

The
COMPLETE

ROOF LEAK

STEP-BY-STEP TRACKING
AND TROUBLESHOOTING

Emergency Guide

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“Fixing a leak is easy when you know how to find it!”

Sergei Churbanov
Roof It Right Founder

In this guide, we have provided you the top practices that our Roof It Right specialists use to find and troubleshoot roof leaks.

The Complete Step-By-Step Guide to Troubleshooting a Leak

Attention! Climbing on a roof is a high-risk, life-threatening job as it involves the risk of falling from a height or dropping an item on someone below.

We strongly recommend that you delegate this dangerous task to a trained professional. If you decide to fix a leak on a roof by following steps in this tutorial, you are doing it at your own risk!

In this guide, we will not include the fall protection instructions like proper installation of ladders, wearing harnesses, ropes and anchors points installation. All of that is covered by OSHA standards and can be found here: <https://www.osha.gov/fall-protection/standards>

If you consider a quick repair of your roof NOTE that it can compromise your insurance claim coverage in the future! Work only with a roofer who knows how to help you comply with your insurance!

It is important to note roofers use safety equipment such as special roofing shoes like Cougar Paws, Harnesses, Pitch Hopper and reliable ladder! If you buy all of that, it will cost you a lot more than a free inspection!

In most cases the emergency installation of a tarp is reimbursed through your insurance company if you have a claim. We have a team of insurance experts and we will happily work with your insurance.

At Roof It Right, we offer free inspections!

Our professional inspector also provides emergency tarp installation and will let you know the chances your roof repair has to be covered by an insurance claim.



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<http://www.goroofitright.com/>



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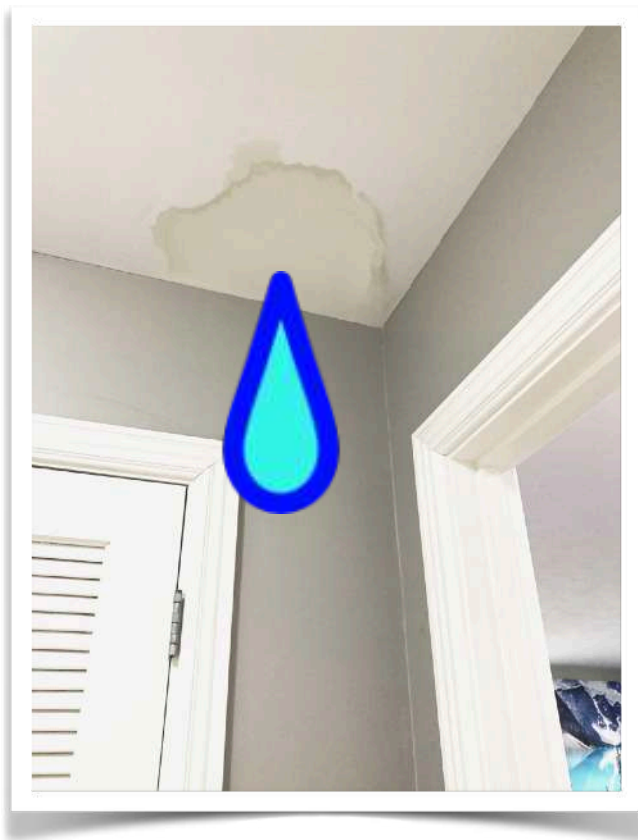
To Fix a Roof Leak You Need to:

- 1  Locate the Leak Source
- 2  Stop the Leak

Part 1

Locate the Leak Source

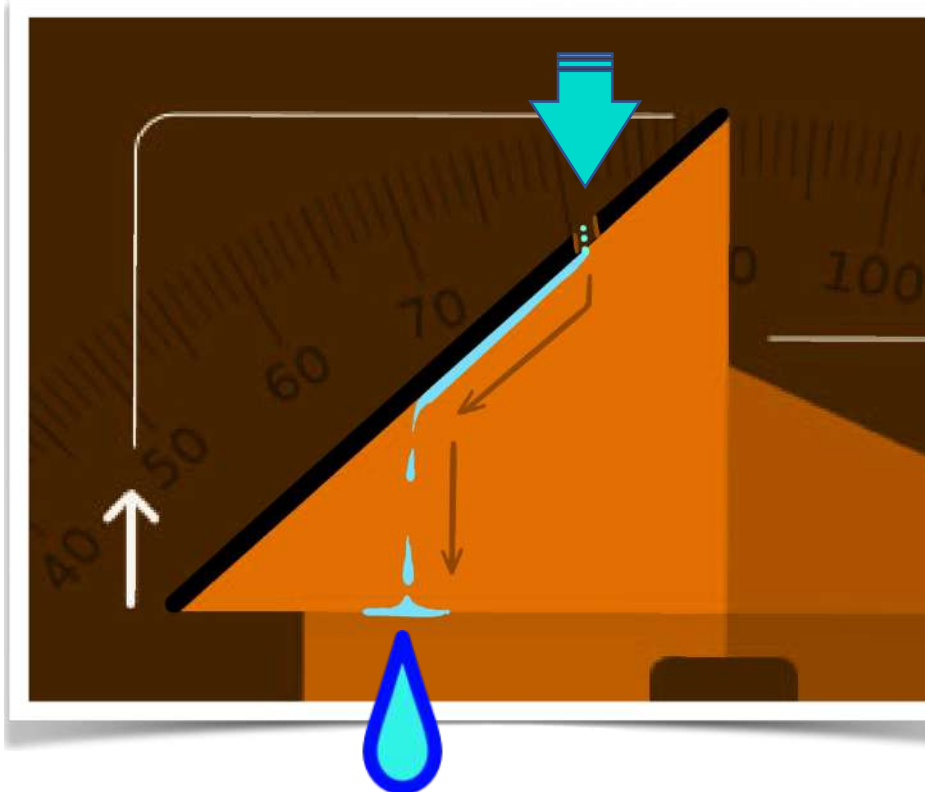
The first and most obvious indication that you have a roof leak is usually a stain on the ceiling or a wall. Discovering a Moisture Stain on the ceiling will be your first clue to tracking down the leak source.



