

Contents / What is this?

This Help File is an attempt at consolidating various pieces of different information, in regards to the [Shrink Film](#) Industry, into one source. For basic information or definitions please try the [Glossary](#). If you have any additions or comments, please contact me at CHayes@ITape.com. Thank you.

[Equipment](#)

[Exlfilm™ Shrink Films](#)

[Package Sizing](#)

[Sealing Systems](#)

Intertape Polymer Group

Definitions

[Glossary](#)

Intertape Polymer Group

Glossary

A

[Air Pressure](#)
[Angel Hair](#)
[APS](#)
[ASTM](#)
[ASTM Methods](#)
[Automatic Sealers](#)

B

[Ballooning](#)
[Bead Seal](#)
[Bi-Axial Orientation](#)
[Blocking](#)
[Blown Film](#)
[Bundling](#)
[Burn Through](#)

C

[Cellophane](#)
[Center Folded](#)
[Center Folder](#)
[Ceramic Bead](#)
[Coefficient of Friction \(ASTM\)](#)
[Coextrusion](#)
[Cold Flex](#)
[Cold Slip](#)
[Conveyor](#)
[Copolymer](#)
[Core](#)
[Cross-Linking](#)
[Crows Feet](#)

D

[Dog Ears](#)
[Double Roll Length](#)
[Drape](#)
[Drive Roller](#)
[Dwell](#)

E

[Elastomer](#)
[Electron Beam](#)
[Elongation \(ASTM\)](#)
[EPS](#)
[EVA](#)

F

[Felt](#)
[Film Clamp](#)
[Film Cradle](#)
[Fish Eyes](#)
[Form-Fill & Seal \(FFS\)](#)

Air Pressure

The amount of compressed air delivered to a [Pneumatic](#) device.

Angel Hair

Thin strands of film appearing at the cut end of film resulting from sealing.

APS

Acrylonitrile-butadiene-styrene terpolymer

ASTM

American Society for Testing and Material Standards

www.NTIS.gov/Standards/astm.htm

ASTM Methods

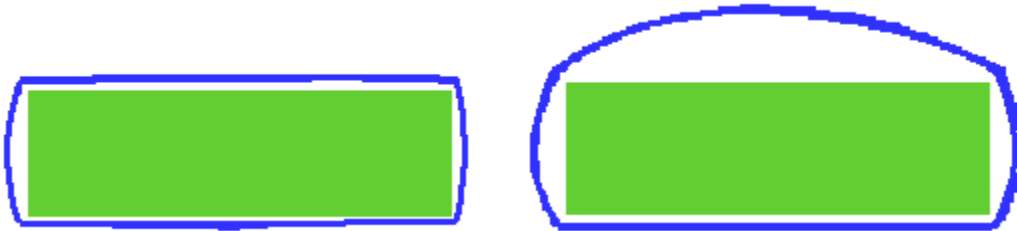
A series of test performed by a Laboratory on Shrink Films to determine various properties.

Automatic Sealers

A [Shrink Film](#) sealer which operates automatically without the assistance of an operator.

Ballooning

A pillow effect created when air is trapped within the shrinking bag.



Bead Seal

A thin round weld created when pressure and heat are applied to two layers of film.



Bi-Axial Orientation

Oriented along both X and Y-axis.

Blocking

A condition in which two layers of film adhere to one another.

Blown Film

A film extruded by air inflation.

Bundling

A process which overwraps a package in two separate sheets of polyethylene. There is usually only a front and back seal, the package has a "bull's-eye" appearance from the side.

Burn Through

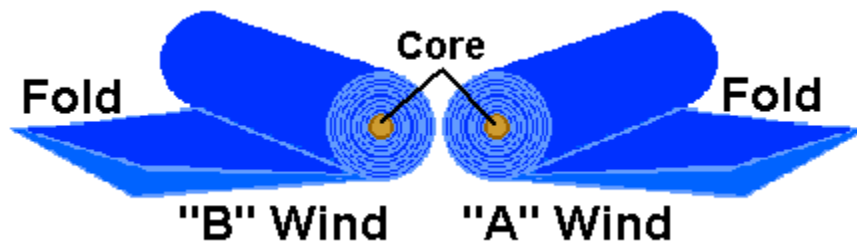
A temperature or condition where a film becomes cloudy or burns in the shrink-tunnel.

Cellophane

An organic, transparent sheet or tube of regenerated Cellulose.

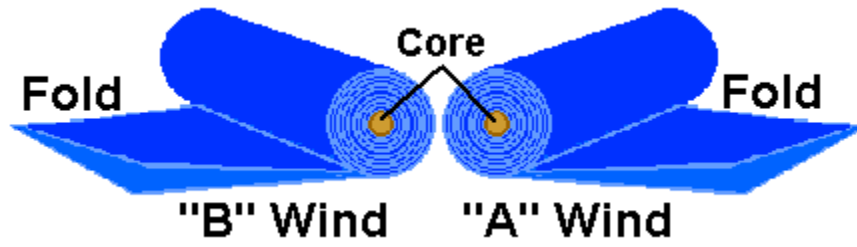
Center Folded

A film that has been folded in half, lengthwise.



Center Folder

A mechanical device used to create centerfolded film.



Ceramic Bead

A small part which is made from a ceramic material and may or may not be coated with [Teflon](#). It is used to insulate the [Seal Wire](#) from the Seal Bar. Also it keeps the wire strait in a narrow grove.



Ceramic Bead

Coefficient of Friction (ASTM)

This test is used to determine the amount of friction between two surfaces. The results of this test are used to determine the slip properties of a film.

Coextrusion

Two or more polymers extruded and combined in a die, each forming a distinct layer in the final film.

Cold Flex

Ability of a film to perform at low temperatures without failure.

Cold Slip

The amount of force required to slide two surfaces against one another at ambient temperature.

Conveyor

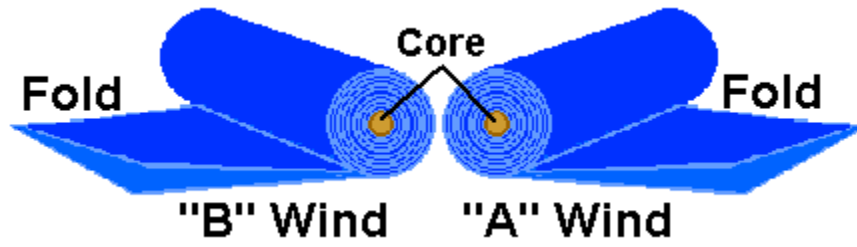
A device utilized in moving objects from one place to another. May be powered or gravity. In Shrink-Tunnels the conveyor may be made up of several different materials; [Wire Mesh](#), [Teflon Mesh](#), [Silicone Covered Rollers](#), [Teflon Covered Rollers](#), and composite materials.

Copolymer

Result of two monomers being combined through [polymerization](#).

Core

A paper tube which film is wound on.



Cross-Linking

A process which binds the polymer chains into a network. Significantly increasing a films heat stability and strength. Cross-linked shrink films are also known as being [Irradiated](#).



Polymer Strands



Cross-Linked PS

Crows Feet

A series of wrinkles radiating out from a finished package's corners. Usually caused by the air inside a package escaping before the film has had time to fully shrink down. Decrease the number of perforations in package to reduce these blemishes.



Dog Ears

Triangular projections of un-shrunk film at the corners of finished packages. Caused by the air inside a package escaping before the film has had time to fully shrink down. Decrease the number of perforations in package to help the corners shrink down fully.



Double Roll Length

Twice the footage as a standard roll of shrink film. Aids customers in reducing the number of roll changes needed.

Drape

The softness of a film characterized by the ability to conform to irregular shapes.

Drive Roller

A powered roller that is driven by a motor.

