

# Roof Inspection Guide

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## Introduction

The purpose of this inspection guide is to ensure that you have properly inspected the roof and have documented all necessary aspects of the roof. This will not only save you time and trips to the site, but will allow for your Public Adjuster to work your file quicker and with more ease. Not to mention, a proper roof inspection and documentation can help the Independent Adjuster as well, which is always a good way to build trust and a healthy working relationship. This is intended to give you a basic idea of what items are needed on a roof inspection and how to document one. Please understand that many factors on a roof will determine the method in which an inspection is completed.

## Types of Roofs

To better understand a roofing **system** and what components are on them, we will first look at each type of roof. Please understand that there are **many** different kinds of roof, so for the sake of this guide, we will focus on the most common roof types.

### Common Roof Types

- Gable Roof (most common)
- Hip Roof (can be very complex, or very simple)
- Flat Roof (mostly used on commercial buildings)

### Gable Roof



This roof type is most common, and is a very basic roof. The roof is essentially two slopes on each side of the roof with one point at the top. The roof will look like a triangle, and the triangle on the side or at the

end is called the gable. The photo below will help illustrate this better.

## Hip Roof



A hipped roof has triangles and trapezoids, and has peaks or points along where the faces meet. This roof can be very simple, having four slopes, or it can be very complex, having ten plus slopes.

## Flat Roof



These roofs are exactly what the name says. They are flat, and often are used on commercial buildings. Homes can have these roofs as well, but that is less common. The flat roof is also a completely different type of roofing material with its own set of different installation methods. We won't touch on this roof type very much, but it's good to know that it exists.

## Components of a Roof

The components of a roof will vary per each state and climate, but this guide will outline the most common and basic roof elements that will apply to the majority of roofs that encounter colder climates. Usually, roofs in warmer climate have the same items, just less or not as many items.

## Decking

The roof decking is the base of the roofing system. Decking is usually either plywood, OSB or runs of wood planking. This surface is what all the roofing elements are attached to and is what is holding the weight of the roof and roofing materials.

In today's standards, the decking should be 5/8" OSB, but plywood of the same thickness is also suitable. OSB is preferred as it is not as flexible and tends to have more of a resistance to water.

**Important Note:** Many shingle manufactures will not allow for a roof shingle to be installed on a roof deck that has spaced wood decking and a gap of 1/4" or more between the deck boards. Keep this in mind!

## Underlayment

Underlayment is the product that is applied over the decking to ensure that water does not penetrate through the roofing system and onto the decking, which would lead to water soaking through the decking and leaking into the home.

It is common to use a synthetic underlayment in most areas today, but some roofs still have a felt underlayment, which is a black thin sheet of thick felt, almost like construction paper. That product is not used much anymore, and tends to be more prone to tearing and ripping than the new synthetic underlayments.

## Drip Edge

Drip edge or gutter apron is a metal piece that is installed over the edge of the roof to keep the underlayment and ice and water barrier secured and to prevent water from getting underneath those items. It is sometimes called K Metal or Style D metal.

## Ice & Water Barrier

Ice and water barrier is a tar and asphalt like material that is rolled onto the end areas of the roof eaves (flat parts of the roof where gutters are installed) to prevent water from entering the roofing system when ice dams form and melt. In most areas where there is a change of snow or ice forming, this is a required material per code. This must also go past the inside of the exterior wall to ensure that the water does not get onto the exterior wall of the home or inside and onto the drywall.

## Starter

Starter is essentially a shingle without the granules, and is installed on the eaves and sometimes rakes (the steep angle parts of the roof) in high wind areas. This allows the first shingle row to seal to the starter, and helps in sealing the roofing system further.

## Shingles

Shingles are the most common type of roof. There are many manufactures of shingles, and many colors available for shingles. The shingles are a layer of fiberglass and asphalt that has granules of asphalt over the top of it. The granules help absorb the UV rays from the sun and protect the fiberglass matting from deteriorating, which would eventually allow water to enter the roofing system and the dwelling. Shingles are installed one at a time, and have a tar seal strip at the bottom to ensure that each shingle seals to the one below it. This prevents wind from lifting the shingle and allowing water to enter the roofing system.