A Tip!

- If you have a window in the room, try to memorize objects like a tree or building and its position and distance from the stain. You can use your phone to take a picture from the window, too. You can use it later when on the roof to navigate to the exact spot!

Finding a stain though, does not always guarantee that the leak source is positioned directly above the spot!

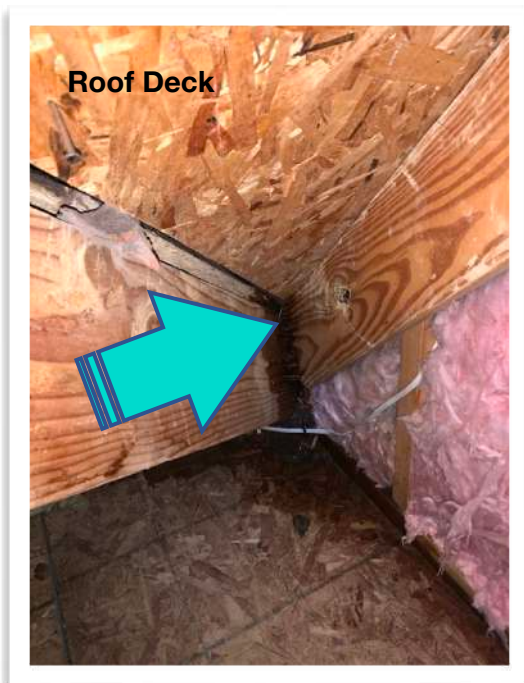


If the slope of the roof is steep, **the water can travel to a lower point** before finding it's way to the ceiling.

If the damage on your roof is **not** obvious, such as **Missing Shingles**, a **Pop Nail**, etc, you can do the following:



The next logical and wise thing to do in the search for the origin of the leak is to check the roof deck inside the **Attic Space**.











Tips!

- In the Attic Space, again you will be looking for a **water stain on the roof deck** as well as possibly wet insulation.
- In some cases, you may not see any evidence of a leak. You may choose to wait for the next rain and check your attic space then. Another option is to spray your roof with a garden hose while someone monitors the attic space for a compromised area.

Top Leak Causes

All possible causes of roof leaks can not be covered here, but usually the culprit is one of the following:

 <u>Damaged Shingles</u>	30% Chance	Wind or Storm Damage - Missing Shingles
 <u>Pop Nail</u>	10% Chance	Bad Roof Ventilation-Contraction and Expansion Moisture, Aging
 <u>Blisters</u>	5% Chance	Heat, Aging, Ventilation Issues, Poor Quality Shingles
 <u>Pipe Leaks</u>	10% Chance	Animal Damage, Dry Rot, Low Maintenance, Natural Wear and Tear
 <u>Flashing</u>	20% Chance	Poor Workmanship, Natural Wear and Tear, Chimney Flashing - No Chimney Cap, Dormer Flashing, Wall/Roof Flashing, Aging
 <u>Condensation</u>	15% Chance	Poor Roof Ventilation and Contraction and Expansion of the Roof
 <u>Chimney</u>	5% Chance	Aging or Missing Crown
 <u>Other</u>	5% Chance	Bullet, Skylight etc.

