Creating Die Lines and exploring design alternatives

What is a Dieline?

The dieline is the template for a package. It's a flattened outline of the cut lines and folds. You cannot create a product package design without one – so don't even try.

If you took apart a cereal box and flattened it out, you'd be looking at the dieline. The edges of the box are the cut lines and all the seams and creases are the folds and overlaps. It's basically supermarket origami that must also be sturdy, functional and do a darn good job of attracting the consumer's interest.

Your dieline must be perfect. You'll be creating an extremely tight layout, a pixel perfect balancing act between competing design elements, so even losing an eighth of an inch will often require a reworking of the entire package. This is why I never start a package design without a finalized dieline. Otherwise I'm just guessing and ultimately wasting my time and giving my client a false sense of accomplishment.

Before you get started, there are a few preliminary questions to ask before designing the package dieline:

What is the size of the product?

The size of the product you're designing packaging for will come in handy, as your die line needs to be able to comfortably hold your product in place. A package design that is too big will cause your product to move around too much in the package, and risk the product getting damaged. And a package that is too small will risk your product popping out of the package and getting damaged or lost.

What is the weight of the product?

The weight of your product will determine what kind of material to use for the package. Depending on the type of material, this may affect your die line design.

How will it be displayed?

Is this product going to hang up on racks? Or will it sit on a shelf? It's always important to understand if your package will require any special cut-outs, extra flaps, etc. when designing your die line.

How are competitors packaging their product?

Check out the competition! See how they package their products. If they have a great package design, grab a sample and use it for inspiration when designing your dieline. If you notice any flaws in competitor package design, take note of what *not* to do.

Who is the printer and do they have any requirements?

Reach out to the cooperating printer before you begin your die line! Typically, printers prefer dieline created in Adobe Illustrator. However, it's always a good idea to double check before you invest time into designing a dieline in the wrong design program.

Setting Up Dielines:

Typically, there are 7 components to a dieline:

1. Trim Line

The trim line is the actual size of your final piece that will be cut and folded. This is the basis of your physical package design, and is typically created with a white fill and a red or hot pink stroke.

2. Bleed Line

The bleed line is placed outside the trim line, and acts as a safety net for any artwork that will extend to the edge of the trim line. The bleed area is printed, but will be trimmed off according to the trim line. Usually the bleed line should be placed .125" from the trim line equidistantly around the package. However, depending on your printer or the size of your package, you may need to increase your bleed width.

3. Live Area/Safe Zone Line

Safe zone lines are to note the area that will be guaranteed to be visible. This is especially important for designers who will be using the dieline as a guide for their artwork. It well help guide their design to make sure everything important is visible and does not get cut off, look of-center, or awkward.

4. Fold Line

Fold lines are noted to show where the different planes of your package design should fold and create a dimensional package. This is not only important for reference when packages are being built, but it is also important for you, the designer, to make sure important design elements are not placed along those fold lines.

5. Perf Lines

Create lines on your dieline layer to show where any of the package design will be perforated. Some packages need perforations for punch-outs, tear-offs, etc.

6. Interior Die Cut Lines

Some package designs have windows or cut-out areas. If this is the case in your project, make sure to create a separate line for this. Die cut lines indicate custom sections that need to be removed on the interior of the piece. For instance, windows that show your physical product on the inside of the package.

7. Glue Areas

This part of a dieline indicates areas where the package will have adhesive applied when building the final package.

Additional things to note on your dieline art file:

1. *Make sure that dimensions are clearly noted for panel sizes and especially overall flat size of dieline.* This allows the printer to know the size sheet necessary for printing/estimating.
2. *Make sure to note any glue areas.*
3. This will help the printer understand where to glue pieces of
4. *Make sure to note any window areas.*
5. This lets the printer know where to cut out any window pieces that will show the product inside the package.

6. *Make sure to note any additional special instructions.*
7. If there is anything out of the ordinary, or anything you think is especially important for the printer to know, definitely call it out.
8. *Make sure to make use of your layers in your Adobe Illustrator file.*
9. Keep your dieline on a separate layer from your artwork. Also make sure to label your layers accordingly. This will not only keep yourself organized, but will also keep things organized and easy to understand for the printer.