## Ridge Cap

The point or line where the roof slopes (or faces) meet is called the ridge. On a gable roof, this is at the top. On a hipped roof, this is where the faces meet on the sides and the top. Ridge cap is a smaller shingle that is used on top of the shingles at the ridge of each roof slope (or face) that covers the exposed opening in the ridge of the roof (the opening is used for ventilation in some cases) to protect the shingles and cover any shingle ends.

## Valley Metal

On a hipped roof, or a gable roof that runs into another gable roof, there are valleys that are created. A valley is a low point in the roof where two roof slopes meet. You can think of this as the opposite of the ridge on a roof. Valleys are used to divert water from the roof down and off of the roof to ensure the water does not sit on the roof and cause further damage. Under the shingles, a layer of metal is installed to ensure that the water that runs down the valley does not seep between the shingles of the valley and cause water damage. This metal is called the valley metal.

In some cases, an additional layer of ice and water barrier is applied to the valley and valley metal is added on top for extra protection. Ice and water can also be used as an alternative to valley metal. Valley metal is commonly used on roof with open valleys. This is where the shingles do not come together or overlap in the valley.







## Roof Vents

Roofs actually need to breathe believe it or not! If the roof is not able to breathe or vent, the attic space will not circulate air, which can lead to the roof sucking in due to the amount of negative pressure, or it can start to allow condensation to build up. If condensation builds up, mold starts to grow.... There are two kinds of venting systems on a common roof. You have roof vents, which are most common, and you have ridge vents.



On a roof with vents, holes are cut into the decking, and a vent is applied over the hole. This vent keeps the elements out, but allows air to flow freely in the attic space. The vents installed on these roofs can be either metal or plastic, and they are usually called Turtle vents.



Ridge vent is exactly what it sounds like. The decking at the top of the roof is not installed tightly. There is a gap between each deck, and the ridge is left open. A layer of sponge like material is installed over that gap. Ridge cap shingles are then installed over that venting material. You will notice that the ridge cap is elevated slightly and a gap or black mesh is filling in that gap.

## Pipe Jacks & Split Boots





Pipe jacks and split boots are rubber seals that are applied around the roof vent pipes on the roof for the bathroom fans and sewer pipe vents. These are applied over the pipe, and the shingles are woven around them. These prevent water from running down the pipe and entering the dwelling.



Split Boots are the same thing as a pipe jack, but they split in half to allow for the boot to be placed around the pipe of an electrical connection point. If you have a wire for power going to your garage from your house, it will likely come off the roof. You can't slip a pipe jack over a wire and down over a pipe, so the split boot splits in half and then is sealed when it is around the vent.

## Exhaust Caps

Exhaust caps are the metal caps that go on the top of the HVAC and furnace vents on the roof. These are often made of metal, and show the most signs of impact from hail damage. It is important to know what these are, but they are usually replaced by an HVAC technician to ensure they are done properly.



## Rain Caps

These are similar to the exhaust cap, but look a bit different. It is important to consult an HVAC technician for the installation of these items.



## Flue Cap

A flue cap is similar to a rain cap, but it goes over the flue pipe of a chimney. These are larger, and more cumbersome to replace. Again, consult an HVAC technician for installation and removal of these items.



## Chimney Chase Cover

The chimney chase over is a metal cover that covers the area around the flue pipe on larger chimneys. This is also a good indicator of hail impacts. Again, consult an HVAC technician for installation and removal of these items. Please note that some of the chimney caps may have to be custom made as the size or layout of the chimney chase may be an odd size or layout.



This cover is installed before the Flue cap. You can see the full system in the photo below. Again, consult an HVAC technician for installation and removal of these items.



