

STRETCH WRAP SELECTION GUIDE



A highly stretchable plastic film, stretch wrap commonly is made from linear low-density polyethylene (LLDPE) that is wrapped around items. The elastic recovery keeps the items tightly bound.

Stretch film is commonly used to wrap products on pallets and secure them to each other and to the pallet. This can help reduce product loss, discourage load tampering, and reduce worker injury.

There are a variety of widths, thicknesses, and types of stretch film. See below for a breakdown of the two most commonly used extrusion processes for stretch film.

CAST STRETCH FILM

The cast extrusion process is a continuous process by which a thermoplastic material is melted and extruded through a flat die onto a chill roll, where it is quenched and re-solidified. This process allows the cast stretch film to have excellent clarity, require less force to stretch, increased tear resistance, unwind quietly from machines, and offer a superior cling. Both machine-grade and hand-grade cast stretch film are available.

Advantages of Cast Stretch Film—Usually less expensive than blown stretch film due to reduced manufacturing costs, and increased clarity allows users to easily see wrapped products. Cast stretch wrap unwinds quietly compared to blown stretch wrap. Cast stretch film offers 2-sided cling that allows the wrap to stay securely wrapped.

Disadvantages of Cast Stretch Film—Does not offer the load/holding power blown stretch film offers. Cast stretch film has less memory and tear resistance than blown stretch film.



BLOWN STRETCH FILM

Manufactured using the blown extrusion process. Plastic melt is extruded through an annular slit die, usually vertically, to form a thin walled tube. Air is introduced via a hole in the center of the die to blow up the tube like a balloon. On top of the tube an air ring blows onto the film to cool it. This process allows blown film to be tougher and more resilient than cast film. The higher mechanical properties of blown film typically allow a greater load holding power.

Advantages of Blown Stretch Film—Offers higher load and stretch capacity. Blown stretch film is a higher quality of film. Blown stretch film has a higher degree of memory once stretched allowing improved load security. A higher tear resistance is also an advantage when securing loads with sharp edges.

Disadvantages of Blown Stretch Film—Higher cost due to the manufacturing process. Blown stretch wrap has poor clarity due to crystallization in the manufacturing process. Blown film is also noisy when unwound from rolls.



SELECTING THE RIGHT SIZE FILM FOR YOUR APPLICATION:

Different thicknesses and widths of film are needed for different applications. Use the chart below to help find which thickness and width would be best for your application.



THICKNESS	2"-5" BANDING	12"-20" HAND GRADE	20" MACHINE GRADE
60 Gauge	Ideal for lighter smaller objects, small boxes, and banding light items together. Many moving companies use light gauge banding stretch film in place of tape.	Ideal for loads up to approx. 1300 lb. 12", 15", and 18" widths are ideal for shorter loads or loads where bottom and top only need to be wrapped.	Same strength as 12"-20" hand stretch wrap. Machines promote more efficient wrapping and reduce waste.
70 Gauge	Same uses as the 60 gauge, but enables slightly stronger holding strength.	Ideal for loads up to approx. 1600 lb. 12", 15", and 18" widths are ideal for shorter loads or loads where bottom and top only need to be wrapped.	Same strength as 12"-20" hand stretch wrap. Machines promote more efficient wrapping and reduce waste.
80 Gauge	The most common gauge in all stretch wrap. Known to be very versatile and handle a variety of applications.	Ideal for loads up to approx. 2200 lb. 80 gauge is the most common stretch film thickness and ideal for a variety of applications.	Same strength as 12"-20" hand stretch wrap. Machines promote more efficient wrapping and reduce waste.
90 Gauge	Uses are comparable to 80 gauge stretch film, but has increased strength.	Ideal for loads up to approx. 2400 lb. 90 gauge is a starting thickness for heavier film. The 18" and 20" 90 gauge and above are ideal for taller or heavier loads.	Same strength as 12"-20" hand stretch wrap. Machines promote more efficient wrapping and reduce waste.
100 Gauge	Commonly used for heavier boxes and products to bundle together. Medium heavy boxes and medium heavy items such as light lumber are ideal.	Ideal for loads up to approx. 2800 lb. The 18" and 20" 100 gauge and above are ideal for taller or heavier loads.	Same strength as 12"-20" hand stretch wrap. Machines promote more efficient wrapping and reduce waste.
115 Gauge	Used for smaller heavy objects, commonly used for banding lumber together.	Ideal for loads up to approx. 3000 lb. The 18" and 20" 115 gauge and above are ideal for taller or heavier loads.	Same strength as 12"-20" hand stretch wrap. Machines promote more efficient wrapping and reduce waste.
150 Gauge	Greater strength and puncture resistance, great for regular and irregular shaped boxes. Ideal for securing heavier loads.	Ideal for loads up to approx. 3500 lb. The 18" and 20" 90 gauge and above are ideal for taller or heavier loads.	Same strength as 12"-20" hand stretch wrap. Machines promote more efficient wrapping and reduce waste.