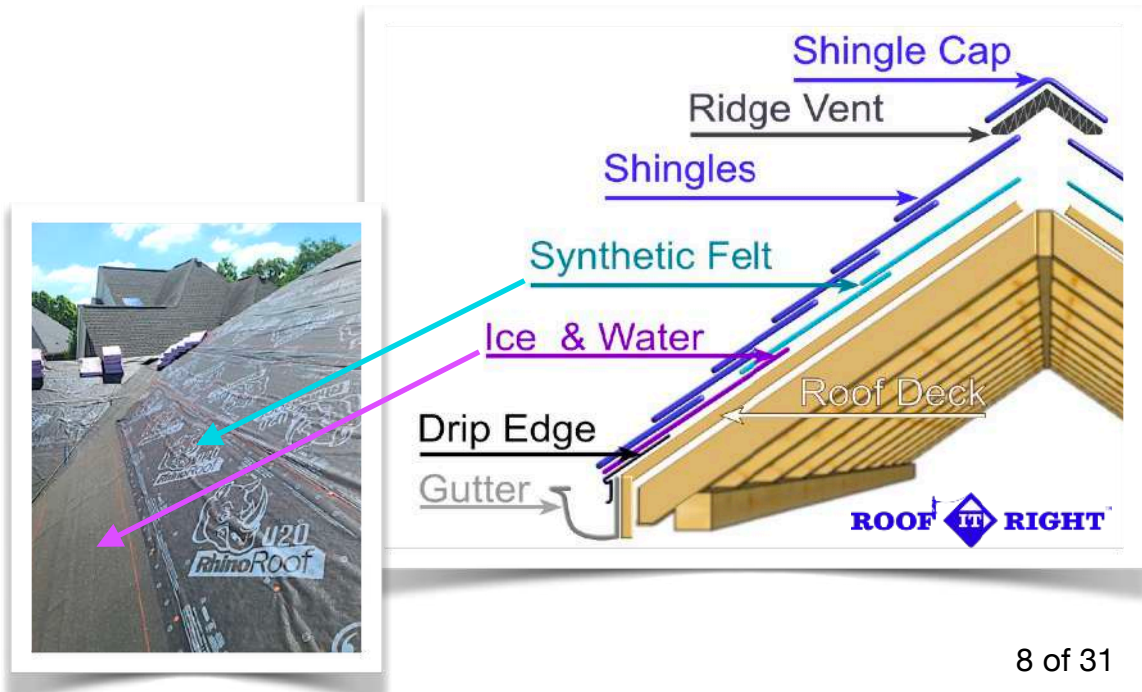
Damaged Shingles

Damaged, missing shingles or **missing tabs** of shingles are the first and most obvious damage you might notice on your roof.

Did you know that the asphalt-coated shingles on your roof aren't inherently waterproof? They're designed to shed water due to their overlapping fish-scale arrangement. While the sticky asphalt helps them adhere and usually holds up, during powerful storms with upward water pressure, a waterproof underlayment like synthetic felt or ice guard becomes crucial. This prevents potential leaks, highlighting the significance of proper underlayment in extreme weather."



When roofers cut corners, they may skip that important (underlayment) layer of a quality shingle roof.



After 10-15 years, the sealant between shingles deteriorates, though that doesn't necessarily disqualify the roof from an insurance claim.

Most asphalt shingles are manufactured with a thermally activated asphaltic sealant which bonds the shingles together once they are applied to the roof and exposed to a sufficient period of heat from sunlight. It usually takes about 10 years before they start losing their adhesive power.



This is what makes shingles vulnerable to wind damage. The wind can flip the loose shingle tabs, gradually loosening the nails that secure them. You will usually notice a crease on the shingle tabs that are no longer adhering.

The wind has bent the shingle back, causing the asphalt granules to peel off. While **these cracks** themselves are not reason for a leak in normal conditions, when storm winds push back, water will get in.

Avoid using silicon to to fix creased shingles. It may violate your insurance policy.



If you feel like you have a reason for a claim and you need an advocate, call Roof It Right. We have a dedicated team of Insurance claim specialists and will work with your insurance.

Pop Nail

Pop nails are also a common reason for roof leaks.



A nail usually pops up when the temperature changes. Expansion and contraction can cause the nails to pop up and lift the shingles. **Improving the ventilation of your attic space will decrease the chances of that happening.**

Another reason could be poor workmanship (e.g., the shingles were not nailed tightly or correctly when the roof was installed).



Popped nails do not lay flat to the roof, thus lifting the shingles, leading to a leak.

Sometimes the crease is so subtle that only a trained eye can find it.

Quick fix!

- If the pop nail is under the shingle tab, just nail it back.

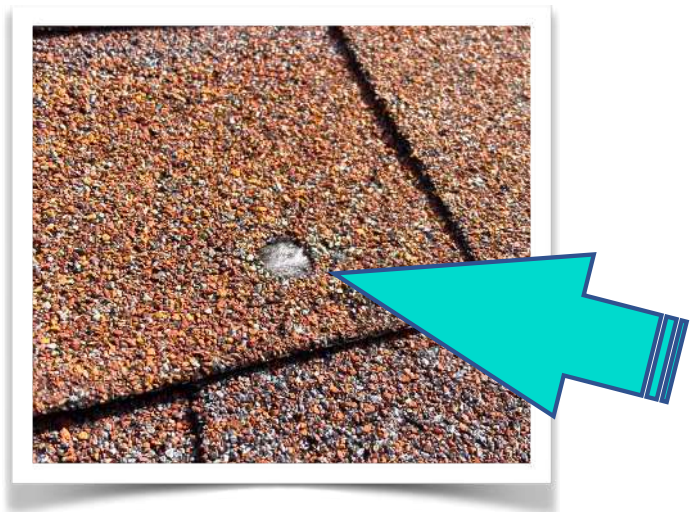


•If the pop nail penetrates the shingle, like in this example, the nail can be removed and the hole sealed with silicon or roof caulk. But be careful! Too much could compromise your insurance claim, so consult a professional if you are not sure.

