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Label Academy

25 - 27 September · Chicago
LABELEXPO
AMERICAS 2018
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Shrink Sleeve Master Class

Session 1
An introduction to sleeve technology, markets and applications

Mike Fairley

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Shrink Sleeve Master Class

Introduction to master class

- What is ‘sleeve’ labeling?
- When did it start and how has it evolved?
- What does it offer?
- What applications and markets is it used in?
- How big is the market and how fast is it growing?
- What film materials are used for shrink sleeves?
- What is the process for producing shrink sleeves?
- How are they printed?
- How are they applied?
- What are the main benefits of shrink sleeves?
- What does the future hold for shrink sleeves?

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What do we understand by Sleeve Labeling?

There are three types of sleeves:

- **Stretch sleeves**
- **Machine Direction Orientated** (MDO) – which includes R.O.S.O™, roll-fed shrink or roll-applied shrink
- **Heat Shrink sleeves**

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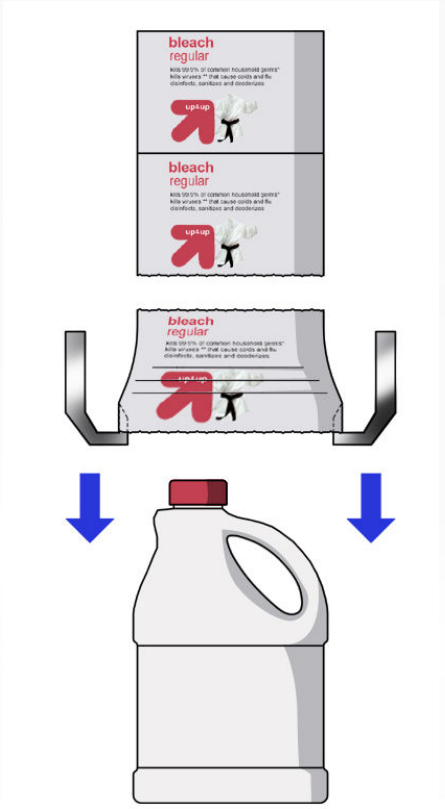
1. Stretch sleeve labeling



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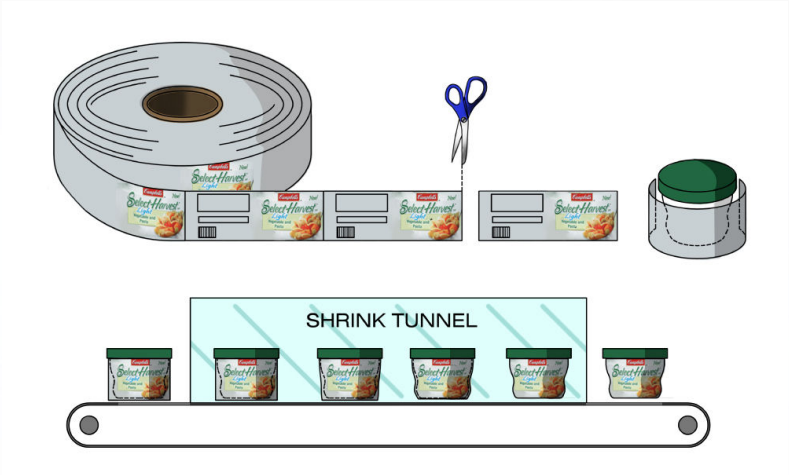
2. Machine Direction Orientated (MDO)

