Packaging Consumables
Stretch Film & Shrink Wrap

Reinventing Unit Load Technology
Understanding Your Application

THE DIFFERENCE

When it comes to stretch and shrink film, protection is a given.

You expect your load to arrive damage free and intact. But, what really counts is handling and moving your product at the lowest cost per load. Millwood, Inc. provides Liberty Technologies branded films with a cross section of gauge, performance characteristics and prices that allow for the appropriate selection of the proper product for your application.

We offer engineered performance and a broad portfolio of packaging components, including film, corner boards and strapping, to provide the lowest cost per load. We also offer nationwide service to meet your needs wherever you are doing business.

That’s the Millwood difference.

Our Approach

TRANSPARENCY • SIMPLICITY • ACCOUNTABILITY

Regardless of gauge, film type (cast or blown), machine-type or market segment, "load containment" is simply the most transparent and quantifiable predictor of pallet wrap success from point A to point B. Millwood provides films with a cross section of gauge, performance characteristics and price points that allow you to select the right film for the application.

Load Containment is our commitment to set the standard, test the standard & live by the standard.
1. Unit Load

Stretch film and machinery vendors have broken pallet loads into 3 distinct classes, A, B, or C:

**A Profile:** These pallets are uniform in shape, with no protrusions, and are relatively clean. These are the easiest loads to wrap.

**B Profile:** These pallets are less than uniform and may have an object protruding or do not have clean vertical sides. Instead, they have irregular sides. The puncture hazard may require a better performance film.

**C Profile:** These pallets have an inconsistent shape. Characterized by very irregular loads with many corners, sharp edges and protrusions, they are difficult to wrap. A higher performance stretch film is required to handle this type of difficult load.

2. Method

There are two basic methods of applying stretch film to the load. Hand stretch film rolls are lighter and shorter than machine rolls, allowing ease of use for the user. Machine films are the preferred method in high volume accounts where greater speed and consistency of wrapped is crucial.

**Hand Wrap**

Hand wrap stretch film requires an operator to attach the film to the load and then to unwind the film as he circles the load. The operator controls the tension of the film to ensure that enough wrapping force is applied to contain and unitize the load. Since operators are carrying and manipulating the film, hand wrap rolls are typically shorter in width and length to limit their weight and make them easier to use. Hand wrapping is typically used in only low volume applications.

**MACHINE WRAP**

Machine wrap stretch film used in conjunction with a stretch wrapping machine that applies the stretch film to the load using parameters set by the operator. Wrap parameters are set on the stretch wrapper to optimize the amount and placement of the stretch film to provide maximum load retention. These parameters ensure the load is wrapped exactly the same way each time.
3. Film Performance

**STRETCH WRAP**
- Produced by either blown or cast extrusion
- Manufactured with conventional resins with 1 – 3 layers
- Stretch levels up to 250% in standard 60 gauge and higher providing a quiet unwind
- Produced with more than 3 layers, utilizing the latest resins providing optimal strength
- Stretch levels between 250 – 300%, with film gauges as low as 10 micro, providing high force to load on all load types
- Produced with 5 or more layers, and utilizing the latest in resin technology such as metallocene and polypropylene
- Stretch levels 300% + with ultra low gauges
- Below 10 micron ideal for high speed applications
- Variety of load profiles

**HAND WRAP**
- Protects load from shifting
- Protects load from moving during transit
- Excellent containment
- Exceptional puncture resistance

**HIGH**
- Environmentally sensitive for maximum unitization
- Offers intelligent and innovative design
- Variety of load profiles

**ULTRA-HIGH**
- Ultra thin gauges
- Reduces both the packaging material consumption and packaging costs
- Revolutionary breakthrough in technology

A variety of prestretch and oriented films along with colors, UVI, and other additives available in nominal and metric put-up. Other narrow banding and vented films are available for your unique applications.

**SHRINK WRAP**
- Excellent shrink properties
- Improved pack retention
- High puncture retention
- Anti-slip and anti-static options
- High seal capabilities
- High yield
- Down gauging potential
- Eco-friendly
- Revolutionary polymer formulation
- Strong & tight pack retention
- Superior strength and puncture resistance
- High clarity
- Maximum optics
- High speed
- Superior shrink properties
- Optimal load integrity
- High speed bundling needs
- Ultra thin yet tough and versatile
- Ideal for multi-packing that seals and shrinks at low temp.

**OTHER PRODUCTS**
- STRETCH HOODERS
- TOP SHEETS
- POLYWOVEN AIRBAGS
- STRAPPING
Why are we different?

**Testing at Millwood Lab**

At our Vienna, Ohio technology center, we take a unit load approach to evaluate your packaging needs and design a solution that ensures the lowest cost per load. The lab is equipped to conduct ISTA, ASTM and ISO compression, vibration and shock tests and evaluate the performance of a load on materials handling equipment.

**National In Scope & Local In Service**

Millwood currently provides products and services to more than 1,100 accounts, including many Fortune 500 companies. Our National Accounts sales team provides service to customers with central buying groups while our Regional Sales team provides local support. Additionally, we have Unit Load specialists throughout the country to assist with application specific packaging requirements. Millwood also has 26 pallet manufacturing facilities and six stocking centers throughout the U.S., providing additional localized support. This combination provides you with the personal relationship and service you need, when you need it and where you need it.

**Unit Load Systems Based Approach**

At Millwood, we are reinventing the Unit Load concept by providing services to evaluate and test your packaging and then assist you with the correct combination of packaging consumables with material handling and packaging systems. The result is lower total packaging costs, increased protection and the expertise to meet your sustainability goals. Packaging consumables include: pallets, stretch film, shrink film, strapping, corrugated, airbags, corner boards and more. Our machinery systems include: stretch systems, pallet handling, conveying, parts/services, high density dynamic storage and integration solution.
Millwood, Inc. is a nationwide, industry leader and innovator of unit load transport packaging systems, materials and services and a leading supplier of new, used and reconditioned pallets. Our leading product brand, Liberty Technologies, includes packaging consumables and material handling systems. Bringing together industry knowledge and creative engineering experience, we provide customers with packaging consumables and material handling systems that are customized to meet their needs.