## Flashing - Step

Step flashing is an L shaped metal piece that is installed where a roof and a wall meet. The step flashing comes in individual pieces and covers up to 50 LF per bundle. The flashing is installed and interwoven between the shingles to ensure the water that drips in that area lands on the shingle and down to the next shingle, instead of under the shingles and into the roofing system. Step flashing would be installed around a chimney, like you see above. Chimney flashing is also used in this area. That will be discussed next.



## Chimney Flashing

Chimney flashing is similar to step flashing, but is a higher and chunkier flashing.



## Crickets

Crickets are installed behind chimneys and in areas of the roof where the valley meets a wall, or where there is a slope or object that protrudes straight up and would create a "flat line" on the roof slope. The cricket is a triangle that is framed on the roof and shingled to ensure the water diverts around the object instead of sitting at the edge of the object.



# Identifying Roof Damage

When in doubt, mark it out!

## Types of Damage to Roofs

There are two main types of damage that impact roofs. There are also anomalies on roofs that cause damage, but are not necessarily storm damage. The main damage types for a roof are **wind** and hail. Wind and hail damage to a roof makes up a large portion of insurance claims submitted on roofs! It is important to be able to identify hail and wind damage, especially for an insurance claim! We will look at what wind and hail damage looks like on a roof as well as some other forms of damage to roofs. Please note that this will mainly be focused on asphalt roofs as they are most common. There are many different materials used on roofs, and the way hail and wind impact them is different based on the material.

## When in doubt, mark it out!

If you are unsure what the damage you are identifying is pre-existing, or caused by something other than an act of God (Wind, hail, etc.) Mark it, document it, and meet with a qualified and trusted Colleague, Roofer, Adjuster or Engineer and review the findings of your inspection.

# Hail Damage

Hail damage seems pretty self explanatory, but it can be complicated! If large hail stones, or hail stones that are mostly ice impact a roof, you will likely see damage to the shingles. This depends of course on the size of the hail as well.

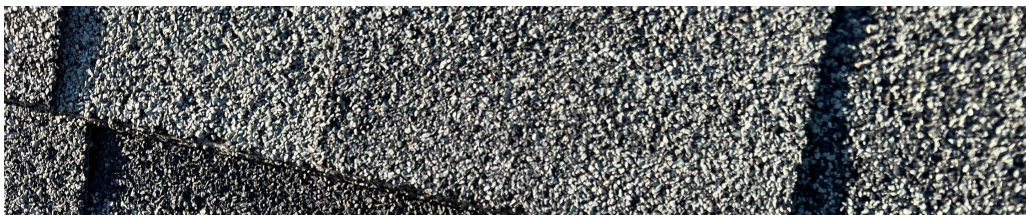
When hail impacts a shingle, it causes the fiberglass matting to bruise or break and become weak. The granules over the matting are also displaced and often missing from the impact. This damages the shingle in two ways. Firstly, the granules are no longer sealed or adhered to the shingle, which exposes the matting. The matting used on the shingles breaks down and deteriorates when it is exposed to UV rays from the sun. The granules help deflect those rays from the matting.

If a hail impact causes a bruise, or if the granules are no longer adhered to the mat, the UV Rays will eat away at the mat and will eventually create a hole in the shingle. When the shingle gets a hole, water will start to penetrate the roofing system and will seep through the underlayment and end up on the inside of the house, which is where it does **not** belong.

When you are assessing a roof for hail damage, you may see a large impact and you may see nothing. That will all depend on the size of the hail stone. Keep in mind that just because you don't see the hail impact does **not** mean there is not damage, or that there will not be damage in the future. If the hail stone was strong enough to displace only a small amount of granules, the shingles will now be exposed to UV rays, and the matting will deteriorate at a faster pace than it would have had the hail not displaced the granules.