Either way, the following tutorial explains how you do it.

Step 1 – Deconstructing the Product or Package

If a client gives you a pre-existing package and they say they want theirs to be just like it, or if they send you the product itself and they want a package or label for it, you'll need to deconstruct. This involves breaking the package down to its basics.

If you're comping a pre-existing package you'll need to break it apart and see how it works. You'll note the location of the tuck tabs and glue seems, of the orientation of the graphics, and where the folds hit.

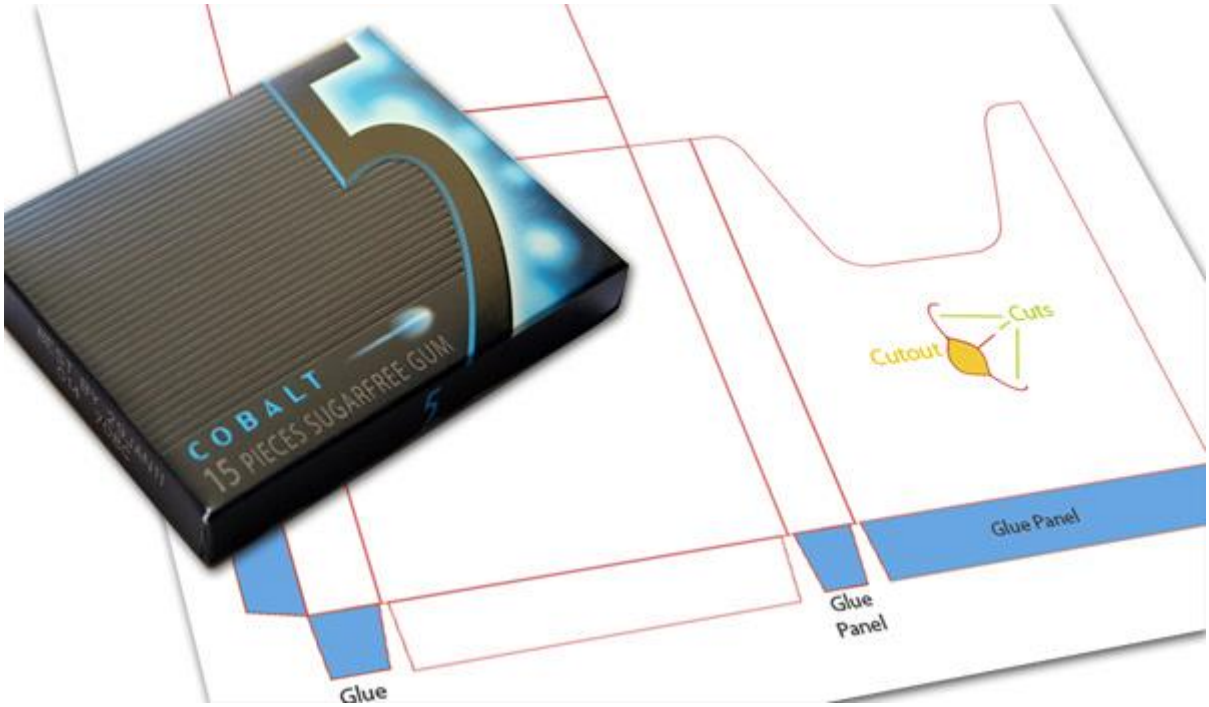
The best way to understand a package is to break it apart. From there you can easily take measurements or scan it. To make a dieline for a bottle or jar you just need some paper and a pencil. Wrap the paper around the container and mark optimum width and height marks then unroll the paper and note the dimensions.

If you have the product, but no package or label, you'll need to make some basic measurements. For a jar or bottle it may be as simple as wrapping some copy paper around the jar and then marking the cutlines with a pencil. For a free-standing product you'll need to make some basic measurements of the product's dimensions or fold some paper around it and a make a crude box to get a feel of what size package you'll need.

Step 2 – Making the Dieline

First you'll need to create a new file in Illustrator. Make the artboard big enough to hold the dieline including room for design notes and PMS swatches. Create a layer and call it "dieline". Make another layer and call it "artwork". Put the dieline layer above the artwork layer.

