

# Why Doesn't Adhesive Tape Stick in the Cold?

Why doesn't your adhesive tape stick in the cold weather? Why does it become dry, brittle, and offers little-to-no tack? Why does it lift and peel within days?

To fully understand the reason why adhesive tape doesn't stick in the cold requires consideration of the variety of different types of adhesives available and the way they are created. Some are applied as a liquid and then they transform into a solid. Depending on their function, they are engineered accordingly.

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## What Exactly Happens to Tape in the Cold?

What makes [adhesive tape](#) different from other adhesives is that they have the properties of *both a liquid and a solid*. The liquid component is needed to provide the "wetness" (tack or stickiness) for good initial contact, and the solid component is critical to resist any forces (AKA shear strength) that could threaten to remove the application.

Yet when cold temperatures occur, the liquid component of the adhesive tape hardens, similar to what happens to butter in

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the refrigerator. The tape loses its natural form and its overall tackiness. It can therefore no longer make the adequate contact needed for good adhesion. If the temperatures continue to drop, the tape will eventually freeze, turning the liquid component into a tack-free solid.

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## When Does Tape Freeze in the Cold?

So at what temperature does this happen? It depends on the type and design of the adhesive. Typical adhesive tapes will freeze long before the freezing temperature of water is reached; while other specially designed tapes will continue to stick below freezing temperatures.

When the tape won't stick because it's too cold, you have two options:

- Increase the temperature of the tape and the surface the tape is applied to; ideally to around 20 degrees Celsius.
- Get a tape that is specifically engineered and designed to work in cold weather

Bottom line is that when you are working on a tape application in cold weather, you will need a cold-weather tape that's right for the job. Not all tapes are designed to work in this type of weather. ECHOtape's global head office is in Canada,

so we have been attuned to this issue since the inception [of the company.](#) Look to us when you need a cold-weather tape that can work!

For more information about tape visit [The Complete Technical Guide to Adhesive Tape.](#) or [contact us](#) with any questions you may have about your cold weather tape requirements.

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## Why Adhesive Tape Doesn't Stick (And How To Make Tape Stick Better)

No matter the situation, ***"it won't stick"*** is the single most common complaint we hear about any adhesive. And the tape gets all the blame.

But after four decades of investigating tape complaints and perfecting sticky formulas for many applications, we've found that **the problem is rarely the tape alone.** Here's why your tape doesn't stick, and a checklist to help you troubleshoot your sticky issues

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# Why Your Tape Doesn't Stick – A Checklist

According to Risa Edelstein, ECHOtape's Director of Marketing:

*"Nine out of 10 times, when customers say, 'Your tape is not working,' the problem is not the tape. Usually, the wrong tape is being used – be it one that is not engineered to adhere in extreme temperatures or remove easily from stucco. Temperature, weather, surface conditions, chemistry and application all play vital roles in sticky success – or failure as the case may be."*

Since there are so many factors that go into the effectiveness of tape, we created a checklist to help you troubleshoot your sticky issues.

## Has The Same Tape Worked Before?

If you used the same type of tape before and it worked, but now it doesn't, then consider what has changed. Are the conditions different – colder, wetter, hotter? Did you apply it differently?

This should be the first step in diagnosing why your tape isn't sticking.

## Is The Tape New?

If the tape is new and it isn't sticking, it might be the wrong tape for the job. Visit [The Complete Technical Guide to Adhesive Tape](#) to find a downloadable infographic on the subject.

## Was The Surface Clean?

Ideally, the surface must be **clean, dry, and oil free**. When in doubt, wash the surface with rubbing alcohol and dry it thoroughly with a soft cloth.

## Was It The Surface Texture?

Do you have a flat, smooth surface that makes good contact with the tape's adhesive? Or do you have a rough surface that leads to minimal contact and requires a thick adhesive? Try testing the tape on a flat, clean surface (metal or glass always works well), and see if your tape adheres well there. If so, your problem may be a rough surface.