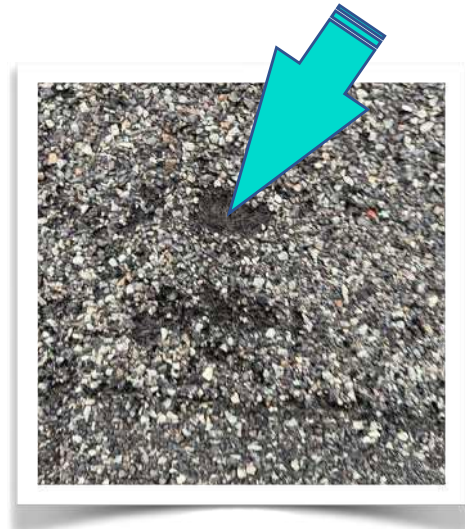
Blisters

Asphalt shingles are composed of three layers: the paper or fiberglass backing, asphalt, and granules.

Sometimes manufacturing errors result in moisture getting trapped between these layers. That along with inadequate attic ventilation can compromise your shingles' effectiveness against the natural elements. This can happen during the summer months when hot air rises and gets trapped in your attic. The result is **blisters**.



Improperly installed shingles can block trapped moisture. If the adhesive wasn't applied properly, moisture can accumulate and evaporate under your shingles. During hot days this trapped moisture expands, sometimes along with vapors from the heated asphalt layer, resulting in **blisters**.



Blistered asphalt shingles may not always be a reason for a roof leak but they make the roof more susceptible to leaks.

Blisters are often a reason for insurance companies to deny a claim as they are interpreted as lack of maintenance. This is why regular inspections with a trusted local roofer like **Roof It Right** are important.

Pipe Leaks

Damaged pipe boots can also be the issue.

Lead boots around pipes are often damaged by animals like squirrels. Plastic boots can suffer dry rot. Aging is another factor that can adversely affect the waterproof integrity of the seal around a pipe boot.



Vent pipe flashing

protects your roof from moisture by ensuring there's a tight seal around any openings.



Before



After

A leak usually occurs if the crown cap **A**, the middle cap **B**, or the flashing **C** are not installed/missing (see picture), or ice guard has not been installed around the base of the HVAC pipe.





A leak can come from not only the roof, but also from a broken pipe.

For this reason, if you find wet insulation in the attic, but do not see an obvious roof leak, check the HVAC pipes, water heater pipes, and any other water system pipes in the attic space!

