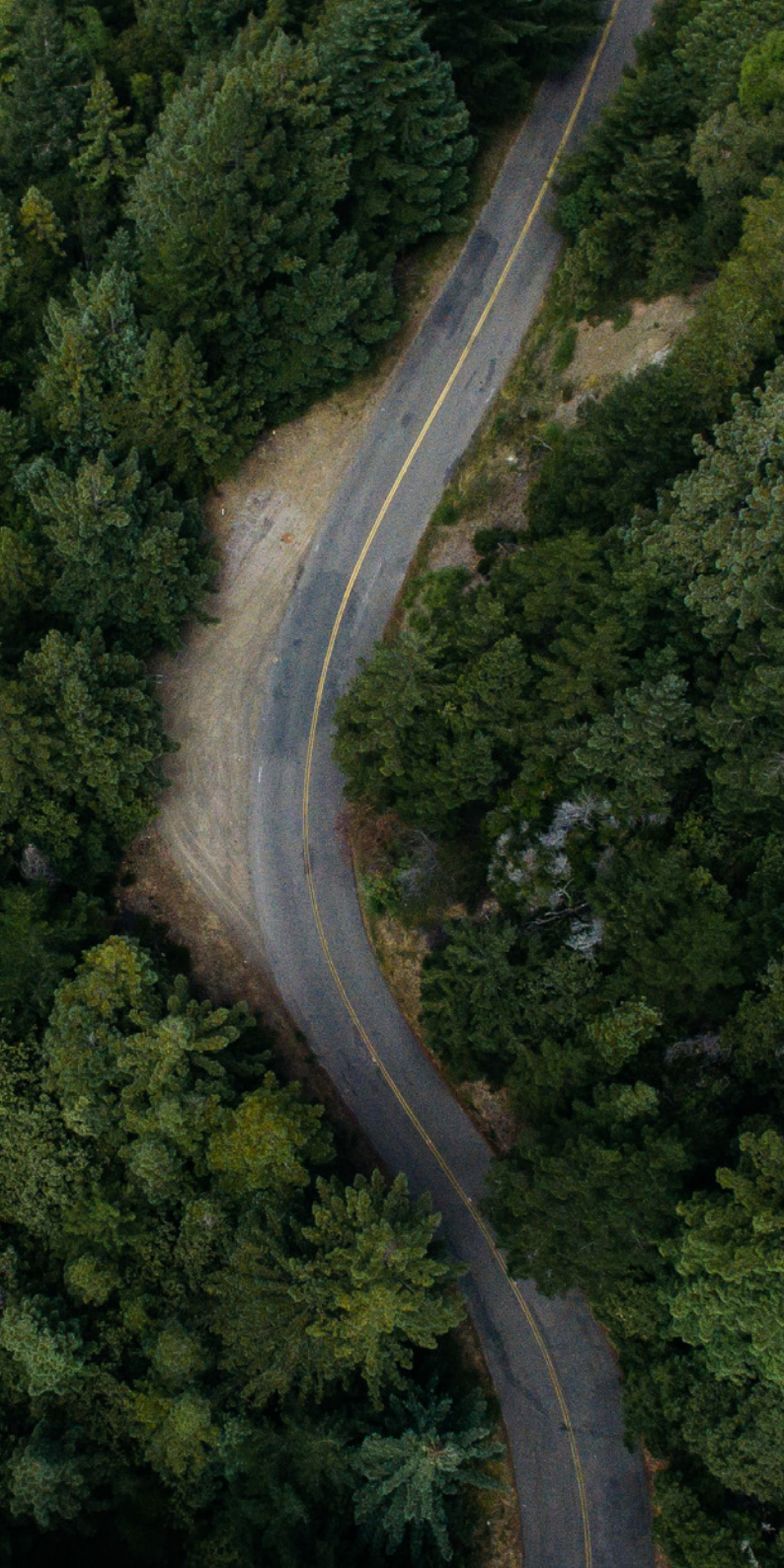


A man and a woman are shown in a gym setting, using black stretch film for exercise. The woman, on the left, has blonde hair and is wearing a black sleeveless top. The man, on the right, is wearing a grey tank top. They are both holding and pulling on the black stretch film, which is draped over their shoulders and arms. The background is a bright, out-of-focus gym environment with large windows.

Smart stretch film solutions for your business



About Trioworld

At Trioworld we are convinced plastic can make the world safer and healthier for everybody.

We are committed to making plastic a part of a sustainable society and continuously work on strengthening our sustainable product portfolio, specifically focusing on increased use of recycled materials and reduced consumption of raw material.

Sustainability is a top priority and an integral part of everything we do.

Trioworld Re-thinking Plastic

Stretch film or safety film?

The main purpose of stretch film is to wrap pallet loads in a safe and stable manner, so that the products arrive at their final destination undamaged and personal injury is prevented.