OPAQUE AND UV OPTIONS

Opaque stretch film may offer a variety of advantages over clear stretch film, such as:

- Deters pilferage from valuable shipments by concealing products.
- Helps to protect products from UV Rays.
- Prevents damage caused by rain, dew, and dust.
- Outlasts regular clear stretch film during extended outdoor storage.
- Great for color coding products.

UV protection can help extend the life of the stretch film when stored in the sun. The use of an opaque UV stretch wrap can increase the storage life of the film and the product when stored outside. Consider UV stretch film for any shipments stored outside longer than 60 days.



HOW TO STRETCH WRAP A PALLET

Extract approximately a yard of plastic off the stretch film roll then squeeze 8" to 10" of the end together to form a rope shape. Thread the rope part through one corner of the pallet. Begin wrapping around the base of the pallet. Wrap the base of the pallet at least five times while keeping the film tight as pulled off the roll. Slowly work your way up the box, focusing on keeping the wrap tight. The goal is to have all of the products stay together as one. Once at the top of the pallet, push the top boxes to see if they move or if they are one with the bottom boxes. If they move, wrap your way back down to the bottom of the pallet.

COMMON STRETCH FILM TERMS



Blown Stretch Film—A stretch film derived from the blown extrusion process that has a greater puncture resistance. Detailed information is on page 1.

Bottom Wraps—The wraps a stretch wrap machine uses to apply film to the bottom section of the load. Forming a strong bottom wrap will help to ensure load stability.

Cast Stretch Film—A stretch film derived from the cast extrusion process. Less manufacturing costs allow cast stretch film to be the more widely used stretch film. Detailed information is on page 1.

Cling—Allows the film to stick to itself and not the product. Some films have one-sided cling and others have two-sided cling.

Co-extrusion—Extruding two or more materials through a single die to enable the two materials to merge together.

Dart Drop—A commonly used test to measure puncture strength of a stretch film. It is conducted by dropping a semicircular object onto the film.

Elastic Recovery—The ability of a stretch film to recover to its original shape after being stretched.

Elmendorf Tear—Another common test used for stretch film and other products to measure tear resistance.

Extruder—Equipment used to change solid polymers into molten polymers.

Film Feed—In a stretch wrap machine, it is the speed at which stretch film is supplied to the load.

Film Force—Refers to the amount of tension applied to the film as the film is applied to the load.

Film Memory—The ability of the film to return to its pre-stretched form. This enables the film to maintain a tight load during transportation.

Film Tail—The start and end pieces of stretch film applied to the load. Generally these pieces are cut off later.

Gauge—A measurement used to measure film thickness or caliper. One gauge is equal to 0.254 microns. Microns are another common form of film measurement.

Gloss—The amount of light reflected from a film's surface. Cast stretch films tend to have a higher gloss than blown stretch films.

Haze—Refers to lack of clarity in a film. Blown stretch films commonly have more haze than cast stretch films due to crystallization during the manufacturing process.

LLDPE Stretch Film—Linear Low Density Polyethylene stretch film. A plastic that is preferred in a variety of films due to its toughness, stretchability, and relative transparency.

Metallocene—A compound used to make a new form of stretch film. Metallocene stretch films offer increased puncture resistance and many other useful benefits.

Microns—A unit of measurement commonly used to measure the thickness of a film. A micron is equal to one millionth of a meter. One gauge is equal to 0.254 microns.

Over Wrap—The amount of stretch film applied over the top of the load. It is used to provide a downward force on the load.

Pallet Covers—A poly film cover used to protect pallets from dust, UV rays, and conceal the load.

Post-stretch—Stretching a film when wrapping the load to achieve tighter tension on the load.

Pre-stretch—Stretching the film before applied to loads. Pre-stretch films can result in improved load integrity and lower packaging costs.

Roping—Bunching the stretch film into a rope shape. Roping is used to start many loads and offers an increased strength for additionally securing a load.

Tackifiers—Additives used in the manufacturing process to add cling to the film.

Tear Resistance—Refers to the film's ability to withstand tearing forces.

Tension Stretch—A pulling force that stretches the materials.

Wide Web Stretch Film—A large sized film used for larger equipment. Generally it refers to machine stretch film wider than 30".

Yield Strength—The amount of stretch a film can have without permanently deforming.

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