Roll on Shrink on (R.O.S.O™) and Roll-applied Shrink



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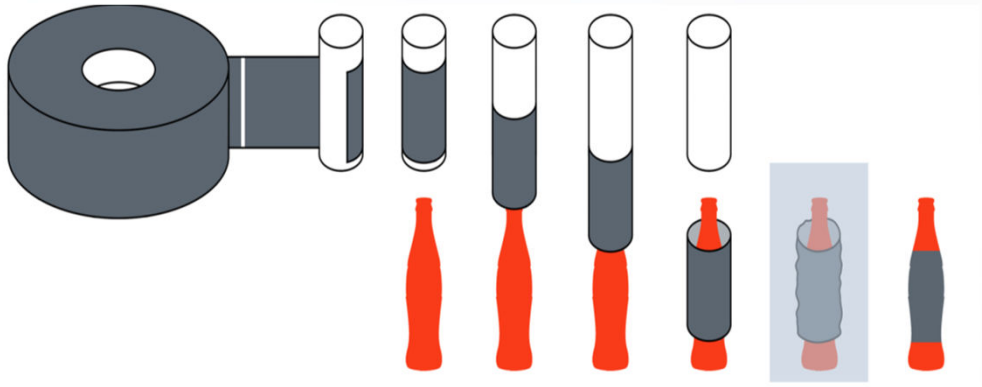
2. Machine Directed Orientation (MDO)

Roll-applied Shrink



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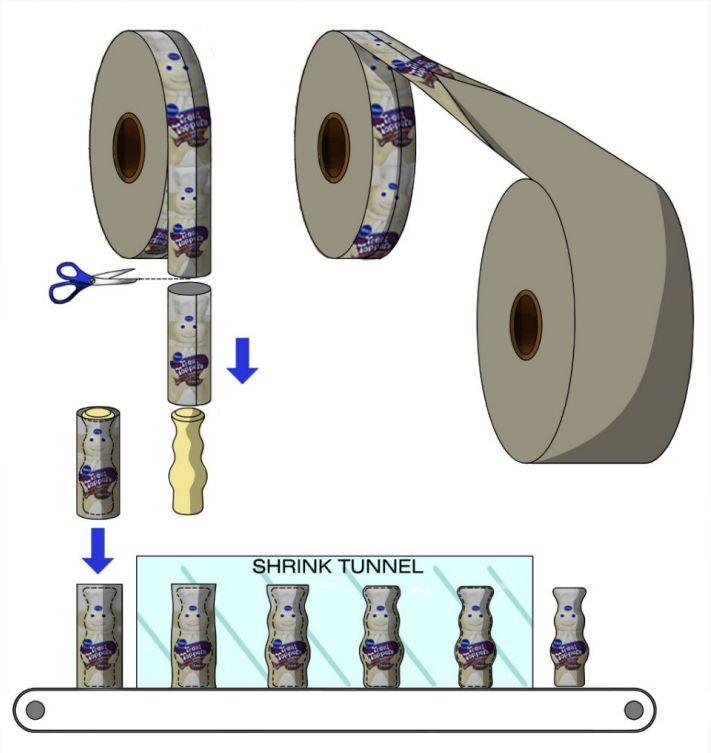
3. Heat shrink sleeve labeling



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Heat shrink sleeve labeling is by far the dominant sleeve technology

- A rapidly-growing method of product decoration
- Which uses the simple concept of the heat shrinkability of selected films
- With printing typically carried out on the inside of the film web
- The printed label web is formed and sealed into a sleeve and re-wound ready for application
- The seamed sleeve is cut to the required container shape and applied over the container – manually or automatically
- The sleeved container passes through a heated shrink tunnel and the film sleeve is shrunk to fit the container

