



Protective Packaging Limited

Prolonging Product Life

Committed to Quality and Service



Established in Manchester in 1988 the company has grown to become a worldwide leading designer and manufacturer of climatic packaging solutions.

Specialising in **dried product protection** and **corrosion prevention**, we manufacture a range of Aluminium Barrier Foil bags and liners to suit any application where deterioration of the packaged product may take place due to attack from:

- Moisture
- Oxygen Ingress
- U.V. Light
- Temperature Extremes
- Odours
- Mould and Fungi Growth
- Grease and Oils
- Chemicals

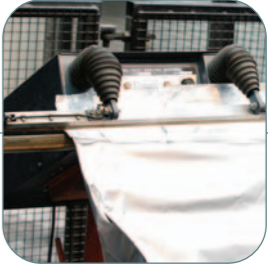
With the aid of a dedicated team and a network of worldwide distributors, we have the capability to offer global solutions to your climatic packaging needs.

In every instance the highest standards of quality prevail. We have been certificated to BS 5750 since November 1990 and then achieved: ISO 9002 - 1990-2002, ISO 9001: 2000-2003-2008 and from 2009 we have been certificated to ISO 9001:2008. All aspects of quality from goods in testing, through to final inspection and despatch are controlled.

No matter how big or small your requirement, the Protective Packaging name has become synonymous with quality and peace of mind. This has been achieved through an understanding of the products that we are required to protect and the properties of the materials that are available to us.

Benefits

- Eliminates corrosion
- Reduced desiccant usage and thus overall shipping weight
- No need to use preservation methods requiring cleaning
- Eliminates the need to re-dry product
- Eliminates odour transfer, into or out of the pack
- Reduces the need to invest in modified atmosphere storage
- Outer packaging cleanliness
- Allows the outer container to be disposed of by simple landfill process
- Suitable for "hot fill" applications
- European pharmacopoeia and FDA approvals for direct contact
- Suitable for anti-static applications
- Liners allow outer containers to be re-used
- Allows gamma irradiation / sterilisation before / after filling



Manufacturing Facilities

We have the ability and resources to develop and produce, on a global basis, innovative design solutions for existing and new market sectors.

Manufacturing capabilities are based around hand and automated fabrication, producing flat, 3D and round bottom pouches, bags and liners with no limitation on size, shape and quantity, all available with very short lead times.

