



The Flexible Packaging Experts

Packaging Innovation in the Frozen Foods Sector

How Packaging Plays a Vital Role

Whitepaper



Contents

1. Introduction	3
2. The Role of Packaging in the Frozen Foods Sector	4
a. Key Considerations – Protection & Promotion	4
3. Packaging Technology	8
a. Film Specification	8
b. Product Requirements	8
c. Sealing for High Speed Packing	10
4. About Alert Packaging	11



1. Introduction

The Frozen Food market has seen a significant rise in interest in recent years, resulting in numerous growth opportunities for manufacturers. Predictions state that the global frozen food market will reach close to €7.5 billion by 2019. And while ready-made meals was the leading product segment in 2015, other products categories such as vegetables and frozen berries continue to increase in popularity.

With consumer's busy life styles and rising household incomes, more and more people are looking for convenient options that can fit around their hectic schedules. Technological advancements has resulted in flexible packaging companies having the ability to supply new film types and improved packaging designs which helps to protect, promote and store the product. Specifications such as printed films, re-sealable zippers, tear notch openings and single serve packing have played a key role in enhancing this trend.

Established products and brands in a given market can be easily revitalised by adopting fresh, new packaging with superior convenience. And there is certainly scope for Irish frozen food manufacturers to achieve better shelf standout and better illustrate the advantages of buying frozen foods through more effective use of new packaging formats making consumers lives easier.





2. The Role of Packaging in the Frozen Foods Sector

Packaging plays a vital role in the frozen foods sector. Using the correct film formats packaging can protect and promote a product while conveying important marketing messages. Plastic packaging is lightweight and can withstand high temperatures during cooking which allows food producers to maintain the highest quality of the end product.

Vertical form fill and seal systems are the ideal solution to respond to the increasing demand for frozen foods as they can quickly and effectively bag a wide variety of products and operate well in the harsh environments of the frozen food industry. By optimising their Vertical Form Fill and Seal packaging process, manufacturers can further boost productivity and food safety, while also increasing product shelf life and enhancing visual appeal to create a product that stands out amongst competitors.

a. Key Considerations – Protection & Promotion

Frozen food packaging should be puncture resistant, moisture resistant, leak-proof and durable enough to withstand heavy drop weight. This prevents spoilage and dehydration of the food with the end goal of extending the products shelf life.

The barrier properties of plastics are a vital consideration, as these will determine how well the material acts as a physical barrier to any external factors that could be detrimental to the product, such as light, oxygen or moisture.

The right material can keep frozen food from drying out and helps preserve its nutritional value, flavour, texture and colour. Furthermore, plastic does not interact with food and can be easily integrated with packaging technology.

Excellent temperature stability is also vital as the material needs to withstand both the extremely low temperatures during transportation and storage, as well as extremely high temperatures should the product need to be re-heated in its packaging.



Despite offering a range of functional benefits, packaging also plays a significant role in consumer buying decisions. Research found that in the next 5 years, 31% of brand owners expect to switch entirely to or move to a higher mix of flexible packaging. While only 14% expect to switch entirely to a higher mix of rigid packaging.



The survey revealed that consumers love the benefits of flexible packaging due to the ability to re-seal 47%, easy to store 44% and easy to open 35%. When asked directly 55% of brand owners said they saw a sales increase due to the switch to flexible packaging.*

Research has also found that 82% of shoppers make their purchasing decisions in store, while 54% of shoppers see product visibility as important.

This highlights the significance of attention-grabbing packaging, which is particularly important to attract consumers that are on-the-go or 'time poor' – for example, some shoppers may look for what appears to be the most convenient 'easy-to-cook' option. On-pack messaging is therefore very important. Visually appealing packaging often encourages consumers who are not familiar with a brand to buy based on image, before potentially going on to become a product's loyal buyer.

*Flexible Packaging Association

Packaging format is another key factor behind the promotion and communication of a product, which often focuses on facilitating convenience. For example, consumer demand for convenient food products has led to the introduction of multi-packs containing individual portion sizes.

Meanwhile, re-sealable packaging offers the ultimate convenience, particularly for single-person households.