Dwell

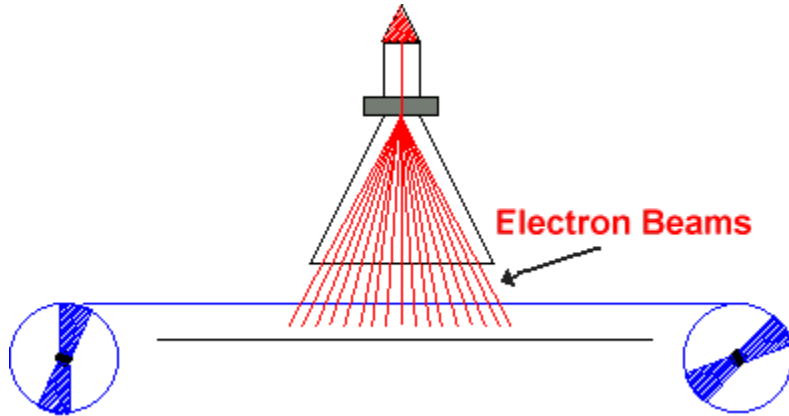
Refers to the total time the seal bar makes contact with the [Seal Pad](#).

Elastomer

Basically means "rubber".

Electron Beam

A device used in the [cross-linking](#) process. High speed electrons leave the electron accelerator and strike the target thereby creating links between the polymer strands.



Elongation (ASTM)

The amount of stretch, recorded as a percentage, a film will reach, at a breaking point, compared to the original sample length. This percentage is a barometer of the toughness of a film.

EPS

Expanded Polystyrene

EVA

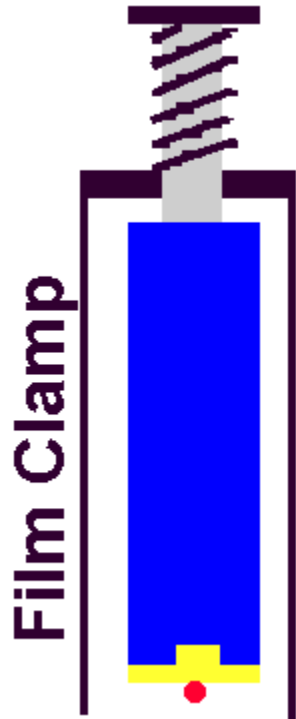
Ethylene-vinyl acetate copolymer

Felt

A fibrous material that is interlocked by the application of heat, moisture and pressure.

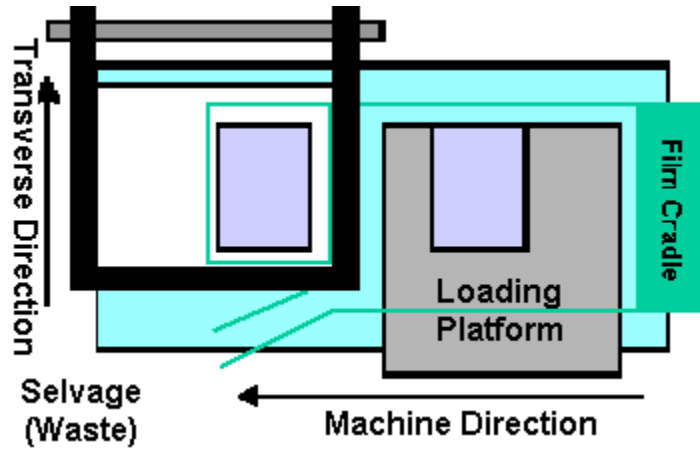
Film Clamp

Designed to hold film in place during sealing cycle and isolate tension on film outside the sealing area. Also can be used as part of an overall safety system on automatic cycling equipment.



Film Cradle

A device usually comprised of two rollers which allow the roll of [Shrink Film](#) to easily be removed from the roll. May be a [Powered Film Unwind](#) or manually pulled.

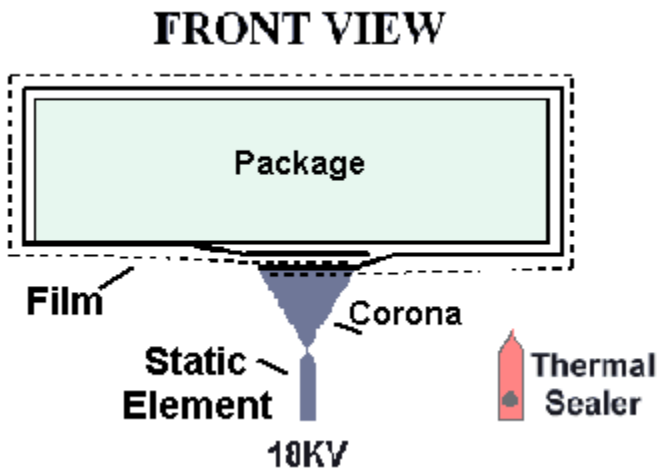


Fish Eyes

A scalloped surface on a finished product surface.

Form-Fill & Seal (FFS)

A type of equipment which produces a tube of film into which packages are introduced.



G

[Gauge](#)
[Gloss \(ASTM\)](#)

H

[Haze \(ASTM\)](#)
[High Density \(HDPE\)](#)
[HIPS](#)
[Hole Punch](#)
[Hot Slip](#)

I

[Idler Roller](#)
[Impulse Seal](#)
[Inch Price](#)
[Inverting Forming Plow](#)
[Irradiated](#)

L

[L-Sealer](#)
[Laminate](#)
[Lap Seal](#)
[Linear Low Density \(LLDPE\)](#)
[Loading Platform](#)
[Low Density \(LDPE\)](#)

M

[Machinability](#)
[Machine Direction](#)
[MD](#)
[Memory](#)
[Moisture Vapor Transmission \(ASTM\)](#)
[Monoaxial](#)
[Monolayer Film](#)
[Multilayer Film](#)

N

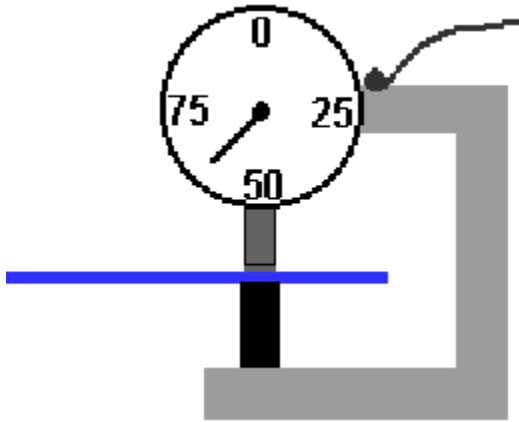
[Nichrome](#)

O

[Opaque](#)
[Optics](#)
[Orientation](#)
[Oriented](#)
[Oxygen Transmission Rate \(ASTM\)](#)

Gauge

A term used to describe the thickness of a material.



Gloss (ASTM)

The brightness or sheen of a film.

Haze (ASTM)

The property of a film to scatter light and cause it to have a cloudy appearance.

High Density (HDPE)

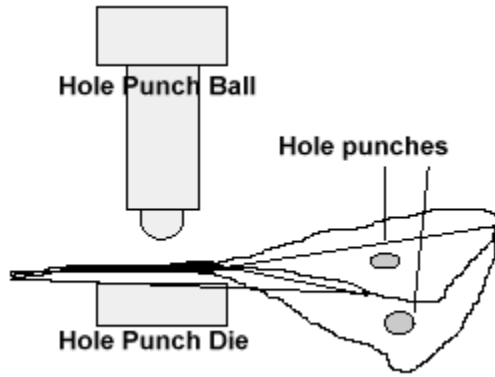
High Density polyethylene is linear, and has a high molecular weight and high crystallinity.

HIPS

High impact polystyrene

Hole Punch

A mechanical device used to produce an air evacuation hole in a sealed bag.



Hot Slip

The amount of force required to slide two surfaces of heated film against one another.

Idler Roller

A roller which is passive and is not mechanically driven, but turns freely.