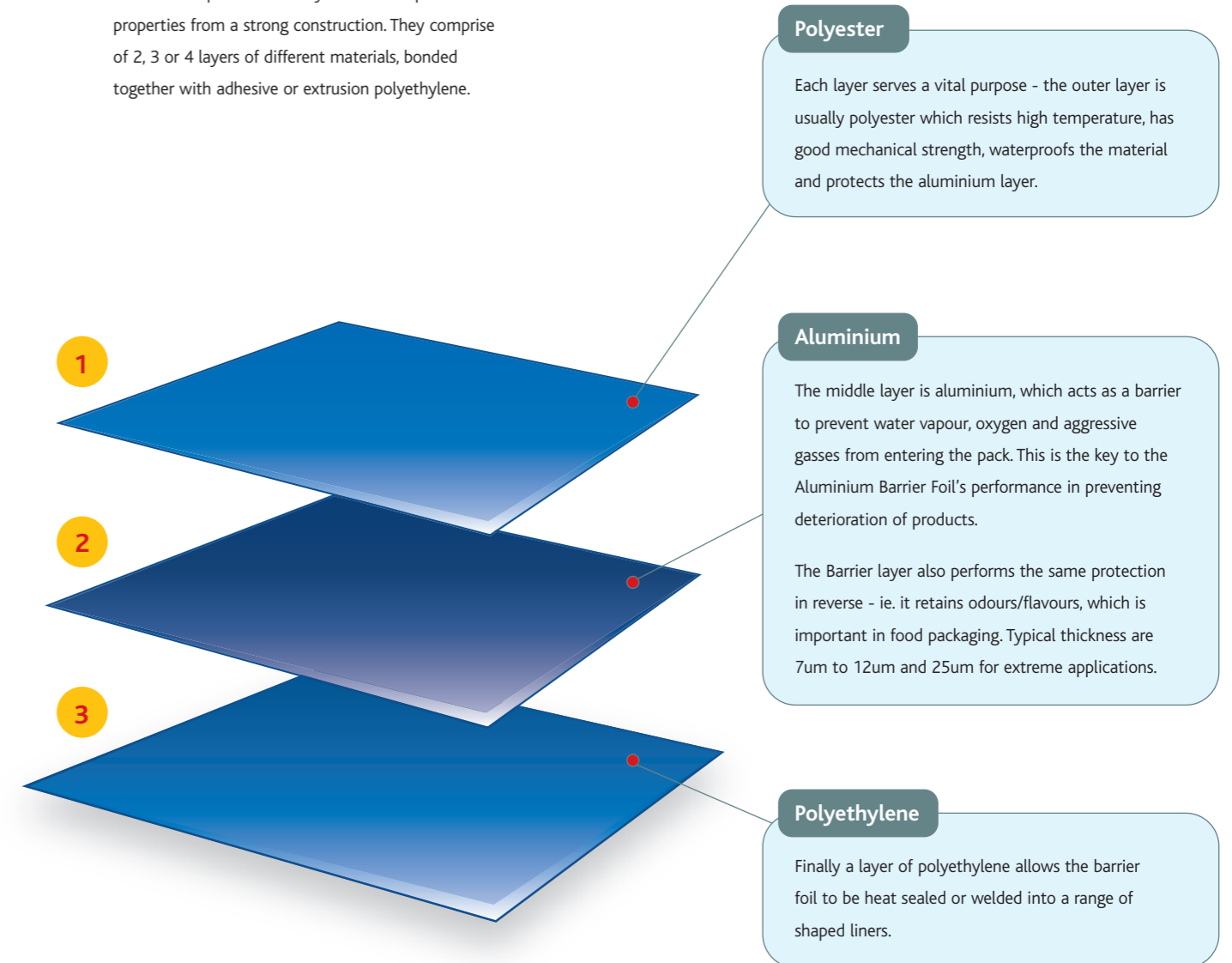
Our continued programme of investment and the adoption of flexible work patterns, mean that we have sufficient capacity and enhanced production capability to cope with the growing demands of our business and its customer base.



Innovative design solutions for existing and new market sectors

Aluminium Barrier Foils Typical Construction

Aluminium Barrier Foils are available in a wide range of specifications and can be manufactured to suit individual requirements. They derive their protective properties from a strong construction. They comprise of 2, 3 or 4 layers of different materials, bonded together with adhesive or extrusion polyethylene.



There are, however, many possible variations to the laminate assembly to satisfy the customer's technical and commercial requirements.

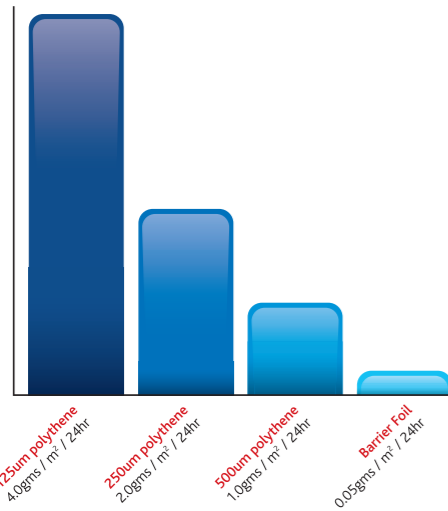


Water Vapour Transmission Rates

An indication of the performance of Aluminium Barrier Foils is provided by their Water Vapour Transmission Rate (W.V.T.R.), which at <0.01 gm/m²/24hr for the laminate itself and less than <0.05gm/m²/24hr for converted laminate, is lower than any known flexible packaging material.

By comparison, polyethylene, with for example a thickness of 125um, allows water vapour and aggressive gasses to diffuse at a rate of up to 4gms/m²/24hr (80 times faster).

Within the heat sealed Aluminium Barrier Foil Bag, a calculated amount of desiccant can be added to ensure the relative humidity (RH) remains well below 40% - the starting point for corrosion. A 25um layer of aluminium even improves on these figures.