Safety and your responsibility as a sender are highlighted in the EU directive on cargo securing, EU 2014/47. EUMOS [**EUROPE MOVE IT SAFE**] contributes to the interpretation, application and implementation of the EU directive. Trioworld is an expert partner of EUMOS.

What do I need to do to meet the new requirements?

To ensure sufficient load unit stability, you must have the right type of stretch film and machinery settings according to your type of goods. Once the load unit stability has been securely mounted, no settings may be changed without a new load unit stability check. As the market leaders in high performance stretch film, Trioworld can guide you to a load unit stability according to the requirements in EUMOS 40509.



One size fits all?

There is no single solution that ensures full load unit stability. Every solution has to be tested once a number of settings have been taken into account. Trioworld can help you find a solution that meets these safety requirements, and also optimises operational reliability at the lowest possible cost per pallet.

Pallet weight	Machine settings	Pre-stretch
Machinery type	Type of stretch film	Pallet appearance

Why is it important to carry out stretch film optimisation?



- | | |
|----------|---|
| 1 | Comply with EU directive 2014/47 |
| 2 | Avoid damage and waste |
| 3 | Create safe pallets and prevent personal injury |
| 4 | Optimal uptime in wrapping processes |
| 5 | Reduce costs |
| 6 | Reduce stretch film usage |
| 7 | Create sustainable solutions |

Trioworld partnership – Long term cooperation

Partnership with Trioworld means long-term cooperation and comprehensive support from Trioworld in selling stretch film solutions.



- Joint Market Approach – we will offer support in selling stretch film through physical and digital channels
- We can offer trainings in product solutions, market approach and sustainable product offering
- Commercial & Technical Service
- Quick & Consistent Delivery
- One-stop shop; extensive range of stretch film solutions
- Multiple sites and stock facilities



A proven portfolio of sustainable solutions



All our products, that contain a minimum of 25% biobased PE (polyethylene) are labeled Bio and have a low carbon footprint. An alternative to biobased feedstock is mass-balanced ISCC PLUS compliant material supporting sustainable feedstock.

Under the label Lean, Trioworld strives to reduce the amount of material used for an application, while still maintaining or even improving the performance. Using less material contributes to a lower carbon footprint.

Loop is our label for PE film that contains a minimum of 25% PCR. By using PCR, we reduce waste, lower the carbon footprint, close the material loop and drive circularity in plastics.



The Trioworld product portfolio

Loop Hand Film

Flexibility to wrap pallets whenever and wherever you need it

- High puncture resistance
- High elasticity
- 75% recycled content where of minimum 51% PCR

Loop machine film

Developed to meet requirements of both high performance and recycled content, PCR

- High puncture resistance
- High load stability
- More than 60% recycled content, whereof minimum 51% is PCR, Post Consumer Recycled

The Trioworld product portfolio

Blown stretch film – best load unit stability!

Trio Extreme®

Stretch film for the toughest requirements!

- Extreme load unit stability
- Extreme slip properties preventing pallets from sticking together
- Extreme strength with top of the line puncture and tear resistance performance
- Approved for food contact*

Trioplus®

Best choice for machines without a pre-stretch unit!

- Superior load unit stability
- Great economical and environmental benefits
- Suitable for heavy goods
- Suitable for fragile goods



Lean
Reduced
plastic

Cast stretch film – best packaging cost!

Trio Infinity®

Best consistency developed for high-speed applications

- The best load unit stability within the cast film segment
- Highest stretchability for great packaging economy
- Excellent tear and puncture resistance
- Excellent cling and slip properties
- Approved for food contact*

Trio Etex®

Great packaging economy

- High stretchability
- Excellent slip and cling properties
- Very good puncture resistance to manage goods with sharp edges
- Approved for food contact*

Trio Force

For light weight pallets in manual break machines

- Superior load unit stability
- High strength with top of the line puncture and tear resistance
- Outstanding slip properties
- Great economic and environmental benefits
- Approved for food contact*

* Approved for food contact according to EU 10/2011

Stretch Film Vocabulary

What makes a stretch film the right choice for you is determined by what type of goods you have, how they are packed and what type of stretch film machine and settings you use. The ultimate goal is to achieve a fully satisfactory and safe packaging solution that costs as little as possible. It's important to differentiate between the film's price per kg and the cost per wrapped pallet!

Using a "cheap" film often results in a higher cost per pallet. Please feel free to use Trioworld's test calculator to calculate your total cost.



Cast stretch film

The most common type of stretch film. Can be stretched up to 400% depending on thickness and quality. This type of film is suitable for use with light and medium-heavy goods.

Blown stretch film

Blown stretch film can also be stretched up to 400%, but it has significantly different load unit stability compared to a cast film. This type of film is suitable for use with heavy goods.

Pre-stretched film

This is a thinner and very strong stretch film that is well-suited for manual machines that don't have a pre-stretching unit. Pre-stretched film is available both as blown and cast film.