Impulse Seal

A heat sealing technique where the element is pulsed with voltage during the sealing cycle.

Inch Price

Shrink film is sold by multiplying the width of the film times the sell price per inch. (10" film, \$13.55/in = \$135.50)

Inverting Forming Plow

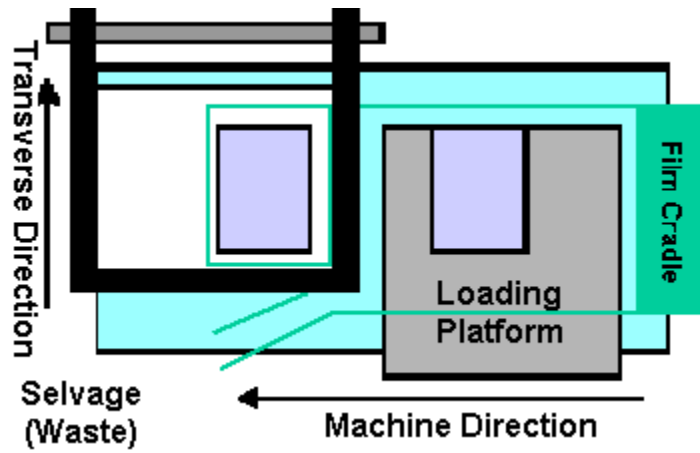
A forming plow which turns the film 90 degrees. This allows packages to feed directly into the shrink film. The outside of the film becomes the inside and vice versa.

Irradiated

The process of passing an object through an [Electron Beam](#).

L-Sealer

A term used to describe equipment where the seal area is in the shape of an "L".



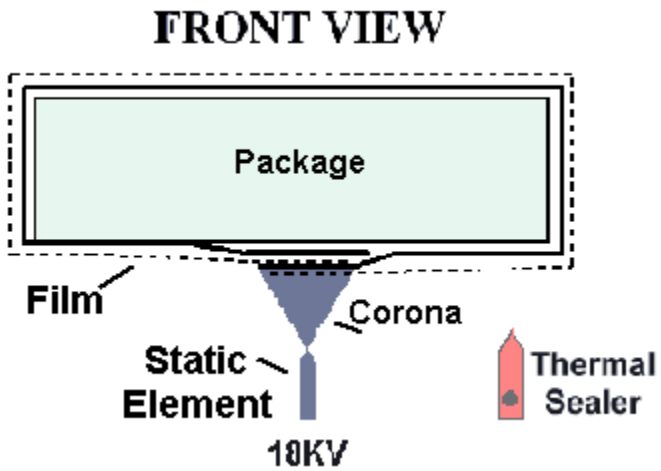
Laminate

A general term used to describe structures comprised of two or more materials.



Lap Seal

A seal made with two layers of film overlapping one another.

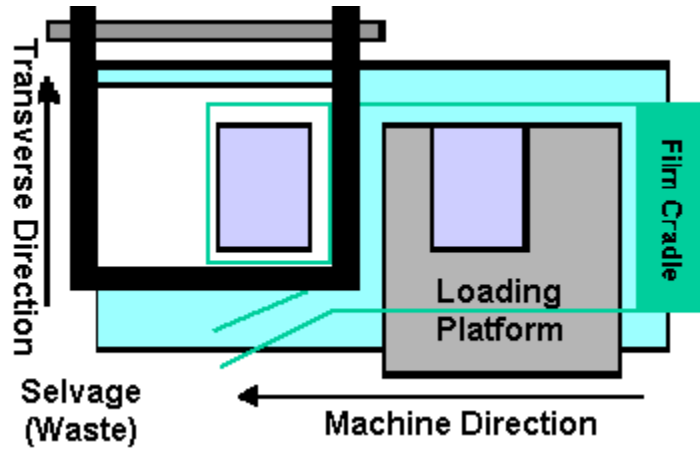


Linear Low Density (LLDPE)

Is made using a Ziegler Natta catalyst, which is a low-pressure process that produces little branching. However, the crystallinity of this polymer is still low.

Loading Platform

A device which is inserted between the top and bottom sections of [Center Folded Shrink Film](#). Packages are fed into the Shrink film on this unit.



Low Density (LDPE)

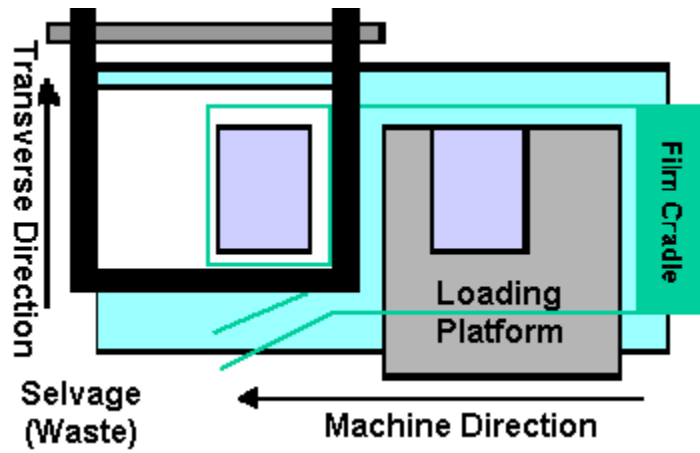
Low-Density polyethylene is branched. The higher the crystallinity, the more dense the material. Branching of a polymer chain decreases its ability to crystallize and therefore decreases the density. It is made by a free radical high-pressure polymerization process.

Machinability

The ability to form and seal on overwrapping equipment.

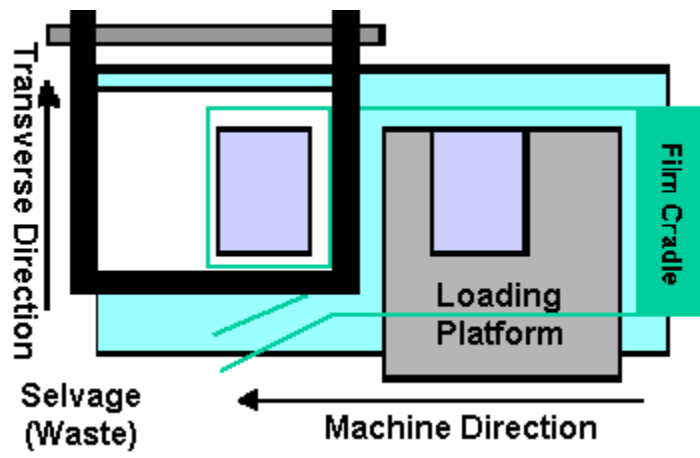
Machine Direction

The direction the film is manufactured and moves through the sealing equipment.



MD

[Machine Direction](#)



Memory

The ability of a film to maintain its characteristics after shrinking.

Moisture Vapor Transmission (ASTM)

The amount of water vapor, in grams, which passes through a specific size swatch in a 24 hour period.

Monoaxial

A film which is oriented to shrink in only one direction.

Monolayer Film

A single layer film extruded from one or a blend of raw materials.

Monolayer



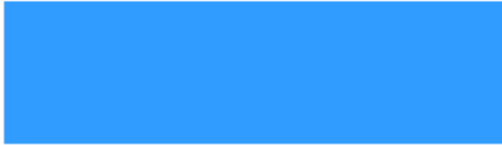
Multilayer



Multilayer Film

A film comprised of more than one layer of similar or different polymers.

Monolayer



Multilayer



Nichrome

An alloy comprised of Nickel and Chromium metals. As current flows through the wire it heats and expands. It is used for sealing [Shrink Film](#).

Opaque

Relatively impervious to light.

Optics

The visual properties of a film.

Orientation

The stretching technique used in the manufacturing of film.

Oriented

The stretching and aligning of a film's molecules at a temperature below its melting point.

Oxygen Transmission Rate (ASTM)

The amount of Oxygen, in cc's, that passes through a sample of film in the course of a time period.

