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COATING TECHNOLOGIES LLC



What You Need to Know About Ordering Blister Card Materials

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Go into any department store, grocery store, or convenience store across the globe and one of the first things that will draw your eye are the products on display in blister packaging. You're no doubt familiar with them: thin plastic bubbles mounted to cardboard stock designed to showcase the products they contain.

There are many reasons blister packaging is so popular. It is unparalleled at highlighting the enclosed product, often augmenting their contents with attention-getting design and colorful graphics. Blister packages put the actual product the consumer will buy in clear view at the point of purchase, helping to generate or confirm buying interest. And for manufacturers, blister packaging can be a relatively simple and economical way to get products in front of consumers. They can also help protect the product when it's on display and when it's in transit.

Consumer product manufacturers considering using blister packaging for their products should take into account a number of factors that can impact how effective the packaging will be, both from a marketing and an economic standpoint. Here are a few considerations you'll want to keep in mind when determining what kind of blister packaging and blister card composition may be right for your products.

What are the main types of blister packaging?

Blister packages encompass a wide range of packaging options for a host of products — consumer goods, pharmaceuticals, and food service applications are just a few. When it comes to consumer goods, there are four primary types of packaging: top of card, card-to-card, fold-over card, and hinged blisters, commonly called “clamshells.” For our purposes, we'll focus on the two types that feature PVC or PET plastic blisters mounted to blister card stock.



- **Top of card.** The card is printed and top coated with a heat seal adhesive and the plastic blister is sealed to the print surface. This is type of card is the original type of blister package configuration and has been used in many high volume small part packages. The problem with this kind of blister card is the manufacturing steps required to coat the pre-printed sheet.



- **Card-to-card.** Card-to-card, or front-and-back card, are blister packs that consist of two separate cards that are bonded together to sandwich the plastic blister fins between them. In this process the heat seal is applied to the roll paperboard prior to printing.
- **Fold-over card.** Fold-over card packages consist of a single, longer card that is folded over at the midpoint to trap the plastic blister between the two leaves. In this process the heat seal is applied to the roll paperboard prior to printing
- **Hinged blisters.** Hinged blisters are completely plastic and typically consist of one plastic blister folded over and often heat fused at the edge. They can be difficult to open, usually requiring a knife or a pair of scissors. While this resistance to opening may help reduce shoplifting at the point of purchase, it tends to also result in frustration as buyers struggle to get them open after they get home. (There's even a name for this frustration: "wrap rage.")

What type of products are blister packages best suited?

The versatility of blister packages makes them an appealing option for a diverse array of products. They are particularly well suited to small, higher-value consumer goods where consumers want to visually examine the product they are purchasing. Blister packages are also a great option for products that may have an unusual shape and thus are not good candidates for a folded carton package — plastic blisters can be formed into almost any shape, and blister cards allow them to be hung for display, regardless of how asymmetrical the product may be.

FACTORS TO CONSIDER WHEN CHOOSING BLISTER CARD MATERIALS

Blister cards are an integral part of blister packaging. The material from which they are formed, and the materials with which they are coated, impacts everything from security and printability to how well the package seals and how economical it is to produce. So it's vital to ensure that the blister card material you choose is the optimum match for your functional requirements.

In general, there are four main factors to consider:

- What should the blister card stock itself be made of?
- What coatings will the blister card require?
- How does the blister card stock fit into the supply chain?
- What testing procedures are needed to ensure highest quality and best performance?





What should the blister card stock be made of?

Blister card stock, also known as “substrate,” is available in a variety of options that can be tailored to the goals of the packaging and the requirements of the manufacturer.

Standard display packages can be made with any grade of paperboard. All blister card stock is made from clay coated paper, which has a smooth clay coating applied over a rough paper base. Standard clay-coated paper is a basic platform that can fulfill most blister card stock needs at the most economical cost. The four primary types of blister card stock are:


- **Standard clay-coated chip:** Also known as Coated Chip, it is often recycled paper that has been clay coated. Though this type is the most economical, it has limitations. It does not have the consistency of virgin paper, and even with the clay coating, the printed finish may be of a lower grade due to the surface inconsistencies.
- **Solid bleached sulfate (SBS):** SBS is medium density, virgin fiber paperboard coated on both sides with a bleached mineral synthetic pigment that gives a white finish on both sides. It's slightly thicker than basic paperboard and its white surface makes it especially well-suited to accept bright colors and more complex graphics. It also has superior scoring, creasing and bending characteristics.
- **Laminated SBS on SUS:** To get the best of both worlds, manufacturers often use both SBS and SUS (solid unbleached sulfate) in card-to-card applications. In this material the SBS is laminated to the backing of the SUS. The top provides an excellent surface for printing, while the backing SUS card provides strength and increased tear resistance at a lower cost than using only SBS paper.

