



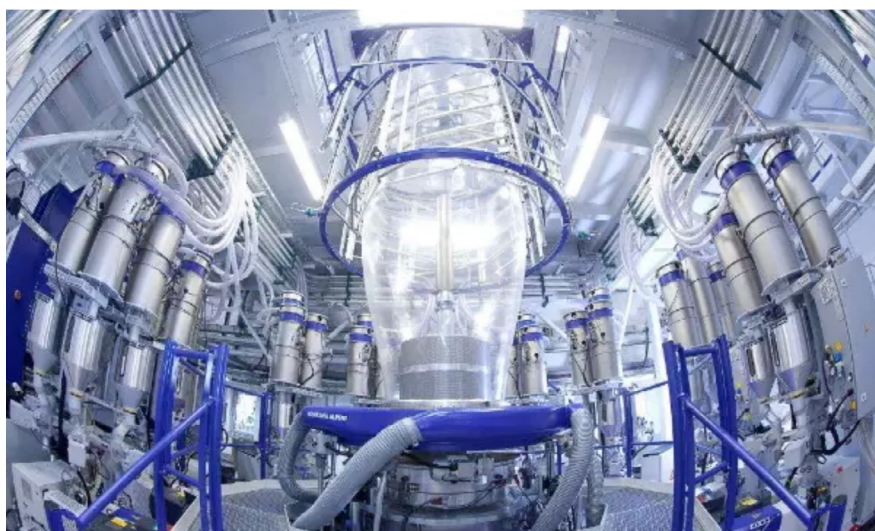
PALLET WRAPPING GUIDE STRETCH FILM & PALLET WRAP

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This pallet wrapping guide is designed to help everyone who wants to improve their pallet wrapping performance; whether they want to optimise operational efficiency, increase load stability and safety, reduce costs, minimise the amount of pallet stretch wrap they use – or all the above...

WHAT IS PALLET WRAP?

Blown film is created by blowing air through molten plastic to create a huge 'balloon'. As the balloon cools it creates a film that is then converted into rolls. The thickness of the film can be controlled during manufacture by regulating the quantity of plastic injected and the flow rate of the air. The picture below illustrates this process in action:



Cast film, is created by injecting melted polymer (i.e. plastic) horizontally through a flat die to create a sheet of material, which is then pinned to a chilled roller by an air curtain or vacuum. Further rollers are used to cool the film, before it is trimmed and loaded onto rolls. The latest cast films are created using multiple layers of plastic, all with slightly different properties, which combine to optimise the performance of the film. Best-in-class films multi-layer cast films provide a very high holding force, great puncture resistance and excellent optical clarity. Despite their many layers these film are still ultra-thin, and can be as little as 10µ thick (that's 10/1000 of a mm...) even before they are stretched. The latest generation of cast films are created using Nano technology and are sometimes referred to as nano films.

WHEN SHOULD I USE PALLET WRAP?

At time of writing, properly applied pallet wrap is by far the most effective way of protecting goods on pallets and providing reliably compliant load stability during transit, handling and storage. This really matters, because unstable loads in transit are the cause of an estimated quarter of all traffic accidents involving transport vehicles. In recent years there has been a great deal of investment in the development of highly effective stretch film and pallet wrapping machines. Pallet wrapping has therefore now replaced

plastic strapping in a large number of applications as it is generally cheaper and easier to apply than plastic strapping. It also provides equal or better load stability in many applications – with market leading films being specifically designed to meet the requirements of the EUMOS 40509 Load Rigidity Legislation for Cargo Transportation. If an organisation is shipping or storing products on pallets, it is therefore very likely that they are using pallet wrap in one form or another.

WHAT IS PALLET WRAP?

There is a bewildering variety of pallet wrap available on the market, so users may well wonder how to navigate the range on offer. The first subdivision of hand pallet wrap and machine film is pretty self-explanatory. Beyond that, standard pallet wrap is often referred to a stretch film, as it needs to be stretched on the pallet in order to deliver the desired level of load stability. However pre stretched film is also now available. As the name suggests this has been pre stretched after manufacture, often taking it down to a thickness of just 6mu. The idea of this film is that it does not require extensive stretching on the pallet in order to ensure load stability, which makes it highly effective in a large number of applications.