The consumer can open a bag of frozen food with the peace of mind they can return the remaining contents to the freezer and the packaging will continue to offer protection throughout the product's shelf life, minimising waste food in the long term.



3. Packaging Technology

a. Film Specification

Film choice is a vital consideration for frozen food manufacturers. Not only does it increase visual appeal and informs consumers what is inside, but it protects the contents and improves the convenience of the product.

Product requirements

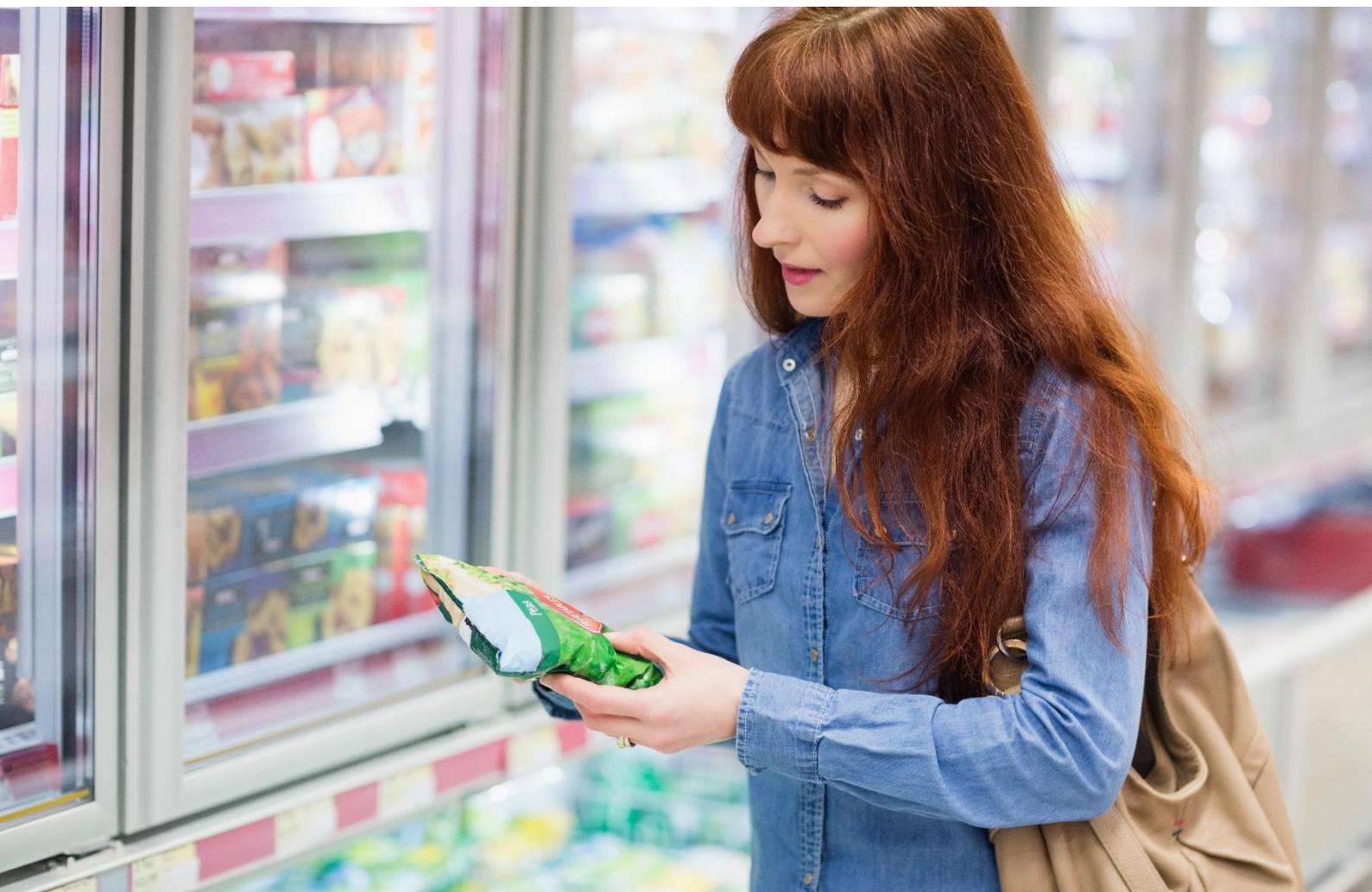
Besides a frozen product's possible sharp edges, the packaging must be able to withstand the pressures of sealing, freezing, storage, transportation, thawing and in some instances, even cooking. During freezing, most foods expand. The extent of this expansion will depend on the amount of water content. Frozen food packaging therefore needs to be strong and flexible to account for these changes in product characteristics.