Pre-stretch

In a stretch film machine, the film is stretched between two or more rolls. This results in a meter of film being stretched into several meters, producing a thinner film. Pre-stretch is expressed in percentage terms.

Film tension

Between the stretch film machine and the goods, the film is slowed to produce tighter packaging. Film tension provides strength around the pallet but doesn't affect the consumption. Film tension should not be confused with pre-stretch.

Cling and slip

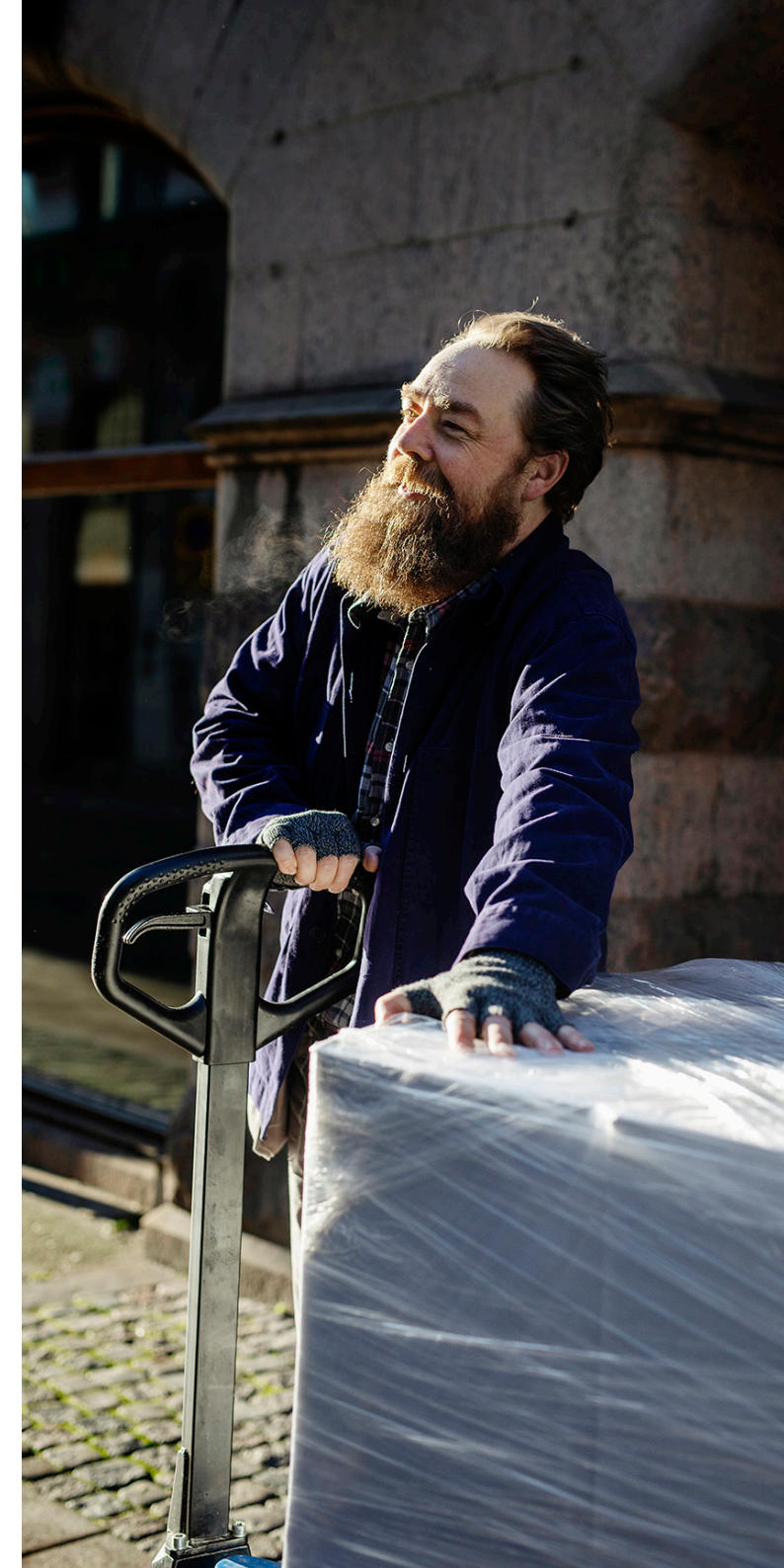
Higher quality stretch films have an outer side and an inner side with different properties. The cling or "stickiness" of the inner side means that the film is held together better and prevents the film from coming off from the goods. The film's outer side, the slip side, has a "smoothness" that prevents packaged pallets from sticking together.

Puncture resistance

This is a measure of how well the film handles sharp edges and unevenness in the goods. Higher quality stretch films have higher levels of puncture-resistance.

EU directive 2014/47 and EUMOS

The purpose of the directive is to decrease the number of traffic accidents caused by cargo transports. One part of the directive is the test method EUMOS 40509, to verify sufficient load unit stability.



Re- thinking plastic

Responsible | Leading | Together

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