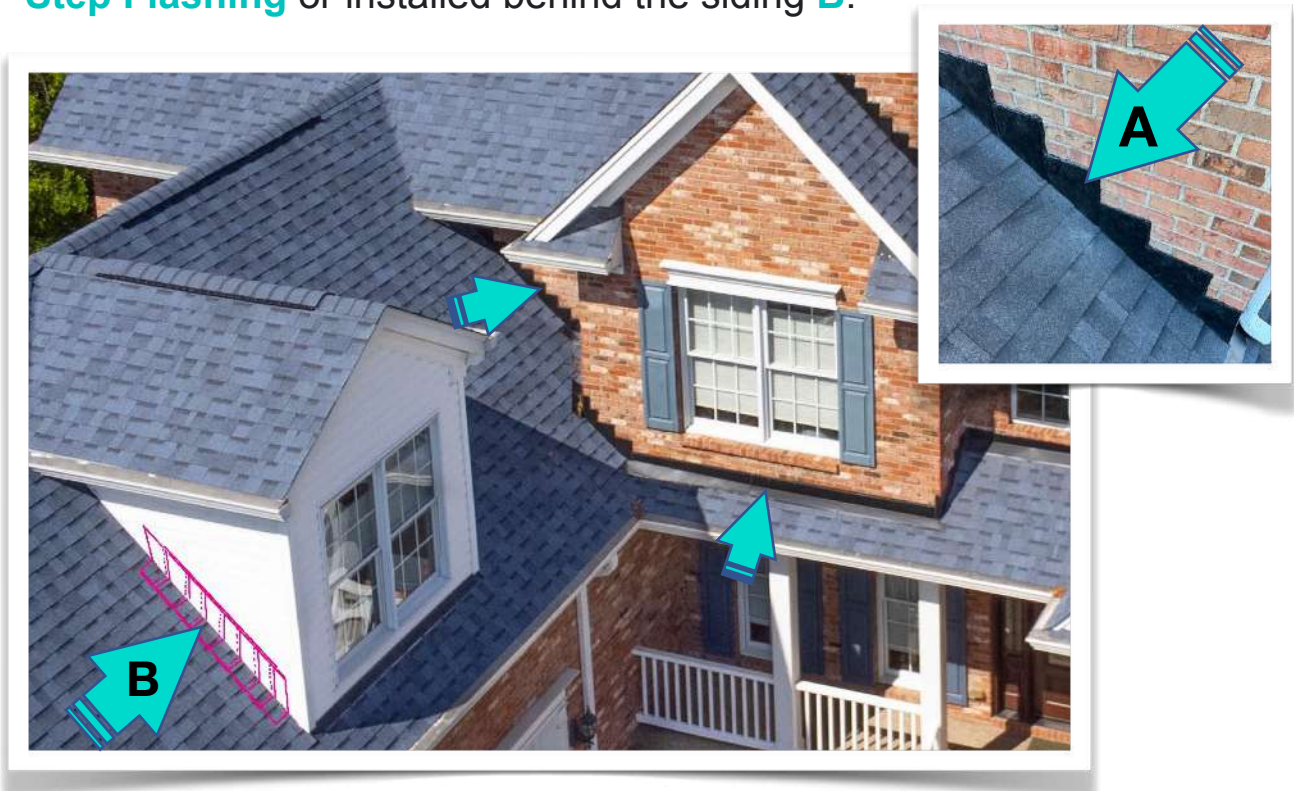


Quick fix!

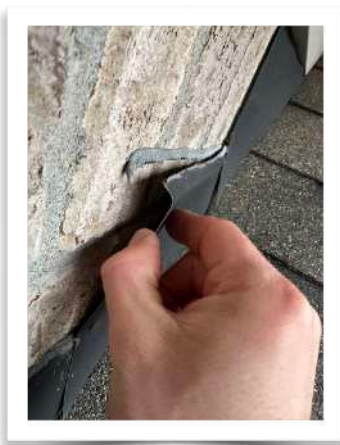
Fixing pipe flashing could be just a matter of filling the holes with silicon..

Flashing

Flashing is a flat, thin piece of metal used to help waterproof the perimeter and protrusions of roofing systems. Flashing is used to direct water away from the seams and joints and prevent it from entering the openings and cracks in a roof. It can be visible like **A Step Flashing** or installed behind the siding **B**.



Often the leak comes from damaged or improperly installed flashing.



Roof silicon can fix the leak, but when it comes to flashing, professional help is strongly recommended.





Dormer Flashing

Often a leak can be coming from poorly installed Dormer Flashing if the underlayment is not properly overlapped, for example.

Windows/Siding

Likewise, leaks often develop along windows or siding!

Unfortunately, unless you are a construction specialist, to troubleshoot this type of leak, we recommend requesting a professional inspection.

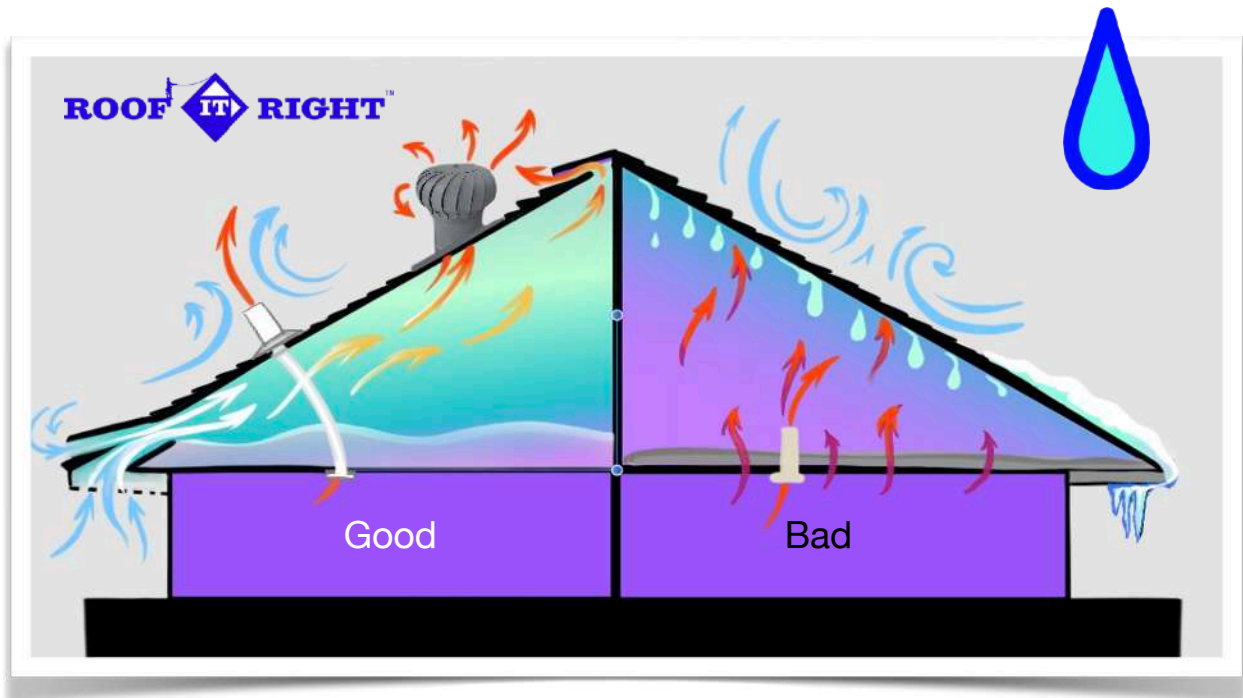
Regular flashing maintenance is strongly recommended due to the natural aging of silicon and other types of sealants.