P

[PBD](#)
[PC](#)
[PEG](#)
[Perforations](#)
[PET](#)
[PI](#)
[Pin Perforators](#)
[Plastic](#)
[PMMA](#)
[Pneumatic](#)
[Polyethylene](#)
[Polyethylene \(Bundling Film\)](#)
[Polymer](#)
[Polymerization](#)
[Polyolefin](#)
[Polypropylene](#)
[Powered Film Unwind](#)
[PP](#)
[Preferential Shrink](#)
[Pressure \(seal\)](#)
[PS](#)
[PS-b-PI](#)
[PSI](#)
[PVC](#)

S

[Seal Pad](#)
[Seal Wire](#)
[Sealing Cycle](#)
[Selvage](#)
[Separator Bar](#)
[Shrink Film](#)
[Shrink-Tunnel](#)
[Side Sealer](#)
[Silicone](#)
[Silicone Covered Rollers](#)
[Single-wound Film](#)
[Slip](#)
[Static](#)
[Static Seal](#)
[Stiffness Modulus \(ASTM\)](#)

PBD

Polybutadine

PC

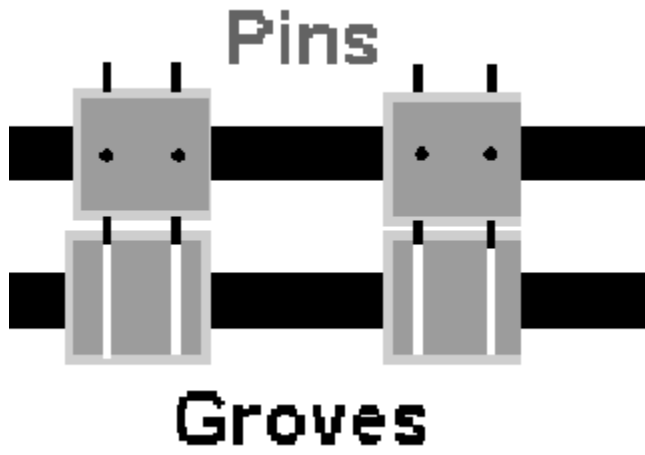
Polycarbonate

PEG

Polyethylene glycol

Perforations

Air evacuation holes in a film made by pin perforators.



PET

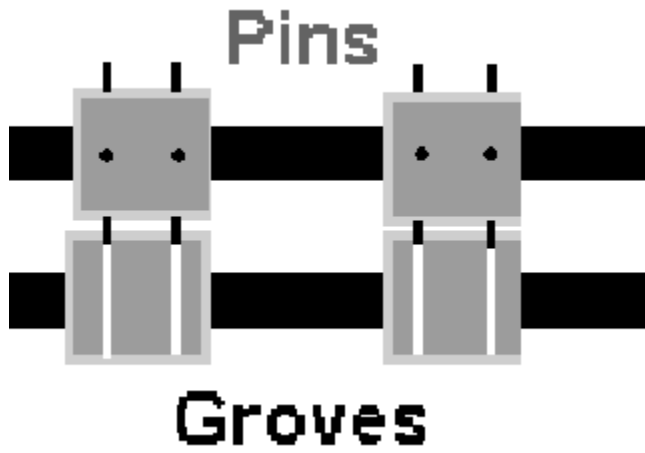
Poly (ethylene terephthalate)

PI

Polyisoprene. Natural rubber latex.

Pin Perforators

A device used to produce small holes in film to allow air to escape during the shrinking process.



Plastic

Any synthetic, organic material that can be molded under heat and pressure into a shape that is retained after the heat and pressures are removed.

PMMA

Poly (methyl methacrylate) commonly called PLEXIGLAS(tm)

Pneumatic

Relating to or using gas (air or wind). A device which uses [air pressure](#) to move.

Polyethylene

A simple thermoplastic polymer of ethylene.

Polyethylene (Bundling Film)

Predominately used in the process of packaging known as 'bundling'. Lacks good optical properties and has limited shrink potential. The actual shrinking process of this film occurs after the film is heated and begins to cool.

Polymer

A material made through the process of [Polymerization](#).

Polymerization

A gas heated under pressure forms a solid.

Polyolefin

A generic term used to describe ethylene and/or propylene based plastics. All [Exfilm Shrink Films](#) are polyolefins.

Polypropylene

A thermoplastic polymer of propylene.

Powered Film Unwind

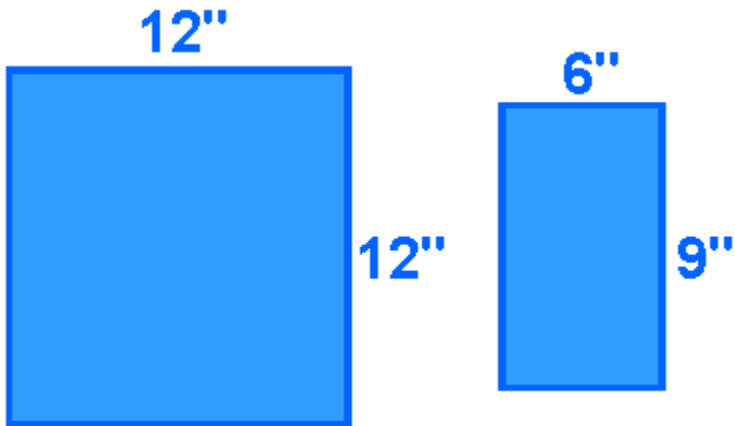
A film unwind utilized on many [Automatic Sealers](#). This device entails a powered roller which aids in the removal of [Shrink Film](#) from the roll.

PP

Polypropylene, subdivided as homopolymer, random impact and block copolymers

Preferential Shrink

The characteristics of a film to shrink more or less in a specific direction.



Pressure (seal)

The key element involved in making strong, clean seals. Correct and even pressure along a sealing surface allows for a lower sealing Temperature. Pressure may be derived by; Manual, [Pneumatic](#) or Mechanical means.

PS

Polystyrene

PS-b-PI

Polystyrene/polyisoprene block copolymer

PSI

Pounds per Square Inch. Usually used to quantify the degree of [Air Pressure](#) in [Automatic Sealers](#).

PVC

A type of shrink film derived from a polymer of (Vinyl chloride) which is prepared from acetylene and ethylene. 'Poly vinyl chloride' - PVC

Seal Pad

A material made usually of [Silicone](#), designed to provide a contact surface for the Sealing System to cut and seal [Shrink Film](#). May also be of a [Felt](#) material.

Seal Wire

An element made from nichrome wire which heats as current flows through it. Used in the sealing of shrink films.

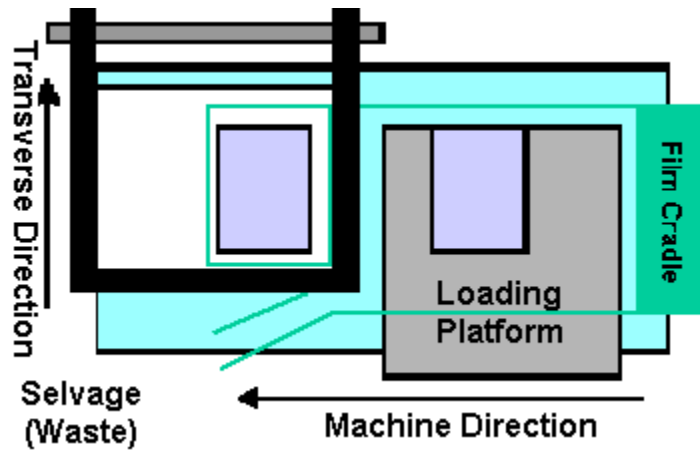


Sealing Cycle

The time from which the Sealing System first contacts the [Shrink Film](#) until the film is released. The process of making a seal is dependent on these three things: Pressure, Temperature and Time. If one of these fails to occur, or transpires at the incorrect time, a satisfactory seal cannot be produced.