## Could It Be Chemistry?

Some surfaces like polyethylene or PVC or concrete are especially hard to adhere. A tacky tape will help, but if not, try a different roll and see if the trouble persists. Or as described above, try the tape on a flat, clean glass or metal surface. If it sticks well, chances are the problem is the surface and not the tape.

## Are You Trying To Stick To Cardboard?

If so, remember that cardboard is sometimes made from recycled material, which tends to have many small fibers on the surface that break away very easily. You may need a tape that is designed explicitly for recycled cardboard.

## Could The Tape Be Too Old?

Like most products, adhesive tapes will deteriorate over time and lose their adhesive properties. Does your problem disappear when a fresh roll of tape is used? If not, it's time to toss out that old tape.

## Could It Be The Temperature?

Most tapes won't stick if the roll or the surface is too cold. Learn more about [cold weather issues here](#).

## Was It Installed Properly?

It may seem simple, but knowing how to apply tape properly plays a huge role in whether or not the adhesive sticks. As the name '*pressure sensitive adhesive*' implies, there needs to be an application pressure across the entire width to get the contact necessary for a good bond. If you don't have good pressure, you won't have a good bond.

## Could It Be You?

Are your hands clean, or could you be inadvertently causing

contamination? For example, if you recently worked on a car engine or used hand cream, you could be adversely affecting the surface. Clean your hands a try again.

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## How to Make Tape Stick Better



If you're struggling with duct tape that doesn't stick, or any other type of tape for that matter, there are a few steps

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you can take.

## Clean the Surface

Tape works best when the surface area is clean, meaning 100% free of dirt, oil, and debris. You want to eliminate anything that can get between the surface and the tape in order to create direct contact with the adhesive.

## Use the Right Tape

Tape is extremely versatile, but that doesn't mean that one kind of tape can handle every type of job (although duct tape comes close). When you have a project that requires joining two surfaces, make sure to use the right tape for the job. For instance, if the surface is not very smooth, use a tape with a thick adhesive.

For more information, check out our guide to [choosing the right tape](#).

## Store Your Tape Properly

Store your tape at room temperature, away from light and moisture to prolong its longevity. Tape stored in wet and hot environments will degrade much faster than properly stored tape. Cold temperatures can also dry out the adhesive, rendering the tape virtually worthless.



## Use New Tape

If your old tape wasn't stored properly, or if it's very old, it's time to pick up a new roll. Just like anything, tape isn't invincible to the effects of time. And double-sided tape is twice as susceptible, so it needs to be replaced more frequently.

## Check the Temperature

If the tape or the surface is too hot or too cold, it won't stick. If it's sweltering outside, wait until the evening when it cools down to apply the tape. If it's too cold, try to warm up the tape and the surface before application.

## Clean Your Hands

If your hands are greasy or dirty, they can disrupt the adhesive bond of tape. If you recently worked with oil or apply lotion, grease can get on the tape and ruin its stickiness.

Likewise, dirt and mud can get between the surface and the adhesive and disrupt the bond.

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## When In Doubt, Test It Out

Our motto at [ECHOtape](#) is: **When in doubt, test it out!** Start

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by simply using a different roll of tape – preferably the same kind, but from a different batch – to determine if the problem persists.

It's all about experimenting and problem-solving.

If you've gone through our checklist and tried everything, but your tape still doesn't stick, [contact us](#). We love to solve tape challenges!

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## 8 Reasons Double Sided Tape Will Fail

Heavy-duty double-sided tape is useful in a [wide range of construction scenarios](#), but no tool is perfect for every job. Sometimes, adhesive tape doesn't stick.

It's easy to assume the tape itself is to blame, but truth be told, there are some other usual suspects to consider first.

Here are the 8 most common reasons your double-sided tape won't stick and how to prevent tape failure.

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## 1. Failure to Test

We get it. The package label made lofty promises, but generally speaking, adhesive testing should always be done *before* using double-sided tape.