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Condensation

Condensation occurs in attic spaces when the ventilation system is poorly designed. For instance, **too many ridge vents on different dormer heights, no intake vents, clogged soffit vents, out-of-order power vents or bad insulation** all can lead to **overheated attic space** and condensation.



Another common mistake is leading the moisture or heated air from a bathroom or another exhaust pipe into the attic space instead of all the way to the roof. In general, condensation accumulates when there is either too much warm air circulating upwards from living spaces or when there is inadequate roofing ventilation or insulation.

At Roof It Right, we have a dedicated team of professionals, designing and optimizing roof ventilation. Such an approach will not only solve the condensation problems of your roof, but will also save on heating and cooling costs.

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Chimney Leaks

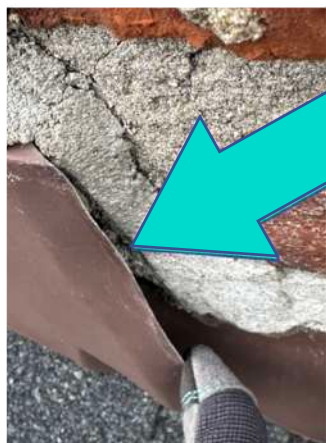
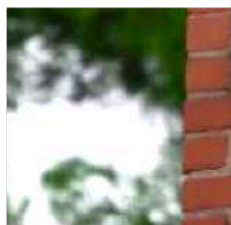
Cracks, flashing issues, compromised, or even missing crown or chimney cap can lead to the elements breaking through the exterior of your home!



Sometimes you can get away with filling the cracks or flashing gaps with roofing cement or caulk. But often you need to install a chimney cap.



If there is no chimney cap or the flashing is not properly installed, water can enter through the chimney.





Silicon or caulk alone might not be a good enough solution to keep water away from flashing that is installed at the base of the chimney without a chimney cap.

Other Roof Leak Reasons

While there are numerous other reasons for a roof leak, the above are the ones we at Roof It Right see on a daily basis. However, here are a few more that can lead to a roof leak on rare occasions.

Bullet damage People rarely consider that gravity makes the bullets come back after emotionally shooting a gun into the air. Usually the bullet stops in the roof deck, but the force of gravity is enough to penetrate the shingles. And yes, it can kill a person!



Skylights The top 3 mistakes that can lead to leaks around a skylight are: Neglecting to install ice-guard around the skylight, poor workmanship in the flashing installation, and improper positioning of the shingles around the skylight. Aging can also play a role.



If, after using the tips above you still have no clue where the leak is coming from, do one of the following:

On rare occasions, a roof may be built poorly without the installation of a waterproof underlayment layer. It could be really hard to troubleshoot a roof leak if the roof has been poorly installed because someone wanted to save money on the whole underlayment layer. If all the shingles are in place, it is nearly impossible to detect that this is the reason the roof is leaking. This is one of the reasons that roofer after roofer may not be able to find the leak source.

1. If after applying all the steps above, you don't see any evidence of a leak in the attic space or damage on the roof once the rain stops, try this: Wait for the next rain and examine the attic space then. Or you may choose to use your garden hose to direct a steady, consistent stream on the suspected portions of the roof, while someone inside examines the attic.
2. If none of the above seems to work, you have one more option you can count on!

Call **ROOF IT RIGHT™** a Roofer You Can Trust!

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Part 2



Stop the Leak

Important
Take pictures!



After identifying the damage and before any troubleshooting takes place, you need to document the situation! Take a lot of pictures! Use your phone or camera to capture multiple angles of the damage.

Having evidence of the damage will help you when working with your homeowners insurance, if you have it.

Emergency DIY Roof Repair





In the cases where the roof has a large hole created by something like a fallen branch, cover it with a 1/2-inch or thicker sheet of plywood or OSB. Use screws to secure it in place.

Tarp Installation

Now that it looks like you know where your leak is coming from, it is time to install the emergency **Tarp** or **Synthetic Felt**.