Selvage

Another term for trim waste.



Separator Bar

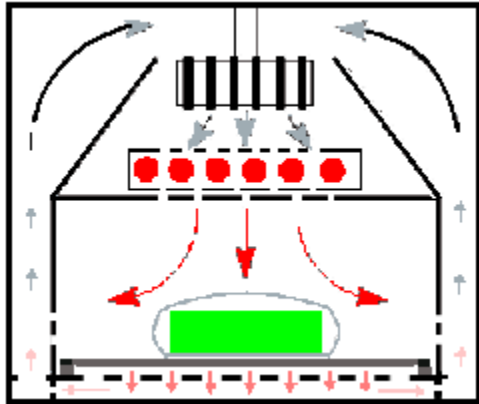
A device which opens [Shrink Film](#) as it passes over it.

Shrink Film

A plastic film comprised of one or more resins, which through manufacturing processes, reduces in size with the application of heat. Common names: [Polyethylene](#), [Polyolefin](#), and [PVC](#).

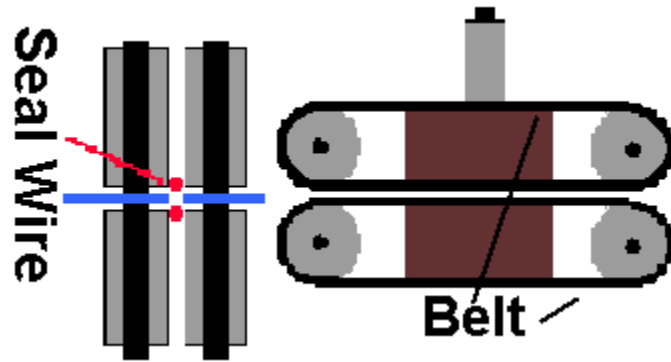
Shrink-Tunnel

A type of equipment featuring a chamber producing heat and airflow designed to shrink film. A conveying system delivers the package through the chamber.



Side Sealer

A device which seals and cuts shrink film in the [Machine Direction](#) on an [Automatic Sealer](#). Designed to make a continuous seal.



Silicone

A nonmetallic element having the symbol "Si". Used primarily to reduce buildup on objects. May be formed as a solid, which has good high temperature characteristics. Used as a [seal pad](#) and [conveyor roller cover](#).

Silicone Covered Rollers

A steel roller which is covered with a thin tube of [Silicone](#). The Silicone insulates the package from the heated steel during the passage through the [Shrink Tunnel](#). The rollers are supported by chains on each end. The chains require frequent lubrication to keep them operating properly.

Single-wound Film

A single layer of film wrapped around a core.

Slip

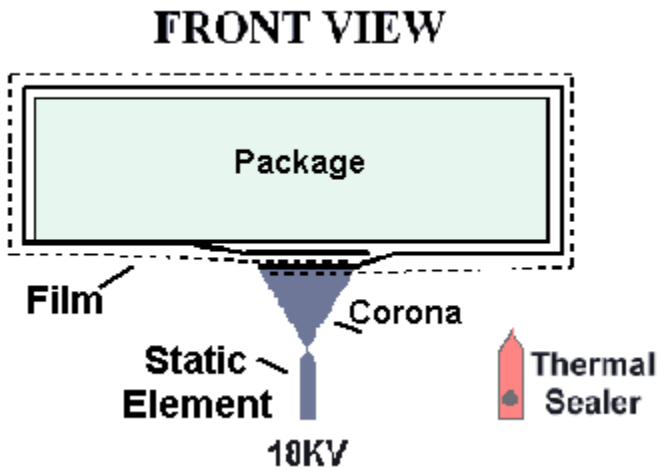
The property of a film to move over surfaces with little resistance.

Static

An electrical charge built-up in plastic film.

Static Seal

A type of longitudinal seal used in [FFS equipment](#). Overlapping film edges are adhered to one another via a static charge.



Stiffness Modulus (ASTM)

This is used to determine the amount of force necessary to bend a film sample. Stiffer films perform better on high speed equipment than do softer films.

I

- [Tap Switch](#)
- [TD](#)
- [Tear Initiation](#)
- [Tear Propagation \(ASTM\)](#)
- [Tear Resistance](#)
- [Teflon](#)
- [Teflon Covered Rollers](#)
- [Teflon Mesh](#)
- [Temperature \(seals\)](#)
- [Temperature \(tunnel\)](#)
- [Tensile Strength \(ASTM\)](#)
- [Thermoplastic](#)
- [Thermoset](#)
- [Time \(seal\)](#)
- [Transverse Direction](#)
- [Trim](#)
- [Trim Seal](#)
- [True Dwell](#)

U

- [Ultra-High Molecular Weight \(UHMWPE\)](#)
- [Unbalanced](#)
- [Unrestrained Shrink \(ASTM\)](#)

W

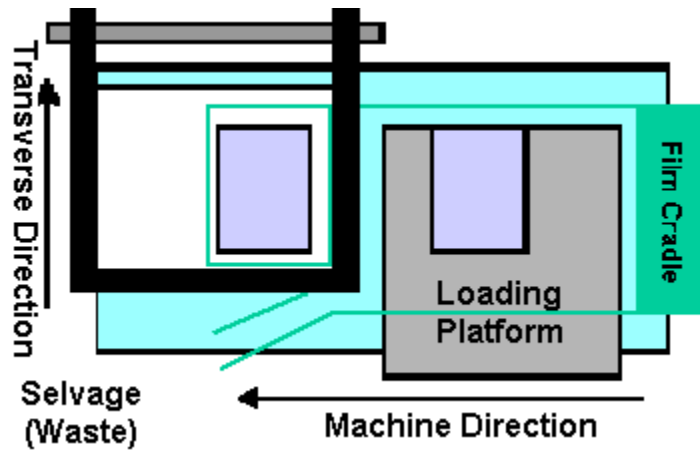
- [Wind](#)
 - [Wire Mesh](#)
-

Tap Switch

An electrical device used to control the amount of voltage introduced to sealing elements.

TD

[Transverse Direction](#)



Tear Initiation

The amount of force required to initiate a tear.

Tear Propagation (ASTM)

The amount of force necessary to spread a tear in shrink film.

Tear Resistance

The ability of a film to resist the propagation of a tear.

Teflon

Polytetrafluoroethylene (PTFE) a chemical which has a low coefficient of friction. Is used mainly as a coating to reduce the buildup on sealing knives. Solid Teflon tubing is used on some [Shrink-Tunnel](#) conveyor rollers.

Teflon Covered Rollers

A steel roller which is covered with a [Teflon](#) Tubing. The Teflon insulates the package from the heated steel during the passage through the Shrink Tunnel. Teflon has a longer life expectancy than [Silicone Covered Rollers](#). They are supported by chains on each end. The chains require frequent lubrication to keep them operating properly.

Teflon Mesh

A type of Shrink Tunnel [Conveyor](#) that is made of Fiberglass coated [Teflon](#). The Teflon mesh is supported on each end by rollers, one is a Drive roller the other an Idler. There is very little maintenance needed with this type of conveyor.

Temperature (seals)

Refers to the actual heat imparted into the [Shrink Film](#) by the Seal Bar.

Temperature (tunnel)

Refers to the degree of heat inside the chamber of the [Shrink Tunnel](#).

Tensile Strength (ASTM)

The amount of force required to sever a sample of shrink film. A strong indication of a film's toughness.

Thermoplastic

A plastic which can be repeatedly softened and reshaped by heat and pressure.