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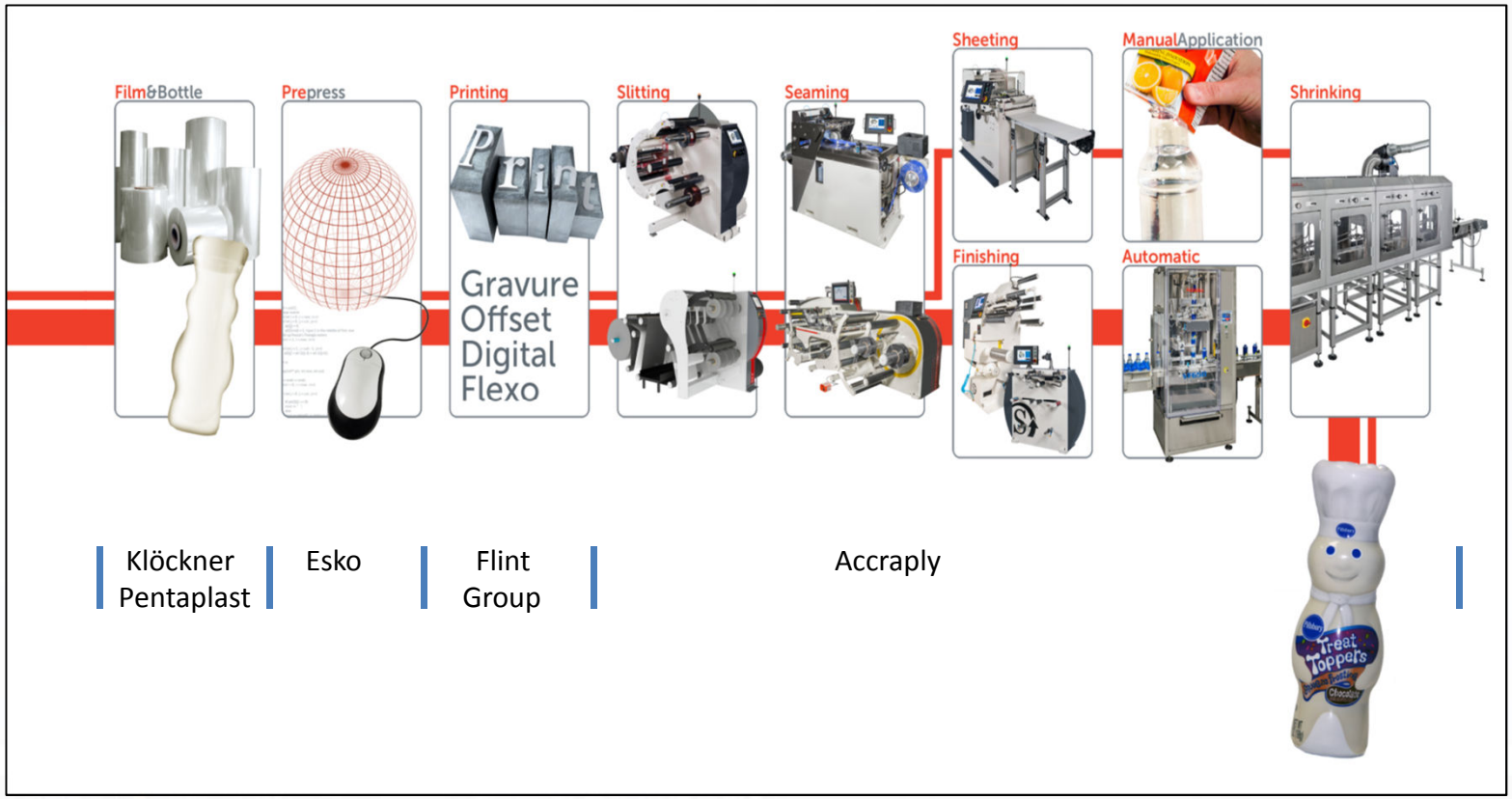

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When and where was shrink sleeve label technology invented?

Invented in Japan in 1960 by Fujio Carpentry Shop as a means of providing a new form of tamper-evidence following the change by Sake from wooden barrels to glass bottles.

This change lead to the introduction of the first tamper-evident seals using PVC film

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How has heat shrink sleeve label technology evolved since its introduction in1960?

Shrink sleeve timeline

- **1965** – First use of shrink sleeves as labels by Fuji Carpentry Shop
- **1967** - Fujio Carpentry Shop changes its name to Fuji Seal Company
- **1970s** – Shrink sleeves started to be used in Europe for promotional twin packs
- **1980s** – Japan introduces single product shrink sleeves to Europe and North America.
- **Mid 1980s** - Large-scale entry of shrink sleeves into the packaging market
- **1995** – First full length sleeving of narrow neck bottles
- **1995** – First application of translucent full length shrink sleeves
- **1996** – First use of steam for sleeving
- **2003** – First ever sleeving of Coca Cola glass bottles
- **2006** – First introduction of recyclable shrink sleeves for use on PET containers

Source:Sia Consulting

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More recent evolution of heat shrink sleeve technology and the creation of new market opportunities

- Shrink sleeves started life in Japan with wide web gravure printing
- Created a massive market in high volume applications – but not suitable for small runs on wide presses
- Advances in origination and pre-press, narrow- and mid-web presses, improvements in flexo, UV inks, digital printing, and efficient lower-speed application machinery have all been creating new shorter run and promotional opportunities

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Heat shrink sleeve labeling – what does it offer today?