Typical Applications and Usages

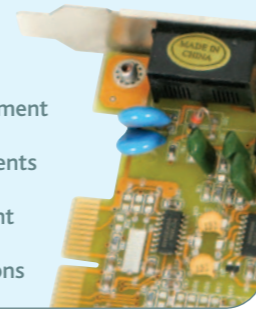
Dried Product Protection

- Food Ingredients / Flavours
- Pharmaceuticals
- Dyes
- Polymers and Resins
- Chemicals
- Masterbatch
- Healthcare



Corrosion Protection

- Machinery
- Electronics
- Automotive Parts
- Engineering Equipment
- Scientific Instruments
- Defence Equipment
- Telecommunications



Products and Solutions - Corrosion 3D Bags

Typical Applications - Machinery

Aluminium Barrier foil can be supplied in roll form, or tailor made, as flat, or 3D bags. The following is a typical example for the packaging method using a barrier foil bag, "One Layer - Total Climatic Protection".

3D Box Liners

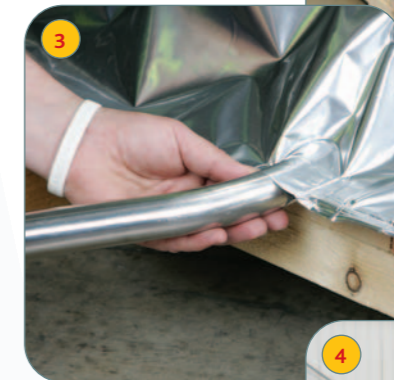
3D box liners - for any moisture sensitive item. They are custom made to suit individual requirements and are available in different laminate combinations, including anti-static layers to suit electronic applications.



The base sheet is laid on the case base. Desiccant is added and the 3D bag is placed over the machine.



The bag is sealed to the base sheet.



Just prior to the final seal, any excess air is extracted.



The bag is now ready to protect from all climatic conditions.



Finally the wooden case is added to provide the physical protection.



Flat Pouches

Flat pouches - Providing the same level of protection, these bags are also available with a zipper for re-closable applications.



F.I.B.C. Liner

F.I.B.C. Liner - The growth of FIBCs (Flexible Intermediate Bulk Containers) over recent years has reflected their ability to provide cost effective bulk outer packaging for powders and granules. An FIBC combined with a barrier foil liner can be used to pack products, which previously needed to be shipped in sealed containers such as steel, plastic or fibreboard drums. Not only does the liner offer a material cost saving over drums but shipping space efficiency can be improved by up to 40%.

Available with top and bottom filling spouts.



Drum Liners

Drum Liners - are manufactured in a wide variety of diameters and are custom made to your requirements. By using liners, drums can be re-used or recycled as clean waste, and in some instances downgraded from steel to fibreboard. The round bottom design fits the exact shape of the drum and eliminates any waste.



Octabin Liners

Octabin Liners - offer an economical method of shipping bulk granules, powders or flakes. We offer a wide range custom made liners to suit any size of container to give total protection for the contents



25kg Gusseted and Vented Sack

25kg Gusseted and Vented Sack - comprises of barrier foil with extra strength and thickness, providing the ultimate water vapour and oxygen barrier. The sacks are tailor-made for stacking goods on pallets.

A one-way de-gassing valve can be fitted to allow air extraction, pressure equalisation and better palletisation.



Aluminium Barrier Foil Valve Filling Bags

Aluminium Barrier Foil Valve Filling Bags - are available as an alternative to polyethylene and paper valve sacks for the more specialised product susceptible to moisture or oxygen damage. With no minimum order quantity and very short lead times, these total barrier sacks are available when you need them and in quantities that match the shorter manufacturing runs of more specialised product.



ProtectAtainer - Aluminium Barrier Foil ISO Container Liner

As some products are more climatically sensitive than others, polypropylene / polyethylene container liners are not always suitable.

There is now a solution – tailor made 20', 30' and 40' container liners made from aluminium barrier foil laminate providing protection from moisture, oxygen, uv light, temperature extremes and odour transfer.

We can manufacture the bulk head and filling / discharging / venting features to suit individual specifications.



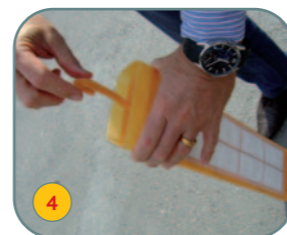
ProDriPole Desiccant Pole

ProDriPole is a unique desiccant system developed specifically to protect the contents of ISO 20' and 40' containers from the detrimental effects of moisture.

Using anhydrous Calcium Chloride as the desiccant, ProDriPole is designed to work in relatively open environments as opposed to silica gel which must be contained within a controlled atmosphere such as a foil bag in order to be effective.

