



Packaging Consumables

Stretch Film & Shrink Wrap

Reinventing Unit Load Technology

MILLWOOD
INCORPORATED

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.**

EASY AS
1 2 3



1. Unit Load

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

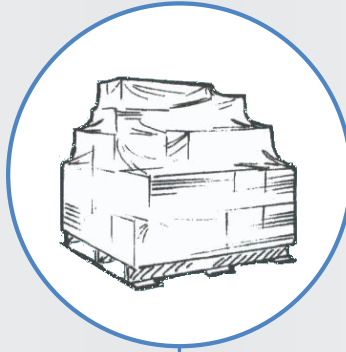
A PROFILE: These pallets are uniform in shape, with no protrusions, and are relatively clean. These are the easiest loads to wrap.

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.



A PROFILE
(UNIFORM IN SHAPE)



B PROFILE
(LESS THAN UNIFORM)



C PROFILE
(INCONSISTENT SHAPE)

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.

PROS

- Pallets are too unstable to transport to a stretch-wrapper
- Operational set-up does not support wrapping in limited/specified locations
- Variability in package integrity is acceptable to the customer
- Limited warehousing space
- Low number of pallets being wrapped per day

SIZING

- Weight: 3-9 pounds
- Length: 1500-2000'
- Gauge: 24 and up
- Width: 18" or less



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.

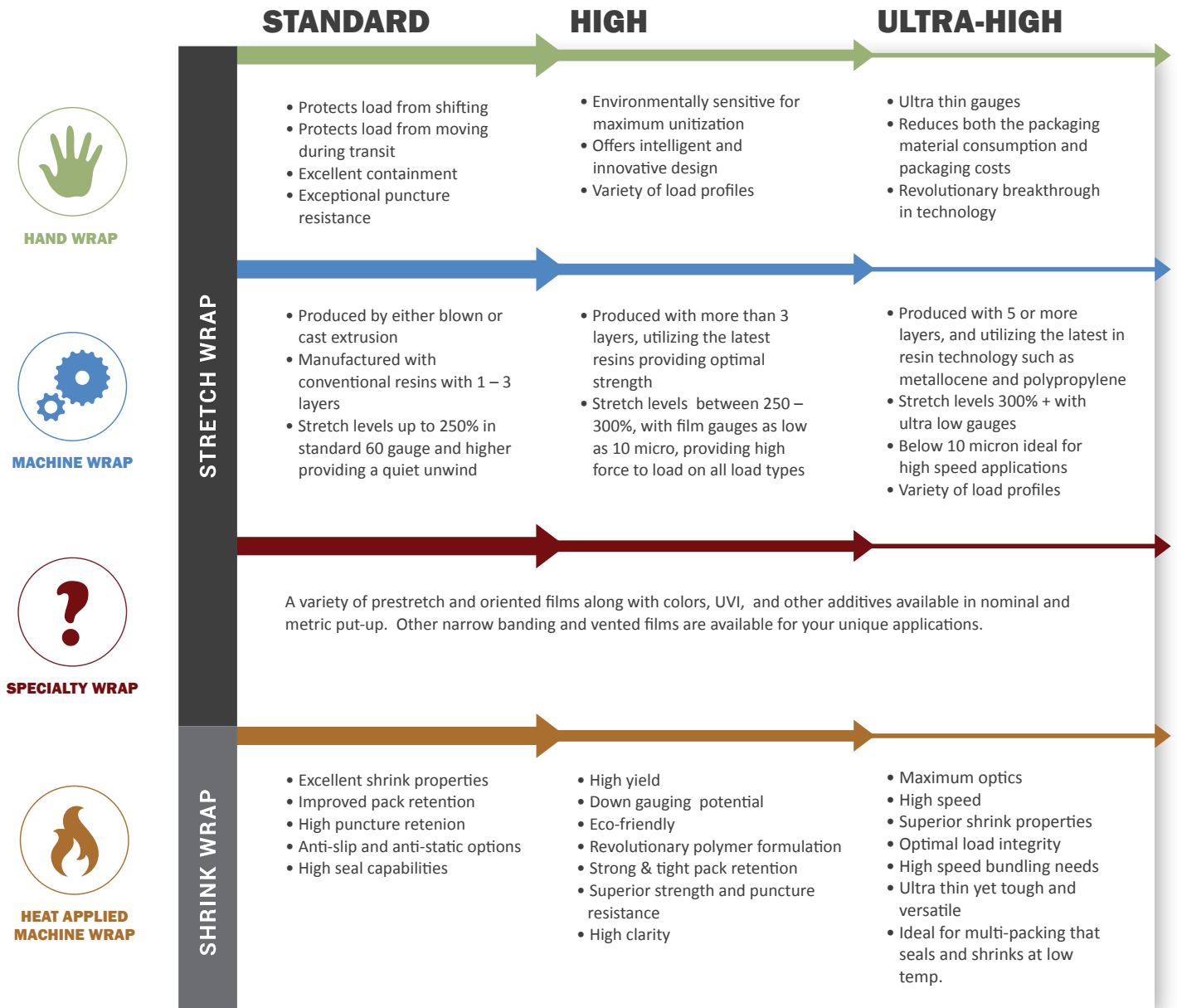
PROS

- Excellent load stability
- Increased film utilization through high pre-stretch
- Consistent performance
- Speed of application
- Integrates with automated palletization systems

SIZING

- Weight: 25-60 pounds
- Length: 3000-11000'
- Gauge: 35 and up
- Width: 20-30"

3. Film Performance



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.



Contact Information

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Regional phone numbers are listed by location on our web site at www.millwoodinc.com/locations.aspx

www.millwoodinc.com

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