Thermoset

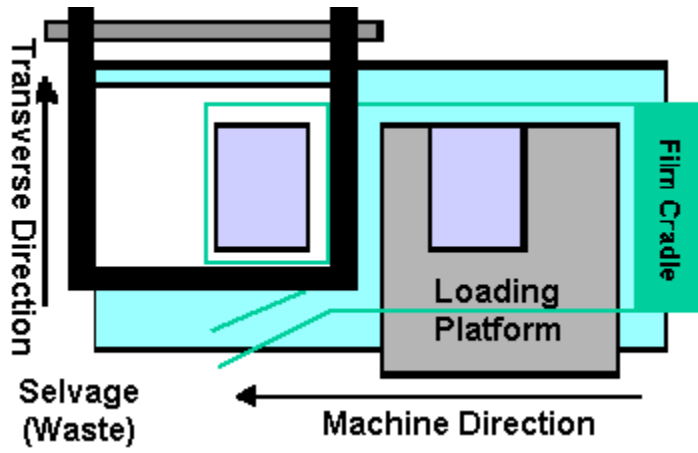
A plastic which cannot be resoftened after being subjected to heat and pressures.

Time (seal)

Refers to the total time the seal bar makes contact with the [Seal Pad](#).

Transverse Direction

The direction parallel to the film width.



Trim

The amount of excess film severed during the sealing process.

Trim Seal

A seal made by using a sealing wire element.

True Dwell

Refers to the time the seal bar remains closed after completion of the wire heating cycle. The goal of dwell is to have the seal bar hold the molten seal in position until the weld has had time to cool and solidify.

Ultra-High Molecular Weight (UHMWPE)

Has a molecular weight greater than 3,000,000-g/ mole. This provides improved impact resistance, and abrasion resistance. It is difficult to process because of its high viscosity in the melt.

Unbalanced

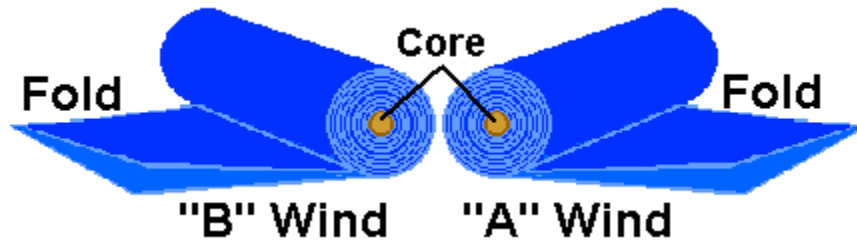
Unequal orientation in the [MD](#) and [TD](#).

Unrestrained Shrink (ASTM)

Determines the amount of uninhibited shrink potential, shown as a percentage, a film sample has at a specific temperature. This test is a gauge of a film's ability to conform to a package.

Wind

The direction in which the film is wound on the core.



Wire Mesh

A type of Shrink Tunnel [Conveyor](#) that is made of steel. There are many different styles, but all work in the same fashion. The wire mesh is supported on each end by rollers, one is a [Drive Roller](#) the other an Idler. There is very little maintenance needed with this type of conveyor.

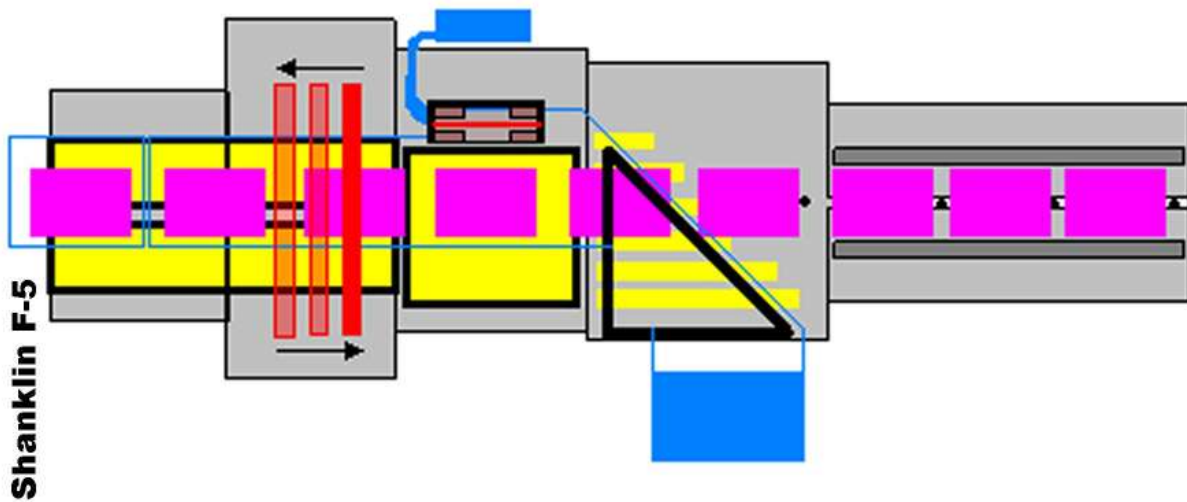
Automatic

An automatic sealer is designed so that packages travel into the sealer without operator assistance, are overwrapped, and exit in a continuous motion. A wide range of manufacturers make a variety of different types: Side Sealing, FFS, Bottom Sealing, and Crimp Sealing.

Jump to [Shrink Tunnel](#)

Jump to [L-Bar Sealer](#)

Jump to [Automatic L-Bar](#)



Intertape Polymer Group

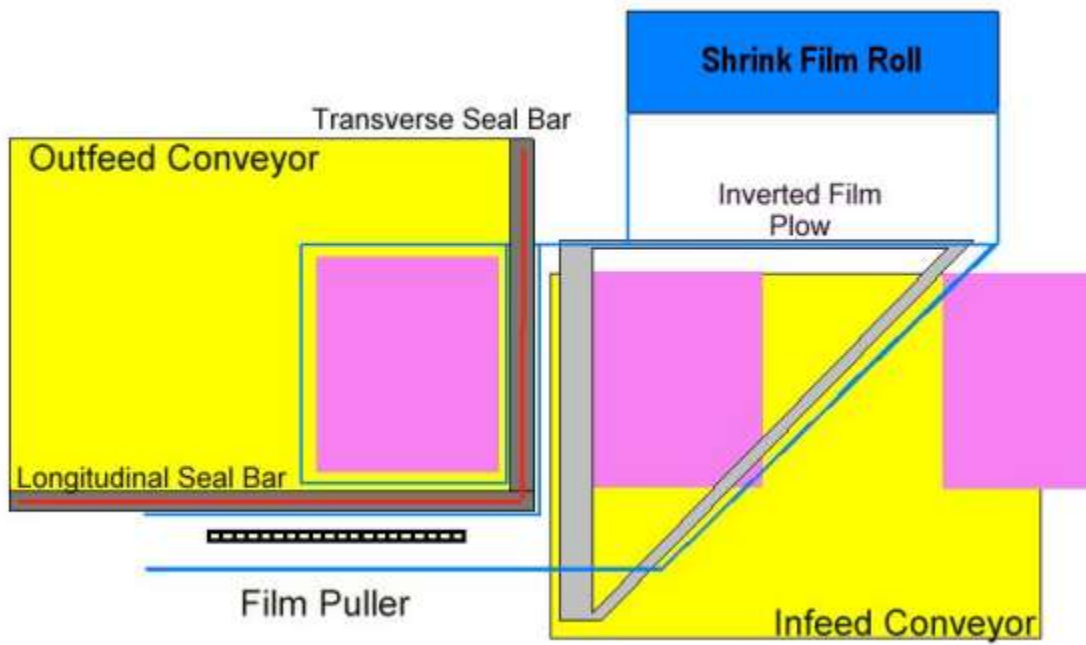
Automatic L-Sealer

Is designed to run automatically without the aid of an operator to load packages. The film carriage is at a 90 degree angle to the infeed conveyor. This allows packages to feed directly into the [Inverting Forming Plow](#). The outfeed conveyor transfers the package from the infeed conveyor to the sealing area. The conveyor stops during the sealing cycle. Many different Sealing Systems are available for this type of sealer.