There are some advantages to installing synthetic felt instead a tarp, especially when it comes to small-sized damage. See the chart below:

the Pros and Cons of **TARP** vs **FELT**

Material	Advantages	Disadvantages
Tarp 	<ul style="list-style-type: none">• It comes in large sizes• You can cover a big area that is damaged	<ul style="list-style-type: none">• Nailing a tarp over a large area can damage additional shingles that you may have to replace later <p>*Note You usually need to overlap a tarp over the ridge to protect a certain area of the slope from moisture. Thus you damage shingles on both slopes of the house</p>
Synthetic Felt 	<ul style="list-style-type: none">• When tucked under healthy shingles above the leak, only a small area may need to be covered, avoiding additional damage caused by using cap nails. No need to overlap the ridge!	<ul style="list-style-type: none">• It usually comes in rolls that are just 48" wide. One side will need to be tucked under the upper shingle layer as shown, so you are left with a limited width to work with. If the damaged area is larger, it will be hard to cover!

List of Items Needed for the Tarp/Felt Installation:

1. **Tarp or Synthetic Felt.** Depending on the size of the damaged area. Synthetic felt Rolls are 48" wide. For bigger areas, you would need to use a tarp cover. They vary in size. Keep in mind you will need a 2 foot clearance around all sides of the damaged area.



Tarp <https://www.homedepot.com/b/Paint-Paint-Supplies-Tarps/N-5yc1vZci18>



Synthetic Felt <https://www.homedepot.com/s/synthetic%20felt?NCNI-5>.



2. Cap Nails

Cap nails <https://www.homedepot.com/s/cap%20nails?NCNI-5>



3. Hammer You will need any type of hammer for the cap nails, to keep the tarp in place.



4.Flat Pry Bar <https://www.homedepot.com/b/Tools-Hand-Tools-Wrecking-Pry-Bars/N-5yc1vZc24o> You will need this tool if you install synthetic felt. Usually shingles stick together. Use the pry bar to lift the shingles above the leak source so you can tuck in the felt.



Remember, as roofers we always use personal protective equipment such as special roofing shoes like Cougar Paws and Pitch Hoppers like these shown in the picture.

Installation Process

1. Felt



First, let's consider Synthetic Felt Installation for blocking off smaller areas. The advantage of this technique is that you don't need to overlap the ridge, limiting the area that you will have to damage with cap nails.

You need a minimum of 2 feet of excess felt around all sides of the compromised area.

Next, on the peak side of the leak source, tuck in the felt under the shingles at least 1 row above the leak source. Make sure that the end of the felt is pushed up at least an inch more than you can see in between the shingle gaps or tabs. This way water can not enter under the synthetic felt!

Nail the felt using cap nails.
You need a nail every 1 foot along the borders of the tarp.





Even in the case of larger damage, if the affected area is not near a valley, two pieces of felt can be overlapped (just like giant shingles) starting at the the lower side of the slope.

The second layer of felt will cover one foot of the first and will be tucked under the shingles above (see Picture-C)



2. Tarp



Tarp installation is a bit different. The tarp edges are folded and thicker. It is very hard to tuck them under shingles. This is why tarp is usually installed by **overlapping the ridge** to prevent water from entering under the tarp.

A Tip!

Remember: **Don't overkill it!**

The bigger the area you cover, the more shingles will need to be replaced afterwards because of the damage that cap nails will cause. This doesn't apply if you are planning a complete roof replacement.

Need an insurance claim advisor and advocate?

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Measure the surface area and buy a tarp that can overlap it by at least 2 feet all around, plus overlap the ridge by at least 2 feet.

Tarp installation can be extremely challenging and dangerous for a single person, especially when it's windy and the tarp is large in size.

So first, check the weather forecast. Make sure that it's safe. Position your tarp and hold it down.

Secure the tarp in place with cap nails every 12 inches.



Tarp installation at some places can be tricky!

Roof Valleys



A roof valley is formed where two roof slopes meet.