- High quality full body decoration with maximum branding space and consumer impact
- Decoration of complex and intricate shaped containers
- 360° all round surface decoration
- Design typically printed on the inside for printed image and container protection
- Interesting developments in surface printed sleeves
- Incorporation of tamper evidence or hidden coding

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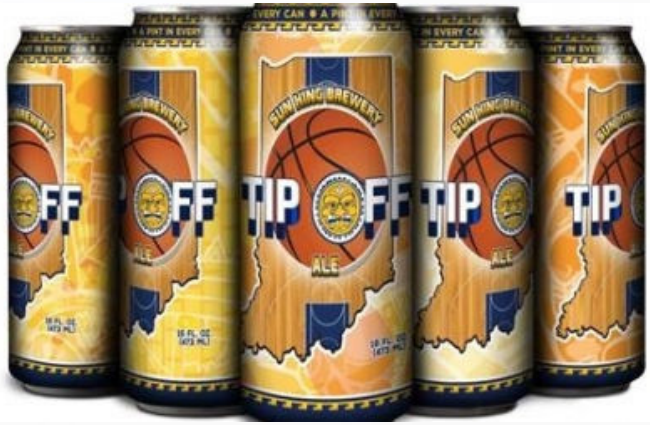
Heat shrink sleeve labeling

- Offers full body design that enables almost boundless creativity with graphics, color and impact by package designers
- Enables container and/or label to be recycled
- Provides a sleeve film that is durable, abrasion resistant and waterproof
- Enables reduced wall thickness of plastic and glass containers



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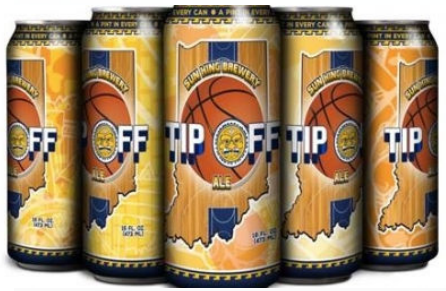
Shrink sleeve labels- where can they be seen?

Printed heat shrink sleeves have grown into a leading packaging application, specifically within the beverage, dairy and food industries, but also within other non-food sectors. Shrink sleeve labels are now seen on products as diverse as paints, detergents, cosmetics and pet foods.



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Shrink sleeve labeling

What are the main industry and market applications for heat shrink sleeve labels today?

The technology is widely used to decorate glass, plastic and metal containers

Sleeve labels by application

1. **Beverage** – Energy drinks, juices, spirits, beers
2. **Food** – Dairy products
3. **Toiletries, Health and Beauty**
4. **Household cleaning products** – Detergents, soaps, cleaning agents
5. **Pharmaceutical and Neutraceutical** – Product safety and tamper evident protection
6. **Packaged consumer goods/Retail**

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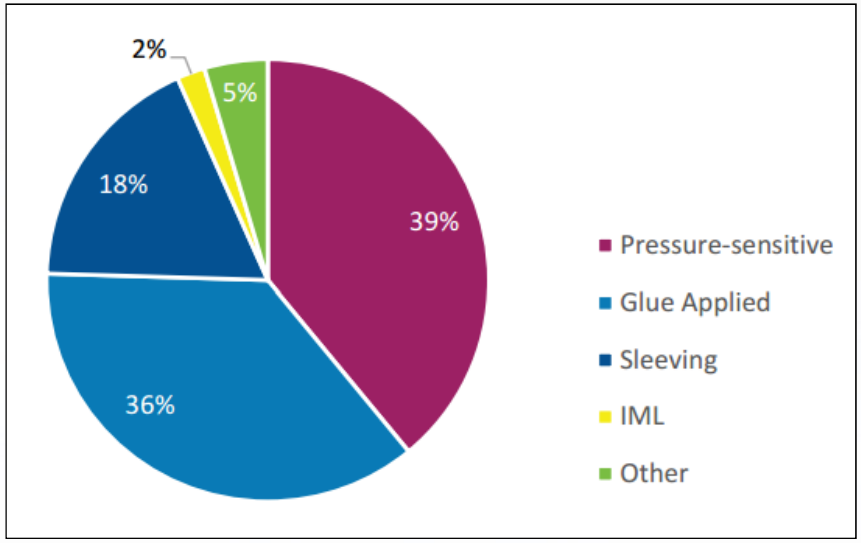
Facts and figures about the sleeve labeling market:

- Sleeve label market currently estimated at around 18% of the total world label market
- Annual growth forecast for sleeve labels at 4.5% to 6% per annum
- Growth for all types of labels forecast at 3.5%



Source: AWA Global Sleeve Label Market Study

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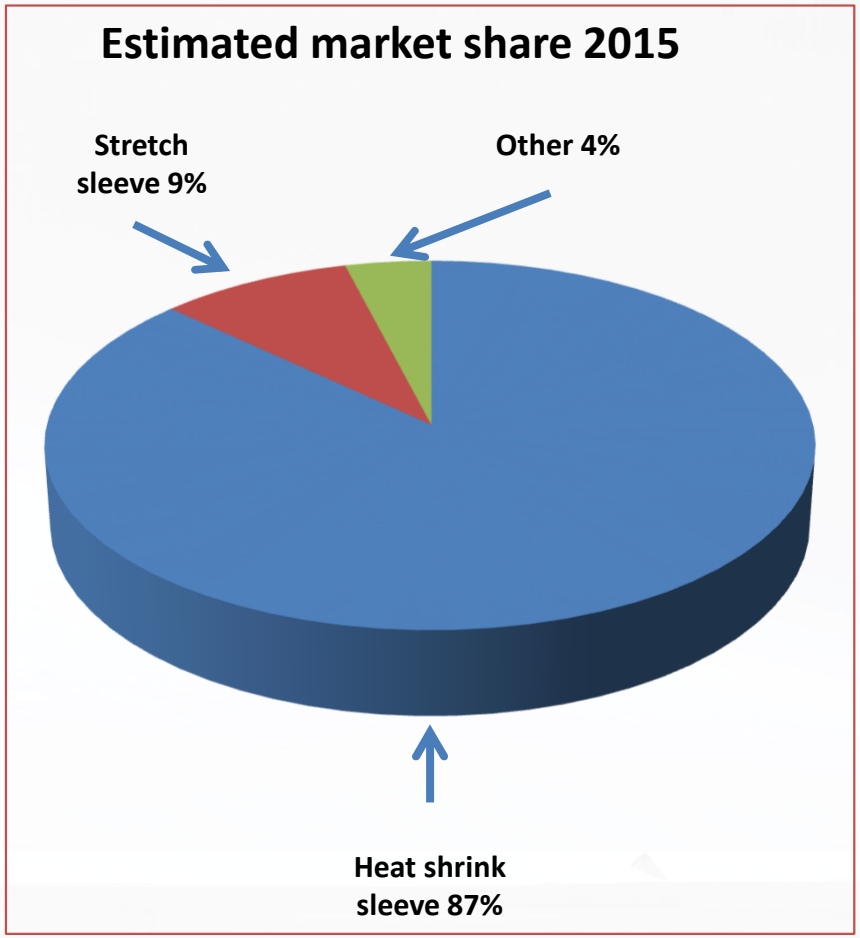
Facts and figures about the sleeve labeling market:

- Sleeve label market currently estimated at around 10,500 million square meters
- Heat shrink sleeves dominate the total sleeve labeling market
- Annual growth forecast for sleeve labels at 4.5% to 6% per annum



