods. The ETL prevents heat rapidly penetrating or escaping the liner thus ensuring greater temperature consistency for your cargo during transit.



— ETL AVG — NO LINER AVG

The red line shows a container without an ETL experiencing extreme temperature fluctuations while the blue line highlights the consistent temperature maintained with an ETL.

The ETL offers more than the alternatives. It is more cost effective and better performing than bubble wrap and thermal blankets and is much cheaper, stronger and easier to install than other types of liners. ETL does not require the use of double sided adhesive tapes, glues, mechanical blowers, etc, during installation inside an ISO container. You hang the ETL using the lashings provided & tie it to the lugs found inside the ISO container. This task can be done quickly by one operator.

The ETL is specifically designed for usage in general purpose ISO shipping containers both 20' and 40'. However, because of the versatility and ability of the Envirotuff Liner material we have also designed liners for use on road, rail and air. As you can see below we have a full range of Envirotuff Liner including pallet covers and airfreight covers.

For more information on our Envirotuff Liner range of products, please call your local distributor.



Container Liner



Pallet Cover



AV Cover



AV Liner

Who uses ETL?

Due to ETL's affordability, ease of installation, versatility and strength, it can be used across many industries including wine, food and beverage, automotive, plastics, chemicals, computing and electronics.



Envirotuff Liner™ Product Range

• 20' Liner for standard ISO shipping container

• 40' Liner for standard ISO shipping container and high cube

• Pallet Covers

• Airfreight Covers in all sizes

• Insulated Heavy Duty Sealing Tapes

• Many more to come

Technical Specifications

Properties	Test Methods	Value
Weight	In-House	132gsm \pm 20gsm
Water Vapour Transmission Rate	ASTM F1249	\leq 1.00g/m ² /day
Emissivity (Al Surface)	ASTM C1371	\leq 0.05
Tensile Strength		
MD	In-House	\geq 500 (N/50mm)
TD		\geq 500 (N/50mm)
Elongation		
MD	In-House	\geq 15%
TD		\geq 15%



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