When you make your dieline, use the industry standard visuals. Cutlines are solid red and usually .25 or .50 points in thickness. Folds can be solid or dotted red lines. I like to make my dielines out of shapes with a red stroke and a transparent fill. If you have another method, like using the pen tool, that you are more comfortable with, then use that one. As long as you end up with clean, accurate lines it doesn't matter how you get there. Once you're finished with the dieline, lock the layer so you don't mess it up.
If you want to give yourself safe margins use blue lines or pull down some guides. It's perfectly acceptable to put notes on the dieline like "front panel", "tuck flap", or "glue panel". However, put them on another layer called "notes" just to make it easier to hide or show them later.



Wrigley's 5 Gum Box Package Dieline. A client had a disposable cleaning product that would fit perfectly in this box. So I took it apart and made a dieline to use as a starting point. You can download the file using the link above.

If you're comping a pre-existing package the quickest way to make a dieline is to just break it down flat and then scan it at 300dpi. Bring the scan into Adobe illustrator and start making your dielines right on top of the scan. Of course, you'll want to be monitoring your progress by making real world measurements of the package and then comparing that to your dieline in progress. Even if you are going to be making minor adjustments to the width, height and depth, scanning and tracing a pre-existing package can be a real time saver. It also guarantees that your orientations are correct.
If you need to build from scratch you'll start by translating your paper measurements and prototypes into basic blocks. Now, before you get too deep into the dieline, print out a hard copy sample. Wrap the printed label around the container or cut out the box, fold it and tape it together. If you botched your measurements you'll find out right way and save yourself a bigger headache down the road.
You need to repeat this process until the dieline is absolutely perfect. Only then are you ready to start designing.

Step 3 – Producing a Hard Copy Prototype

After you've created the first round of designs, and all the basic elements are accounted for, you'll need to print it out and make a prototype. This is your second wake up call. If your orientations are wrong, if the text is too small to read or too close to the cut lines, or if you inadvertently placed a key design element under a flap, you'll know right away. That's ok, because mistakes are really cheap and easy to fix at this stage.

Always make hard copy prototypes of packaging designs from your dielines. Just print them out on some decent quality inkjet paper and using a steel ruler, an Exacto knife and some double side tape, cut, fold, and tape them together. The Typhoon 150 box on the top left is actually 18 inches wide in real life so I printed out a miniature. The WildBar packaging in the front is stuffed with some rolled paper towels to give it structure and simulate the actual size of the energy bar that will be inside. For the caper labels I just bought some jars of the cheapest capers I could find, scrubbed off the old label, and applied my own.

Step 4- Off To The Printer

Even after checking and double checking my dielines for weeks, I still don't approve the print run without printing out the PDF printer proof. If I can print it out full size and assemble it, all the better. However, if I have to print out a miniature version that will also work, especially for a box. A miniature that assembles perfectly is an acceptable substitute if the measurements are true – which at this point they better be! The whole goal at this stage is to avoid a costly reprint due to a botched dieline or a simple typo.

Last chance to get it right. Print out the proof and assemble the package to see if it works.

So that's it. Go forth and design! And remember: it is impossible to be too anal about getting it right. Mistakes can cost thousands of dollars but rechecking your dieline cost only an hour of your time a few pieces of tape. Now that's a bargain!

So, what are the benefits of well-executed dielines?

Peace of mind

Knowing that you've designed a dieline that you've tested and mocked up will give you peace of mind when handing off your design files to a printer.

Good Printer Relationship

A well-executed dieline will make your printer's life so much easier as well. If the printer can look at your dieline and easily understand sizes, crop marks, fold lines, etc., it will ensure the project runs as smoothly as possible. This will build a strong, trusting relationship between you and the printer.

Good Client Relationship

A well-executed dieline will also build a strong, trusting relationship between you and your client. A dieline that is well planned demonstrates to the client that you have a great understanding of package design, you can think outside (or inside) the box to create something functional and visually-appealing and you can work well with a printer to create a beautiful final product.