Source: AWA Global Sleeve Label Market Study

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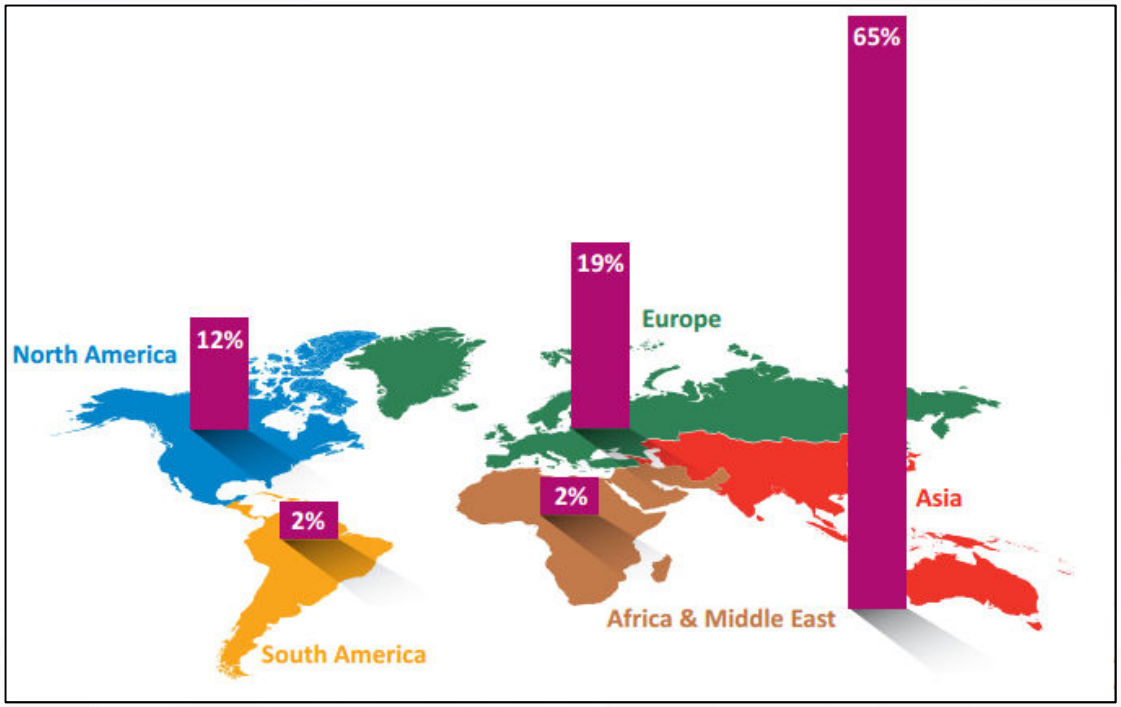
Facts and figures about the sleeve labeling market:

Where are the main global markets for sleeve labels?