Not all [double-sided tapes](#) are created equal.

Maybe the one you chose isn't aggressive enough and it fell off. Or, perhaps, it's too aggressive and caused damage to the surface it was applied to. When in doubt, test the adhesive first to prevent tape failure.

***Related:*** [Tips on Choosing the Right Tape](#)

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## 2. Temperature Tape Failure

Carefully factor in the temperature. **Are both the tape and the surface at least 18°C/65°F?** The tackiness of the adhesive tape is very temperature-dependent, and the colder the conditions, the weaker the bond will be. And on the flip side, extremely high temperatures can cause the adhesive to melt and lose its strength.

If you must work at lower temperatures, then use a temperature-sensitive double-sided tape specifically designed for [colder climates](#).

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### 3. Dirty Surface

Traces of dust, dirt, grease, and even the slightest hint of moisture before bonding will contaminate the adhesive surface and act as a barrier between the two.

To prevent tape failure, prepare the surface, give it a quick wash with rubbing alcohol and dry it with a clean cloth.

**Related:** [How to Make Tape Stick Better](#)

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### 4. UV Exposure

Prolonged exposure to ultraviolet light can cause certain chemical materials (such as natural and some synthetic rubbers as well as polyethylene) to become hard and brittle. Absolutely not the qualities you want in a tape that needs to hold for any duration in a particular application.

If the area where you will be using the tape sees above-average UV exposure, you may need to consider a different tool for the job.

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## 5. Chemical Migration

Liquids such as oils, plasticizers, and dyes are a lighter weight material and can therefore easily “move” from the product (the surface) to be absorbed by any adjacent material (the tape). This movement is known as “migration.”

For example, consider PVC: plasticized to provide flexibility, it is a lower-cost, lower-molecular weight material. If a typical pressure-sensitive adhesive is applied to PVC and allowed to remain in place for a prolonged period, the plasticizer will migrate from the PVC surface into the pressure-sensitive adhesive; making the glue a gummy mess.

When using this type of material, choose a high-quality, double-coated tape specifically designed for PVC applications. This will considerably reduce any tendency to migrate, thereby preventing tape failure.

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## 6. Improper Calculations

The correct surface contact to weight ratio plays a factor. Think of it this way: Is there a big enough surface of sticky stuff applied to a substrate to hold the weight of the object stuck to the other side of the tape? Likewise, does the “other side” have a large enough surface of sticky stuff

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applied to it to hold the weight of the object? For example: If you need to adhere poly sheeting to a wall, you need to have a wide enough strip of double-coated tape to be able to hold the weight of the poly sheeting to the wall. In this scenario, 1/4" wide might fall, but 1/2" might do it.

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## 7. Improper Storage

If you leave milk on the counter overnight, it spoils. The same is true of building supplies. When materials are bought in bulk and stored in dusty, wet or extremely hot or cold conditions for extended periods, the adhesive deteriorates. Read more about [extending the shelf life of your tape here](#).

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## 8. Improper Installation

It's not always, "Roll and go".

Did you put enough pressure on the tape?

Did you clean the surface before applying the tape?

Did you remember to remove the liner? (*Yes, that happened!*)

Sometimes preventing tape failure is as simple as slowing down and paying attention to detail.

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## How To Use Double-Sided Tape

Now that you've figured out why your tape didn't stick, here are the best ways to ensure success.

Whether you're using general purpose tape for school projects or [permanent double-sided tape](#) for industrial projects, the process is generally the same:

1. Choose the right tape for the job.
2. Ensure the tape and the surface is warm enough.
3. Clean the surface with rubber alcohol.
4. Test the surface.
5. Apply adequate pressure.
6. Avoid sun exposure.
7. Store your tape correctly before use.

For more information about double-sided tape, please visit [The Complete Technical Guide to Double Sided Tape](#).

To learn more about how ECHOtape can help you, read about our [tape obsession here](#).