

Not All Films (or substrates) Are The Same

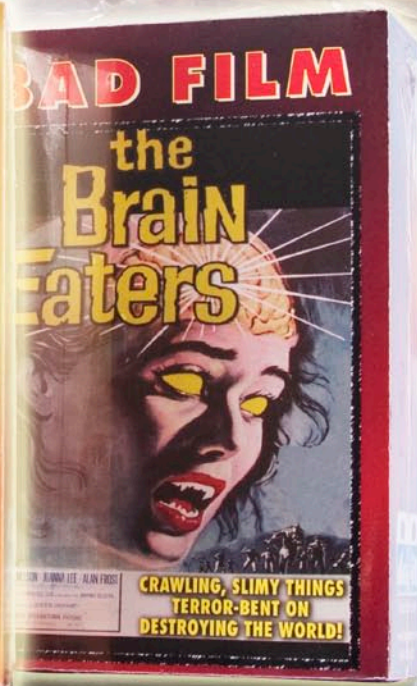
GOOD FILM

VS.

BAD FILM

It's usually pretty easy to tell a good movie from a bad movie. That's not necessarily true when it comes to films-shrink films. All films are different and that's why we run hang tab tests on a variety of shrink films. It's important for us, and for our customers, to know what shrink films will work, what films are incompatible, and what films need to be closely watched.

Shrink films are just one substrate we analyze. For every hang tab used there are substrates and hanging environments to consider. While that may be too many variables to monitor there are a number of factors that can be watched to better guarantee hang tab performance. Look inside this brochure for information on a variety of factors that can affect hang tab performance.



In general, the key factors that affect hang tab performance are:

- Location on package
- Package size, weight, and peel angle
- Surface form
- Wet-out time
- Hanging environment — temperature/humidity
- Substrates — package surface
- Surface contaminations
- Master carton packaging
- Adhesive selection
- Plastic selection



DO-IT CORPORATION

PO Box 592 • 1201 Blue Star Memorial Highway
South Haven, MI 49090-0592 • USA
(800) 426-4822 / (269) 637-1121
www.hangtab.com

Keys to Successful Hang Tab Performance ...

SOME FREQUENTLY ENCOUNTERED PROBLEMS

Solutions..

DO-IT BRAND HANG TABS: ENGINEERED FOR SUCCESS

Do-It Hang Tabs are designed to hang products on peg hooks, display strips — anywhere customers can see them. Unfortunately, sometimes, a hang tab fails to hold the product in place. Often the cause of the failure can be easily identified and corrected.

When a hang tab fails, the first thing we examine is the weight and shape of the product and where, on the

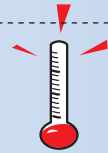
product, the hang tab was placed. Each style of hang tab is designed for packages of various sizes, shapes, and tested to hang a specific maximum weight.

When a hang tab fails, the reason can be as simple as the wrong hang tab was selected for that particular package — the package was too heavy for that hang tab, the shape of the hang tab was

wrong, or it was placed incorrectly on the package. These reasons for failure are easy to identify and correct.

If it is determined that the right hang tab was used for the particular package, there are a number of other factors that can influence hang tab performance and need to be examined.

Environmental Consciousness



Hanging Environment

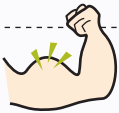
The optimal temperature performance range for application and display is between 60°-90° F (15°-32° C). When hang tabs are applied and displayed outside of this temperature range the adhesive will not have maximum bonding strength. For display in a refrigerated environment, our HangTite™ 203D adhesive should be considered, which has an optimal performance range of 40° to 80° F (4.5° to 26.5° C).

Location, Location, Location

Generally, the backside of the product/package is the best location for attaching the hang tab.



Size Counts



Package Size and Weight

Each standard Do-It Hang Tab style has a recommended maximum display weight, when used on an optimal product/package surface. The size of the product/package can affect the tilt, or peel angle, when displayed.

Let It Set

Wet-Out Time

“Wet-out” is used to describe the time it takes for the adhesive to completely adhere to the product/package surface. Generally, after 24 hours the adhesive will have gained maximum adhesion strength. Heat and adding pressure to the adhesive area may reduce the length of the wet-out time.