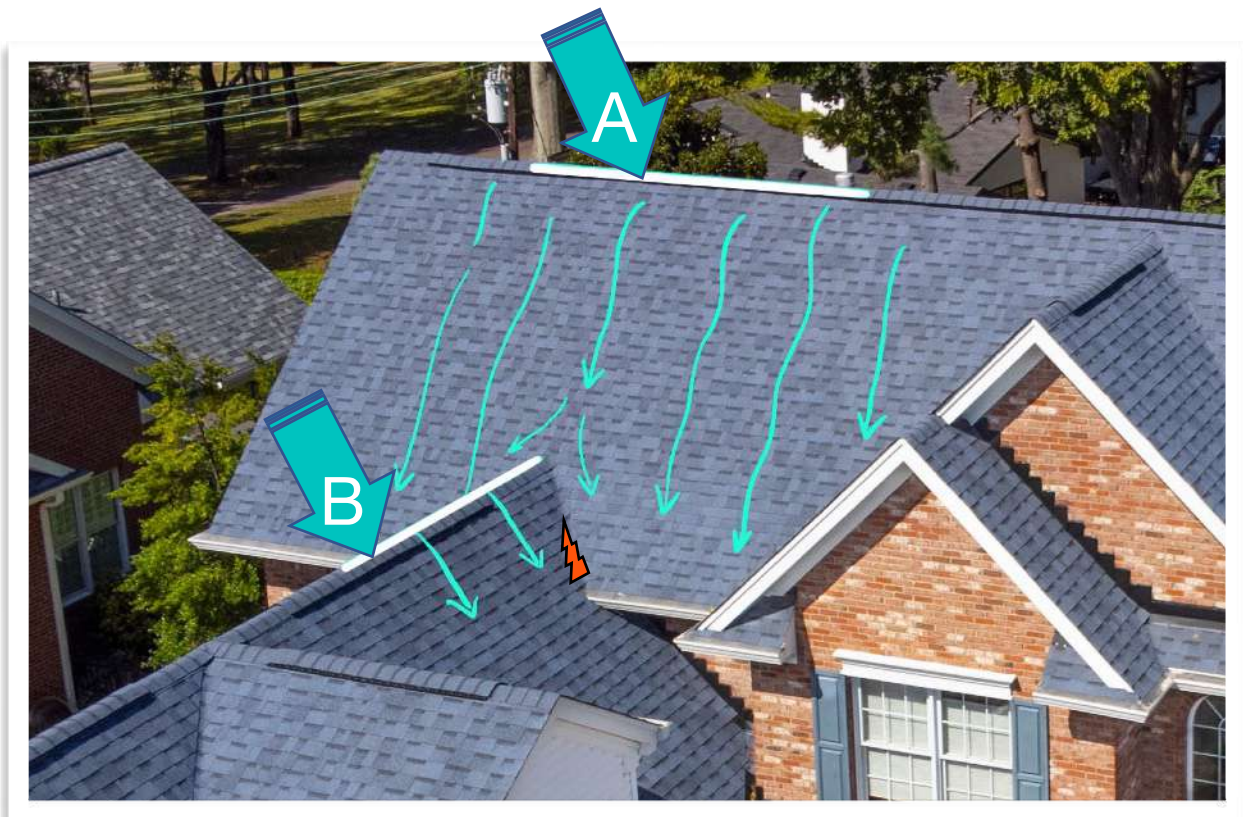
Water collects in a valley to flow off the roof. Your choice of valley installation method is critical because, when improperly installed, valleys are risks for serious leaks.

For instance, when the compromised area is just in the valley of the roof, tucking in the tarp or felt under the row of shingles above will not work.



When the leak source in the valley is close to the ridge, it is easier to cover it with a tarp.

The trickiest situation to handle would be probably when the damaged area is at a lower point of the valley. When that happens, the area needed to be covered by the tarp gets larger and harder, as the water flow from many higher points of the roof can reach it. The same is true for valleys where two higher dormer slopes meet.



To protect the water from accessing the leak area, your tarp needs to overlap both Ridge **A** and Ridge **B**.

The danger here is that if you try to use a tarp to cover it, you will first need a very large piece of tarp and second you may end up damaging a big area of your shingles with the cap nails. When you overlap the ridges, you will damage shingles on the non-leaking slope as well as the leaking one. While that shouldn't be a concern if your insurance will cover a full roof replacement, if you are planning to file an insurance claim keep in mind the following: The damage caused by the nails holding the overlapping tarp on the healthy slope is often



considered just consequential damage and insurance may approve a full roof replacement instead of a single slope or repair. **Sometimes insurance companies classify damaging the other slope or too big of an area as vandalism.** And if you are not going to file a claim, you should be prepared to pay for the repairs (shingles replacement) yourself.

Not sure what to do?

Don't hesitate to call Roof It Right to schedule a free inspection. We have experience with all the hard situations like this one. We also have a dedicated team of insurance claims specialists. We are fully equipped and ready to assist you and look out for your best interests!

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Some companies like UTARPit™ make self-adhesive tarps.



With the conventional method, nailing a tarp over a big area of your roof can jeopardize the integrity of the asphalt shingle, thereby, creating additional expenses for the insurance companies. UTARPit™ eliminates the need for hammers, nails, wood strips, bricks, and sandbags.

Other Ways to Fix a Leak

Whenever a tarp is not an option (like in the example mentioned earlier of a leak being at a low point in the valley) you can use one of the following:



•Roofing Silicon aka Caulk



•Roof Cement



•Roof Tape like Eterna Bond, Gorilla Patch, or Seal Black Waterproof Duct Tape

And there you go! You are now fully equipped with access to the top practices used by our pros to find and troubleshoot roof leaks. We use the same Guide to educate our own team.

Remember! As roofers, we always use protection such as special roofing shoes like Cougar Paws and Pitch Hopper.

One more time, any roof-related task is a HIGH RISK JOB. Our advice is to leave it to the professionals. So even if your roof pitch is not very steep, consider the safety measures mentioned earlier!

Our specialists perform emergency tarp installation and will let you know what the chances are that your roof will qualify for an insurance claim.

In most claims, emergency tarping is reimbursable through your insurance company. We have a team of insurance experts and we happily work with your insurance.

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