Packaging materials should be liquid tight to prevent leakages. The choice of packaging material and the thickness of the packaging film are therefore important attributes when packaging these types of goods. Many frozen food producers package their products using Polyethylene (PE) film as it offers high durability standards and elongated product shelf life, while also maintaining film property when frozen. PE films deliver a high mechanical strength and puncture resistance, even at temperatures as low as -40°C , which is required for transportation, handling and storage.



By combining different laminates it is possible to achieve specific film functionalities depending on what is required in terms of barriers properties, sealability, printability and overall appearance and feel of the bag.

Products which not only require freezing, but also need to be reheated in the bag for ultimate consumer convenience must be packaged in materials that are able to maintain their integrity when boiled or microwaved, as well as during storage. For “boil-in-the-bag”- type products, manufacturers tend to use laminates of polyester or polyamides with PE or polypropylene film. PET (Polyethylene terephthalate) film is one such example, which possesses a heat sealable layer of PE so it can withstand exceptionally high temperatures.



The type of sealing technology employed by manufacturers is crucial when trying to achieve an efficient packaging process. A high quality seal ensures that the contents are fully protected against the intrusions of unwanted external materials or gases, and is also important for the overall visual appeal of the bag.

Which type of sealing technology is the most suitable depends on the film material used. Constant or direct heat sealing, for example, is a common method that uses two jaws with a constant high temperature to seal the opening or loose ends of a wide range of plastic packaging materials. This method is particularly suitable for thicker films with a high melting point, such as coated Polypropylene for example, as constant heat sealers are able to reach higher controlled temperatures than other forms of sealing technology.

Vertical Form Fill and Seal systems with high thermal conductivity jaws provide additional benefits as these can be up to 10 times more heat conductive than regular jaws, delivering optimal seal performance even on thick laminate films. They're also better at maintaining a set temperature profile, mitigating potential temperature fluctuations that could affect the seal integrity when the cold film hits the hot sealing jaws.



Contrary to constant sealing technology, an impulse heat sealing system only applies an electrical current 'on impulse'. For this, a small piece of wire is heated instantly and then immediately cooled once the sealing process is complete, lowering operating costs as the sealing jaws are not required to be heated constantly.

Additional benefits of impulse heat sealing technology include faster heat-up times and improved sealing accuracy on films with low melting points, like PE for example – making this technology a widely-used choice within the frozen sector.



5. About Alert Packaging

We are the flexible packaging experts. We are quality-led manufacturers and printers of laminated flexible packaging for the food and pharmaceutical industries. We believe that packaging is a key enabler of growth for our customers. Using the very best in Ultra HD print technology and quality control procedures, we help our customers to deliver packaging that grows their business, gets them to market faster and reduces their risk.

To succeed in a quickly-evolving market it takes experience and know how to create the right packaging film and format for your product in the shortest lead time possible. [Our expertise in delivering such solutions helps our customers to outperform their competition and ultimately, grow.](#)

Why Us?

- **Quality Accredited** – We operate to BRC Issue 5, Grade AA Accreditation
- **Perfect Colour Profiling** – Guaranteeing Your Brand's Promise for Quality
- **Local Suppliers** – With a Dedicated Account Management Team
- **Unique 100% Inspection System** - Ensuring Total Quality Control – The only guaranteed 100% HD flexographic print inspection system in Ireland
- **Perfect Print Register** Using our 8 Colour Ultra HD Flexographic Printing Press
- **Online Customer Portal** - Ensuring fast, accurate, real-Time access to customer information 24/7
- Over **40 Years' Experience** in Flexible Packaging