The global sleeve market. Source: AWA Global Sleeve Label Market Study

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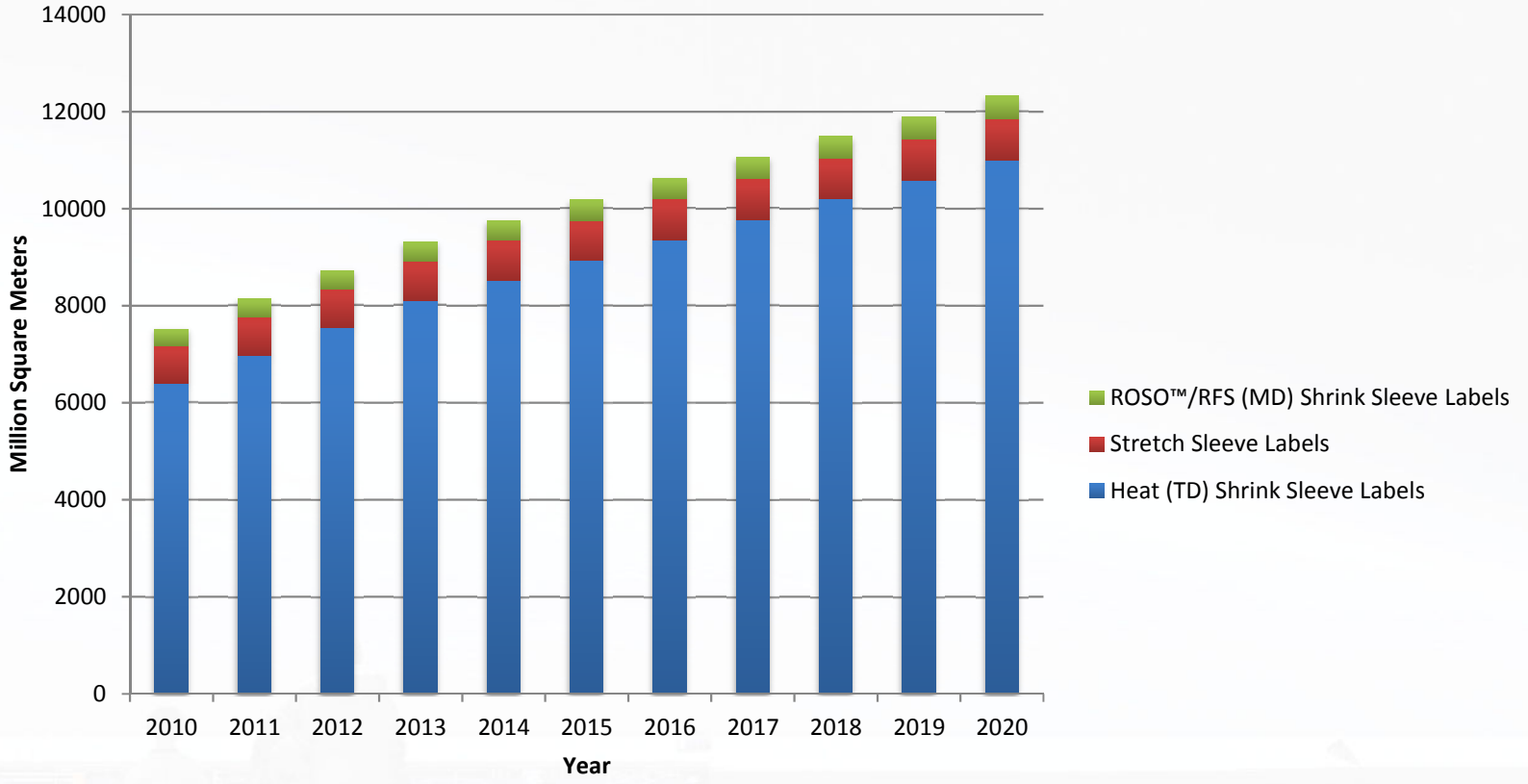
Historical and forecast growth of sleeve label market to 2020



Source: AWA Global Sleeve Label Market & Technology Review
AWA Alexander Watson Associates

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Heat shrink sleeve labeling

Now one of the fastest growing label sectors

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What are the main stages in sleeve production and application?

Key stages in sleeve production

1. Origination and pre-press
2. Web-fed printing of film
3. Slitting web to label width
4. Forming slit web into a tube and seaming
5. Re-winding of seamed tube
6. Cutting tube to required depth and then applying to product or container
7. Heat shrinking of film on sleeved product or container to a tight, shaped, fit

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Origination and pre-press

Historically

A difficult, cumbersome process.

Creating the correct amount of distortion for shrink sleeves was complex, labor-intensive, and typically required a significant amount of trial and error to get the design right.

Origination and pre-press

Today

Use of 3D design technology for shrink sleeves

- See how artwork distorts
- Simulates a heat shrink sleeve
- Avoids trial and error
- Provides a 3D preview
- Saves time and money

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Application of shrink sleeve labels with machines available for:

- **Vertical Feed**
- **Carousel Feed**

Full body shrink sleeve applicator running at up 800 plus sleeves per minute

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Things you will learn about the heat shrink sleeve process:

- Shrink sleeve labeling is a good growth process and has an increasing market share in a wide range of applications
- Different film materials have varying amounts of shrink
- There are CAD applications that can predict horizontal and vertical distortions and enable designers to predict how a substrate will react in a shrink tunnel
- Graphics could be distorted in the heating process
- Bar codes must still be scannable after the shrinking process
- A range of printing processes – both analogue and digital – are used for sleeve printing. Ink formulation is important
- Seam location will vary from one sleeve to another
- There are different types of sleeve applicators and heat tunnels
- The future still looks to be a good growth opportunity