Jump to [Shrink Tunnel](#)

Jump to [L-Bar Sealer](#)

Jump to [Automatic](#)



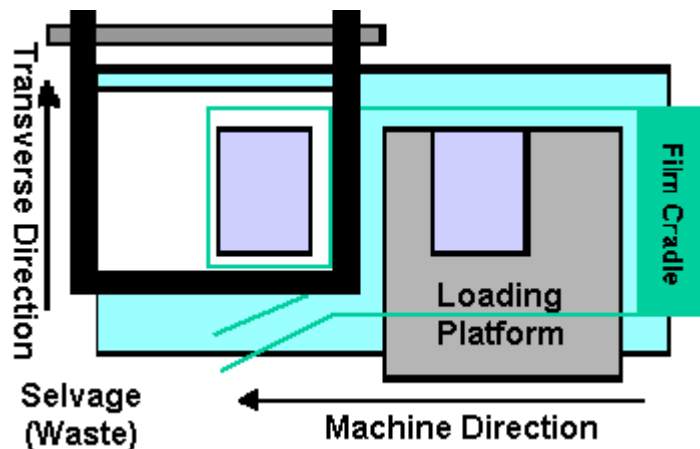
L-Bar Sealer

The L-Bar is the most basic shrink film sealer. It has two sealing bars, one in the [Machine Direction](#) and one in the [Transverse Direction](#). The Film lays on the [Film Cradle](#). The [Center Folded](#) film is separated by the [Loading Platform](#). The [TD](#) seal bar makes a seal in the back of one package and the front of the next. The [MD](#) seal bar seals the side and severs the waste (selvage). Packages are fed into the sealing area by hand or a mechanical device. The seal bars are brought down onto the [Seal Pad](#). Once the [Sealing Cycle](#) is completed the package is sent through the Shrink Tunnel to complete the process.

Jump to [Shrink Tunnel](#)

Jump to [Automatic L-Bar](#)

Jump to [Automatic](#)



Intertape Polymer Group

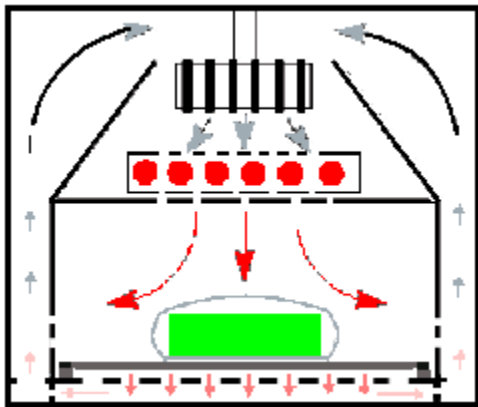
Shrink Tunnel

The Shrink Tunnel is comprised of three basic elements: recirculating fan, heater, and conveying system. Depending on the package size, the tunnel is more important than the sealer. A good rule of thumb is a shrink tunnel three times the length of the package. Although this is not always possible, a tunnel that is too long will always work, but one too short will not yield pleasing packages.

Jump to [L-Bar Sealer](#)

Jump to [Automatic L-Bar](#)

Jump to [Automatic](#)



Intertape Polymer Group

Exlfilm Shrink Films

Exlfilm™ multi-layered polyolefin shrink films are manufactured in compliance with FDA standards for direct contact with food. Exlfilm™ shrink films are available in a wide choice of gauges, widths and film designs, including:

[HSP](#)

[QSL](#)

[Plus](#)

[PlusGPS](#)

[PlusLTG](#)

Intertape Polymer Group



High Speed Film

Performance Features:

- Exceptional Tensile Strength & [Tear Resistance](#)
- High [Slip](#)
- Consistently Strong Seals
- Excellent [Optics](#)
- High Percent of Shrinkage
- FDA Approved
- 100% Recyclable

Available in 45, 60, 75, & 100 gauge.

For more information go to www.intertapepolymer.com

[HSP](#)

[QSL](#)

[Plus](#)

[PlusGPS](#)

[PlusLTG](#)

Intertape Polymer Group



Quick Shrinking Hot Slip Film

Performance Features:

- Maximum Slip Performance
- Excellent Optics
- High Speed Performance
- Consistently Stronger Static Seals
- Reduces Downtime
- Exceptional Tensile Strength & Tear Resistance
- High Percent of Shrinkage

Available in 45, 60 & 75 gauge.

For more information go to www.intertapepolymer.com

[HSP](#)

[QSL](#)

[Plus](#)

[PlusGPS](#)

[PlusLTG](#)

Intertape Polymer Group



Superior Performance Film

Performance Features:

- Application Friendly
- [Crosslinked](#) Technology
- Maximum Shrinkage for Superior Product Conformity
- Outstanding Clarity
- Excellent [Hot Slip](#)
- Exceptional Tensile Strength & [Tear Resistance](#)
- Complies with FDA Standards

Available in 60, 75, 100, 125, & 150 gauge.

For more information go to www.intertapepolymer.com

[HSP](#)

[QSL](#)

[Plus](#)

[PlusGPS](#)

[PlusLTG](#)

Intertape Polymer Group



Global Performance [Shrink Film](#)

Performance Features:

- Wide Window of Operation
- [Crosslinked](#) Technology
- Superior Sealing Performance
- Higher Shrink Force
- Complies with FDA Standards

Available in 45, 60, 75, 100, & 125 gauges

For more information go to www.intertapepolymer.com

[HSP](#)

[QSL](#)

[Plus](#)

[PlusGPS](#)

[PlusLTG](#)

Intertape Polymer Group



Cross-linked multi-layer product available in 45 gauge. This General purpose low gauge film is the strongest shrink film in its class.

Performance Features:

- Application Friendly
- [Crosslinked](#) Technology
- Maximum Shrinkage for Superior Product Conformity
- Outstanding Clarity
- Excellent [Hot Slip](#)
- Exceptional Tensile Strength & [Tear Resistance](#)
- Complies with FDA Standards

For more information go to www.intertapepolymer.com

[HSP](#)

[OSL](#)

[Plus](#)

[PlusGPS](#)

[PlusLTG](#)

Intertape Polymer Group

Package Sizing

The formulas for determining the film width needed can be a little overwhelming. The PakSize program helps to calculate this size¹. If you would like to see the actual formulas, follow these steps.

Width (Select Sealer Type):

[Manual & Semi-Automatic](#)

[Automatic](#)

[Automatic FFS](#)

[Cutoff Formula](#)

[Roll Length](#)

[Parts per Roll](#)

[Cost Per Part](#)

[Pounds per Roll](#)

Intertape Polymer Group

¹ Please consult your equipment's Operating Manual for proper film sizing for your equipment. These formulas are provided as a guide to assist with determining Film Size. Your actual film size required may differ depending on your application

Cost Per Part

Cost Per Roll (Inch Price x Width) / [Parts per Roll](#)

[Back](#)

Intertape Polymer Group

Cutoff Formula

Bag Length

Package Height	Formula
0" to 2.5"	$L + H + 1"$
2.5" to 4.5"	$L + H + 1.5"$
4.5" - up	$L + H + 2"$

[Back](#)

Intertape Polymer Group

* Please consult your equipment's Operating Manual for proper film sizing for your equipment. These formulas are provided as a guide to assist with determining Film Size. Your actual film size required may differ depending on your application

Film Width (Automatic)

Package Height	Formula
0" to 3"	$W + H + 4"$
3" to 6"	$W + H + 4.5"$
6" - up	$W + H + 5 - 6"$

[Back](#)

Intertape Polymer Group

* Please consult your equipment's Operating Manual for proper film sizing for your equipment. These formulas are provided as a guide to assist with determining Film Size. Your actual film size required may differ depending on your application

Film Width (FFS)

Package Size

ALL

Formula

$H + W + 1.5''$

Width is measured parallel to the seal bar, across the package.