Shape Up

Surface Form

A hang tab that is placed on a product surface that is uneven will not perform as well as a hang tab placed on a flat surface. An uneven surface will cause a reduced percentage of the adhesive to be in contact with the surface.



Substrates

A hang tab is placed directly on the product or the product's package. If it's the product, then the hang tab needs to adhere to whatever material the product is manufactured — plastic, wood, metal, etc. If the hang tab adheres to the package, the substrate it adheres to could be plastic, paperboard, or a shrink film. Hang tabs perform differently on different substrates.

Plastics

Most soft plastics, including plastics for packaging, contain materials called “plasticizers.” These provide softness and flexibility to the plastic but can, over time, migrate to the surface of the material. Plasticizers can reduce the ability of an adhesive to stick when it is applied or can soften an already applied adhesive and cause it to lose its ability to support the package weight.

Paperboard / Boxes

Coatings, such as ultraviolet (UV) cured varnishes are commonly used on paperboard packages and can affect hang tab adhesion.

Shrink Film

Many products that hang with a hang tab are wrapped in a shrink film. Certain shrink films work well with Do-It Hang Tabs and others do not. A good shrink film is one that contains little or no slip agents (waxes or plasticizers). Slip agent materials are often added to shrink films to help them run smoothly during the packaging process. Slip agents make it more difficult for the adhesive on hang tabs to bond to the shrink wrap. Often, “print grade” shrink film works well with Do-It Hang Tabs.

We have also found that heat can affect how well the hang tab adheres to the shrink film. For example, a hang tab may stick better to a poor shrink film if it is applied just after the heat tunnel — when the film is still warm.

Shrink film problems can be complicated, detailed issues. At Do-It we are continually testing hang tab performance on different, popular shrink films. We can make recommendations and suggestions but we prefer to work with you and your shrink film supplier to solve any film/hang tab problems.


...or

Everything you need to know about using hang tabs BUT DIDN'T KNOW YOU NEEDED TO ASK

Dirty Little Secret

Contamination

Contamination of the adhesive area is one of most likely reasons for bad hang tab performance and can happen in a number of different ways. These include:

Dust/Dirt 

Silicone 

Grease/Oil 

Moisture 

Cleaners 

Coatings 

Surface coatings such as paint or ink may not be adhesive friendly or may be loosely bonded to the products so that they, not the adhesive on the hang tab, break away from the surface.

We Had to Say It ...

Do-It Corporation will guarantee its products to be free from defects in materials and workmanship. However, we cannot guarantee the performance of our hang tabs, as this depends on the package size, weight, surface, and the environment in which the hang tab is applied and hung. Do-It Corporation relies upon the customer to test the hang tabs' performance before use in the field.

Master of Packaging

Master Carton Packaging

How your product is master cartoned is often an overlooked consideration. When the product is packed into a master carton, with a traditional style hang tab rising above the top of the package, it will have pressure on it when the master carton is closed. This can cause the hang tab to become loose during transport, especially in cold temperatures. Using a fold-up or flexi style hang tab or changing how your product is packed in the master carton can solve this problem.

Test for Success

Other Considerations

We test hang tabs on a variety of substrates. If you have questions about the performance of our hang tabs on your product, we can perform a variety of tests to see how well our hang tabs hang your product. Or, if you prefer, we can share our protocols with you to let you perform the tests in your facility. In addition, we offer a variety of adhesive and plastic choices that can affect hang tab performance.

Make It Stick

Adhesive Choices

We offer several adhesives including our high performance HangTite™ 203A adhesive and our HangTite™ 203D adhesive for cool temperature environments.

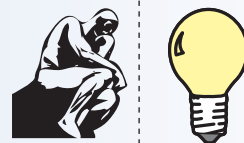
Multiple Choice

Plastic Options

We can manufacture a number of our products out of a variety of plastic choices. The choices include but are not limited to the following plastics:



- Polypropylene (PP)
- Polyvinyl Chloride (PVC)
- Polyethylene Terephthalate Glycol (PETG)
- Polyethylene Terephthalate (PET)
- Recycled Polyethylene Terephthalate (RPET)
- Recycled High Density Polyethylene (RHDPE)
- High Density Polyethylene (HDPE)



The Logical Conclusion

The Logical Conclusion

Do-It Hang Tabs should be applied to products/package that is clean, dry, and free from contaminants. Generally, the backside of the product/package is the best location. The optimal temperature range is between 60° and 90° F. For hand application, the adhesive should not be touched by a person's fingers. Pressure should be applied to the backside of the hang tab at the adhesive area to activate bonding and to promote faster wet-out.