What coatings will the blister card require?

Selecting the type of blister card stock is only the first step in designing the optimum blister package for your product. The function of the card is ultimately determined and enhanced by the types of coatings that will be applied to it, and many coatings are highly specialized. The coating and the card must be considered as an integrated unit, so it's important to consider the specific characteristics the packaging must meet.



- **Adhesion requirements.** Does the coating need to adhere to itself (in a fold-over card), to a different type of card stock (a card-to-card application) or does it need to heat seal directly to thermoformed plastic film?
- **Heat seal or cold seal?** Coatings that can be heat sealed offer excellent reliability and durability. When heat sealing is appropriate, it's important to get a few pieces of additional information: what temperature is needed to achieve a good seal?



Typical temperatures range from 130-150 degrees Celsius. Also, what is the heating element dwell time? It typically ranges from 2-5 seconds. Cold sealing (or pressure sensitive sealing) enables the card stock to be joined using only pressure and no heat. Cold sealing is harder to use in high speed packaging operations and is much better suited for small runs.



- **Resistance to tearing.** Does the blister pack require an additional film lamination to add tear resistance? And if so, how much tear resistance is required? Permanent adhesives are used to laminate films; the advantage of this is that they create a structure that prevent tearing and product tampering. Higher tear resistance can add significantly to the cost of the final unit, and it typically is employed only for high value products for retail display.
- **Ease of opening.** How easily should the package be opened? Should it be easy to open, or does it need to be robust in order to add extra security.

What other participants in the supply chain need to be consulted?

Applying blister card coatings is a highly specialized process; so specialized, in fact, that coating providers often focus solely on the exacting standards that govern the creation, chemical engineering and application of the card coating process. That means the card stock is often the result of a supply chain that includes the paper mill, coating company and commercial printer that create the card for actual insertion by the product packager. Therefore, there are additional issues that are important to address:

- The coating company must consult with the supplier of the raw paperboard. We've already discussed the types of paper typically used in blister packaging, but the type of paper isn't the only variable. For instance, what is the caliper of the paper? The actual thickness of paper, typically measured in thousands of an inch, is the paper's caliper. When two cards are used to hold thermoform plastic film, the caliper for each board can be as low as 12 point or as high as 26 point. So it's necessary that the coating company qualify the paper grade and supplier to make sure the adhesive package works through the whole process.
- How will the card stock be printed? Different types of projects require different types of delivery to the commercial printing facility. Will the coated card stock be delivered in rolls? How will this affect the coating? Or will it be delivered in sheets? Will the stock need to be die cut, and if so, will it be via a rotary or flatbed die cutting process? The efficiency of the printer and packaging company is dependent on the quality of the raw material that they choose to fulfill the job.





How important is recyclability?

Green manufacturing and sustainability are becoming more and more important to consumers and retailers alike. In fact, Walmart has a score card that rewards products that use recycled materials, reduced packaging, or uses packaging that can be easily recycled. Opting for a blister card approach versus a clamshell can help boost recyclability by decreasing the amount of plastic used. Nearly all paper companies produce papers with pre-consumer or post-consumer recycled content. Card stocks made with recycled content can be hard to work with. However, some specialized coatings and laminations can help reduce these problems by improving the quality of the printing surface. In addition, some coatings are more environmentally friendly.

What testing procedures are needed to ensure the highest quality and best performance?

Of course, just as important as careful planning when determining which blister card coatings are most advantageous is testing to make sure they work as desired. At the very least, a prototype should be given a squeeze test to make sure the plastic film's adhesion to the blister card stock, or the adhesion of the card stock to card stock, is sufficient to withstand normal handling wear and tear. Ideally, several more tests should be administered, such as testing the tear strength of the blister card, and an inspection of the quality of the print surface. Depending on the desired characteristics of the blister package, other tests should be incorporated:

- Adhesion
- Barrier tests
- Moisture
- Color matching
- Heat seal
- Gurley test (*measures the volume of air that passes through a test sample*)

Consult the coating facility early in the planning for best results

As you can see, blister packaging may seem like a relatively straightforward and simple way to display products for potential buyers. But it is, in reality, a complex process that poses unique challenges and many options to choose from along the way. To determine the best combination of blister card stock and coatings that will meet your production needs, it's best to consult the coating facility early on in your planning. That way, you'll gain the greatest benefit from their expert technical help, their experience in problem solving, and their proven working knowledge. Putting that experience to work for you is the best way to successfully navigate the challenging tradeoffs of economics, production quality and time constraints that all manufacturers face when bringing their products to market.