The unique design of ProDriPole allows the absorptive qualities of the Anhydrous Calcium Chloride to be maximised.

Generally 4-6 poles are required for 20' containers and 6-12 poles for 40' containers. The number varies according to the length of transit, prevailing conditions and type of cargo.



Heat Sealing Equipment

Protective Packaging offer a range of heat sealing equipment which can be used to achieve effective seals on both Aluminium Barrier Foil and thermoplastics. The sealers are offered in a range of different formats suitable for a broad spectrum of operations, from the small user right up to large scale manufacturing operations.

Sealers can be purchased or offered under a rental agreement. We also offer a sealer repair service.

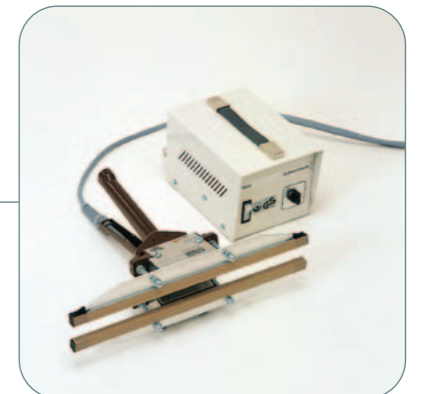


HZ Hand Held Sealer

HZ Hand Held Sealer - the sealer provides accurate temperature control, plus a ribbed jaw surface for easy identification of seal integrity. This hand sealer is compatible with all grades of Barrier Foil. It has a sealing width of 12 mm and is available in jaw lengths of 20, 30, 40 and 50cm.

SZ Hand Held Sealer

SZ Hand Held Sealer - suitable for use with both polyethylene and PVC, this hand held impulse sealer has a highly accurate timer. It has a sealing width of 3mm and the jaws are available in lengths of 20, 30, 40, 50 and 60cms.



Vacuum Sealers

Vacuum Sealers can also be supplied to provide gas flush and/or vacuum packing. With one press of a foot pedal the sealer automatically flushes out oxygen and moisture, prior to evacuation and bag sealing.



Damage Detection Indicators

Shockwatch, Tiltwatch and DropSpot Indicators provide a valuable means of determining the condition of the goods at every stage of the distribution chain. Mishandling or damage to the transit packaging / goods is automatically signalled by the indicators, helping to promote careful handling at all times.



Desiccant

Desiccant is required to remove any residual water vapour inside the aluminium barrier foil bag and to neutralise the small amounts of water vapour, which will subsequently pass into the bag from the atmosphere.

We can advise and supply the most appropriate quantity of desiccant for each barrier foil application in line with BS 1133, Section 19.



Humidity Indicators

Humidity Indicators - they provide a humidity monitor of the bag contents - a measure of the effectiveness of the Aluminium Barrier Foil bag and desiccant at protecting your products against moisture ingress.

Indicators can be integrated into the bag to continually monitor the relative humidity.



Damage Prevention

Xpander Pak

Xpander Pak - protective shipping envelope - supplied flat for easy storage, Xpander Pak envelopes provide a greater cushioning effect to protect fragile goods or any item susceptible to damage during transit. Items are placed inside the envelope and sealed. The outer surface is then punctured with any sharp object and the pack then expands to cushion its contents without any gas or chemical reaction. It is supplied in three standard sizes, small - 203 x 250mm, medium - 290 x 370mm and large - 340 x 450mm.



Skid-mate Pallet Cushions

Skid-mate Pallet Cushions - designed to replace pallet runners, Skid Mates offer a quick and cost effective answer to the packaging problems caused by shock and vibration. The doughnut-shaped units are easily bolted through the pallet or case base.



Cross Woven Case Lining Material

Cross Woven Case Lining Material - provides the ideal alternative to more traditional materials such as reinforced and Polycoated reinforced Kraft Union or roofing felt. Not only is it far more tear resistant than these materials, it is also UV stabilised and 100% waterproof.



Self Adhesive Cushioning Material

Self Adhesive Cushioning Material - adheres directly to rough sawn timber, plywood and cartons to provide a firm cushion between the packing case and its contents. This quick and easy to use material is available in standard 5cm and 10cm width rolls.



Cross Woven Case Lining Material is 100% waterproof, UV stabilised and tear resistant