Ultimately, the choice of pallet wrap will depend on a number of variables, the most important being:

- Number of pallets wrapped
- Product being wrapped
- Weight of pallets
- Labour availability

OUR EXPERIENCED CONSULTANTS CAN HELP YOU TO SELECT THE MOST EFFECTIVE PALLET WRAPPING PROCESS, EQUIPMENT AND PRODUCTS.

They can even show you detailed ROI (return on investment) calculations – including calculations showing the cost of wrapping each pallet – in order to help in the decision-making process. Just get in touch by calling us on 0113 2426999, or emailing at wecare@hazel4d.com.

Pallet wrapping machines loosely fit into 2 categories – Core Brake machines and Power pre stretch machines. Core brake machines work in a very similar way to hand wrapping, the film is held on a spool and as it is applied to the pallet the film is pulled from the roll and applied directly to the pallet. The stretch is applied solely by the tension produced between the film head and the pallet. Electric powered pre stretch pallet wrapping machines use machine film, which is stretched in the head of the machine using geared rollers (a series of rollers moving at different speeds) to stretch the film before applying it to the pallet, a second stretch is often then produced by controlling the tension of the film between the machine head and the pallet. There are a number of variants of pallet wrapping machines in both varieties, with the most common being:



TURNTABLE MACHINES

The turntable pallet wrappers are the most common variety, pallets are loaded onto a turntable which spins around whilst the film head moves up and down, wrapping the pallet as it does so. These machines are very versatile and can be used in most situations where pallets are loaded using forklift trucks, LLOPS and pumped pallet trucks. The disadvantage is that to a greater or lesser degree, the machines have a turntable base that requires a ramp to enable access, or requires extensive civil works to sink it into the warehouse floor and due to this there are a few situations where a rotary arm or robot machine can be a preferred option. Turntable machines are available in both Core Brake and Power Pre stretch options.



ROTARY ARM MACHINES

Rotary arm pallet wrappers use a rotating arm that circles the pallet whilst carrying the machine film head with it, the pallet stand still, whilst the head wraps by circling the pallet. The key advantage with these machines are that there is no ramp or incline that the pallet needs to travel up, and also the machines tend to have a smaller footprint – making them an attractive option where space is very tight. Rotary arm machines are available in both Core Brake and Power Pre stretch options.



ROBOT PALLET WRAPPERS

Robot wrappers are highly mobile pallet wrappers that can be taken to the pallet and will wrap in the same way as a human would wrap a pallet. They are particularly useful where pallets need to be wrapped in a variety of locations, or where stacked pallets are too unstable to move before being wrapped, or where pallets are oversized or unusually shaped as the machine follows the size of the base of the pallet. Robot wrappers are becoming increasingly popular due to their versatility. They are typically a little slower than a turntable wrapper and are mainly manufactured as Power Pre stretch machines.



INLINE PALLET WRAPPER

Inline machines pallet wrapping machines are designed for use in a fully automated production line, and usually sit at the end of the line as the final process in the automation before the product is shipped. Inline machines can be Turntable, Rotary Arm, or Ring wrappers, the choice being made according to the budget and the speed required. Click this link to see a video of a fully inline machine in action.



If you are wrapping 30 or more pallets per day, then it may well be worth considering installing a pallet wrapping machine as the savings in cost-per-pallet-wrapped will usually provide a positive return on investment in well under twelve months. What's more the load stability of the pallet will be significantly improved and the quantity of plastic used significantly reduced in comparison with hand wrapping.

However, if you're considering installing a pallet wrapping machine it's essential that you engage with a company with the ability to provide both machine and film, in order to ensure that the 2 are working seamlessly together and both fully optimised. This is the only way to be confident of ensuring you have the most efficient pallet wrapping cycle, and achieving your target holding force and cost and waste savings.

HOW DO I CHOOSE THE RIGHT PALLET WRAPPING SOLUTION FOR ME?

Every pallet wrapping situation is different and has its own challenges and nuances, and the variety of options on the market can be quite confusing. When making a choice, the main points to consider are:

1. Load stability. Will my load stay on secure and safe on its pallet from the time it is wrapped until the time it's un-wrapped, however it is treated during handling, transit and storage?
2. How much will it cost me to wrap each pallet, once I've taken all costs into consideration?
3. Plastic waste. How much single-use plastic will I need to use to wrap a pallet?
4. How long will it take me to wrap each pallet?