[Back](#)

Intertape Polymer Group

* Please consult your equipment's Operating Manual for proper film sizing for your equipment. These formulas are provided as a guide to assist with determining Film Size. Your actual film size required may differ depending on your application

Film Width (Manual, Semi-Auto)

Package Height	Formula
0" to 2.5"	$W + H + 2"$
2.5" to 4.5"	$W + H + 2.5"$
4.5" - up	$W + H + 3"$

[Back](#)

Intertape Polymer Group

* Please consult your equipment's Operating Manual for proper film sizing for your equipment. These formulas are provided as a guide to assist with determining Film Size. Your actual film size required may differ depending on your application

Roll Lengths

	45 Gauge	60 Gauge	75 Gauge	100 Gauge	125 Gauge
Single Wound	11,660	8,750	7,000	5,250	4,200
Center Folded	5,830	4,375	3,500	2,625	2,100

Multiply the above numbers by 2 for double roll length film.

[Back](#)

Intertape Polymer Group

* Please consult your equipment's Operating Manual for proper film sizing for your equipment. These formulas are provided as a guide to assist with determining Film Size. Your actual film size required may differ depending on your application

PakSize

PakSize is used to help calculate the width of film need for a specific package. It also automatically calculates the following:

Roll Footage, Bag Length, Cost per Package, Waste Cost, Roll Weight, etc..

Intertape Polymer Group

User Preferences

Distributor - Company Name

Representative - Your Name

Registration - The number you were given when you registered PakSize.

(You must register to activate the auto pricing)

Default Package Length - Default value for the package LENGTH ([MD](#))

Default Package Width - Default value for the WIDTH ([TD](#))

Default Package Height - Default value for the package Height

Default Film Gauge - Default value for the FILM Gauge

Default CF/SW - Default value for the FILM FOLD

Default Sealer- Default value for the SEALER be used

Default Film Cost - Default value for FILM COST

Auto Price % Increase - A value set here raises or lowers the cost

Inch Price - Check to set the INCH PRICE as default

Roll Price - Check to set the ROLL PRICE as default

<< __ >> - A number here raises or lowers the ROLL WIDTH calculated

Canadian pricing - Check here to use Canadian pricing

Hide Deviation Box - Check here to hide/unhide the deviation box on main form

Change Background Color - Click here to change the background color on all forms

Intertape Polymer Group

Parts per Roll

[\(Roll Length\(ft.\) x 12\) / Bag Length\(in\)](#)

[Back](#)

Intertape Polymer Group

* Please consult your equipment's Operating Manual for proper film sizing for your equipment. These formulas are provided as a guide to assist with determining Film Size. Your actual film size required may differ depending on your application

Pounds per Roll

Width x 2.1 = Roll weight

[Back](#)

Intertape Polymer Group

* Please consult your equipment's Operating Manual for proper film sizing for your equipment. These formulas are provided as a guide to assist with determining Film Size. Your actual film size required may differ depending on your application

Sealing Systems

The following gives a brief explanation of some of the types of sealing bars used on different machinery.

Jump to [Wire Seal](#)

Jump to [Solid Bar](#)

Jump to [One-Piece Insert](#)

Jump to [Three-Piece Insert](#)

Jump to [Wide-Fin](#)

Jump to [Cool Cut](#)

Jump to [Reynolds Seal Bar](#)

Intertape Polymer Group

Cool Cut

Temperature controlled three piece seal bar. Was designed to run mainly polyethylene films. The cutting blade does not make contact with the film until after the sealing process is near completion. The blade is serrated with no [Teflon](#) coating. Designed for [Polyethylene](#) bundling film.

Jump to [Wire Seal](#)

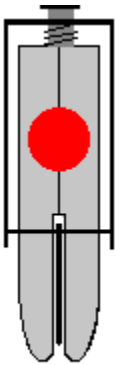
Jump to [Solid Bar](#)

Jump to [One-Piece Insert](#)

Jump to [Three-Piece Insert](#)

Jump to [Wide-Fin](#)

Jump to [Reynolds Seal Bar](#)



Intertape Polymer Group

One-Piece Insert

Temperature controlled solid bar with a single insert. Basically the same profile design as the Solid Knife, but with a replaceable blade. The knife is generally aluminum with a teflon coating.

Designed for most Shrink Films

Jump to [Wire Seal](#)

Jump to [Solid Bar](#)

Jump to [Three-Piece Insert](#)

Jump to [Wide-Fin](#)

Jump to [Cool Cut](#)

Jump to [Reynolds Seal Bar](#)



Intertape Polymer Group

Reynolds(tm) Seal Bar

A temperature controlled solid bar with a variety on exchangeable inserts. There is a specific insert for most films: Mushroom - [PVC](#), Arrowhead - [Polyolefin](#), Single Knife - [Polyethylene](#) ([bundling](#) film).With different inserts this bar can be used with all films.

Jump to [Wire Seal](#)

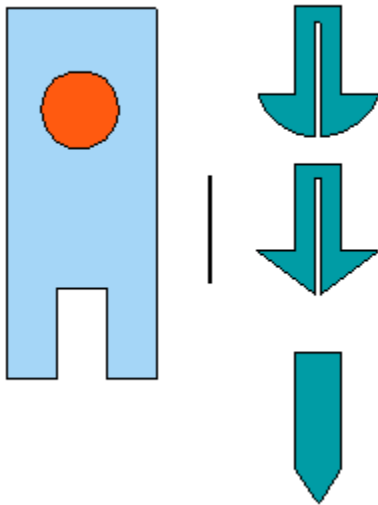
Jump to [Solid Bar](#)

Jump to [One-Piece Insert](#)

Jump to [Three-Piece Insert](#)

Jump to [Wide-Fin](#)

Jump to [Cool Cut](#)



Intertape Polymer Group

Solid Bar

Temperature controlled one piece bar. This is the original hot knife design. The knife is formed from a single piece of metal, most commonly steel. Available with different coatings to aid seal quality and reduce buildup. The pressure of the seal bar onto a sealing surface ([seal pad](#)) cuts and seals the film. Can be used on most [Shrink Films](#)

Jump to [Wire Seal](#)

Jump to [One-Piece Insert](#)

Jump to [Three-Piece Insert](#)

Jump to [Wide-Fin](#)

Jump to [Cool Cut](#)

Jump to [Reynolds Seal Bar](#)



Intertape Polymer Group

Three-Piece Insert

Temperature controlled solid bar with two sealing surfaces sandwiching a single cutting edge. The sealing surfaces weld the film while the cutting edge severs the film.

Designed for [Cross-Linked](#) Shrink Films.

Jump to [Wire Seal](#)

Jump to [Solid Bar](#)

Jump to [One-Piece Insert](#)

Jump to [Wide-Fin](#)

Jump to [Cool Cut](#)

Jump to [Reynolds Seal Bar](#)



Intertape Polymer Group

Wide-Fin

Temperature controlled three piece bar. Two solid bars, [Teflon](#) coated, make up the body of the seal bar. A single cutting edge is located between the sealing surfaces. The wide sealing surfaces yield a very wide and strong seal, while the cutter severs the film. Designed for [Cross-Linked](#) Shrink Films.

Jump to [Wire Seal](#)

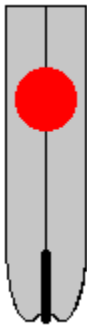
Jump to [Solid Bar](#)

Jump to [One-Piece Insert](#)

Jump to [Three-Piece Insert](#)

Jump to [Cool Cut](#)

Jump to [Reynolds Seal Bar](#)



Intertape Polymer Group

Wire Seal

Seal wires are made of [Nichrome](#) wire. Heat is generated as current flows through the wire. As pressure and heat are applied to the film, a seal and cut are made.

Can be used on all [Shrink Films](#).

Jump to [Solid Bar](#)

Jump to [One-Piece Insert](#)

Jump to [Three-Piece Insert](#)

Jump to [Wide-Fin](#)

Jump to [Cool Cut](#)

Jump to [Reynolds Seal Bar](#)



Intertape Polymer Group