As the leading hang tab manufacturer in the world we never want a hang tab to fail. But we know it can happen. Many times, the initial reaction is to blame the hang tab — "The hang tab just doesn't work." Often, it's not that simple. Our years of experience tell us, that most of the time, there are other factors involved that can affect how well a hang tab performs. And more often than not, these factors can be adjusted to help the hang tab succeed in hanging your product. It's important to know that performance failure can often be avoided and that Do-It will work closely with you and your suppliers to find effective solutions to any hang tab problem.

**Do-It
Hangtabs
=
Packaging
Success**

Testing Results You Can Trust

We look at both long-term hanging and short-term initial tack performance when we test a hang tab on a particular substrate. The example below is a report of the top films of various shrink film suppliers.

We test a variety of adhesives. This particular test was done with our standard, HangTite™ 203A Adhesive.

Long-Term Hanging shows how long a product will hang in a retail environment. For an accelerated, long-term test, we double the actual weight of the product and hang. We consider this test a success if product hangs for twenty days or more.

DO-IT CORPORATION Top Films Tested for 2010

Do-It Corporation Recommended Rankings

- Do-It 203A Adhesive**
1. **Supplier 1 - Sample 1**
 2. **Supplier 5 - Sample 1**
 3. **Supplier 4 - Sample 1**
 4. **Supplier 3 - Sample 1**
 5. **Supplier 2 - Sample 1**

HangTite™ 203A Adhesive

General Description:

Do-It HangTite™ 203A is a high-performance, high-endurance, rubber based adhesive coated on both sides of a PET carrier. This is our premium adhesive recommended for use in most hang tab applications with the best balance between good initial tack and great long-term bonding performance.

Do-It 203A Adhesive

Film	Sample	Long-Term			Initial Tack 0 Wet Out			Initial Tack 24 Hour Wet		
		1st Fail	2nd Fail	Total Failures Before 20 Days	Low	High	Ave	Low	High	Ave
Supplier 1	1	N/F	N/F	0	2.00	3.50	2.83	3.90	14.00	6.44
Supplier 5	1	N/F	N/F	0	3.10	5.70	4.11	8.00	16.00	12.07
Supplier 4	1	N/F	N/F	0	1.60	4.70	2.77	5.00	12.00	7.59
Supplier 3	1	N/F	N/F	0	10	3.90	1.91	3.50	12.70	5.70
Supplier 2	1	N/F	N/F	0	0.30	1.10	0.66	6.40	15.00	10.39

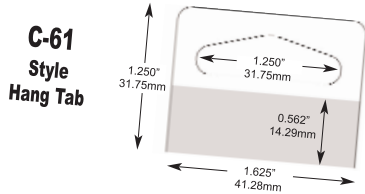
N/F = No Failures
- = To Be Tested

Standard: Success = Hang for 20+ Days
Based upon 10 data points for each test

Standard: 1.50 lbs of pull force

Standard: 3.00 lbs of pull force

Short-Term Initial Tack tests show how well a hang tab adheres immediately to a substrate. This is important for hang tab application consideration — does the hang tab adhere well enough to get through the production process?



Long-Term, load-bearing analysis based upon testing using C-61 (or equivalent) hang tab. Ranking determined by various test results accumulated from January 2007 to June, 2010. Ranking based upon 2X the recommended hanging weight 24 Hour Wet Out. Short-Term, Initial Tack Tests Performed on an Instron Pull Test.

Maximum Recommended Hang Weight: 397 g / 14 oz
Test @ 2x Rated Weight: 794 g / 28 oz

Long-Term Test - Single peghook @ 10° angle / 24 Hour Wet Out.

do-it hangtab.com
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Do-It cannot guarantee performance. You should carefully test the hang tabs and display strips for the desired performance results.



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