Besides sight, you will also need to use touch to determine a hail impact. Hail impacts are round, cause displacement of granules, and may cause an indentation or bruise, which can usually be felt by touch. If you touch the impact area, and it feels soft or gives way, you know that the hail impact has damaged or bruised the matting. If you don't feel the matting give way, but there are granules displaced in a circular pattern, and the mark on the roof could be damage, be sure to notate and take photos of that.

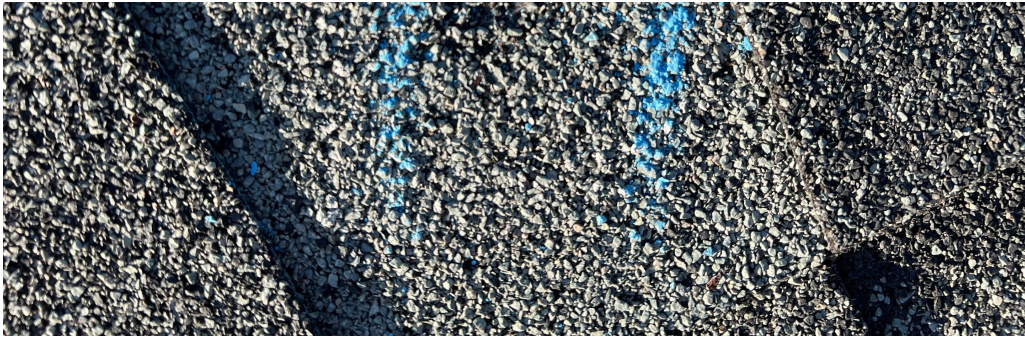
Below are some extremes of hail impacts to a roof. The dark color roof has granule displacement, and a slight bruise, but that is not easily visible to the naked eye. The Teal colored roof clearly has large impacts and visible matting bruises.











When in doubt, mark it and document it. If it is found to not be damage, no harm no foul. If it was found to be damage, and you missed it or ignored it, well, that's a different story.

## Wind Damage

Wind damage affects shingles in a different way from hail of course, but wind damage is more recognizable than hail by a long shot! High winds usually above 45 mph, can cause damage to shingles. Some shingle manufactures state that their shingles can withstand winds of up to 65 mph, and most of them today have proved that to be true! Even though roofs are rated for high winds, it is always a good idea to check the shingles on the roof after a high wind event to ensure they are all properly sealed, and that there is no damage.

High winds will force the asphalt seal strip up, and will cause the shingle to flap up. You may also find that it causes some of the bottom layer of the shingle to be pulled off and stuck to the shingle under it. This damage is very visible, as wind damage will cause the shingle to be loose and able to be flapped up. It will also leave a crease and displaced granules at the top of the shingle. Shingles are supposed to be somewhat pliable, but also need to retain a level of rigidity to provide proper impact resistance. This is why you see the crease, they are bending past the threshold of flexibility. You can see what this looks like in the photo below.







if the wind speeds are very high, it can often tear shingles off the roof, which will leave the underlayment or seal strip of the shingle below it exposed. You can see that here in the photos below. If this happens, it is recommended that a tarp or piece of underlayment be applied over the area to prevent water intrusion.



## What is NOT Storm Damage?

Many things can happen to a shingle that will cause damage. Unfortunately, that is often a factor of the shingle aging and deteriorating over time. Everything has a life span, and a functional life span. The older the shingle, the less function it is able to perform, and the less effective it is at performing its intended function. Some of the most common damages that happen due to the deterioration of the shingle are **blistering**, **zippering**, and **granule loss**.

Now, it is important to know that the insurance carrier will use these terms all day to argue that it was either installed wrong, or that the roof damage is caused by normal wear and tear. While some of this may be true, if you see damage such as wind or hail to a roof that also has these damages, inform the insurance company that there are damages to the roof that need to be addressed and that were caused by a storm or act of God.

**Be very cautious in this territory. If you are not a licensed Public Adjuster, you are strongly encouraged to maintain your role and not bring this point up as you may be found to be acting as a Public Adjuster without a license. DO NOT try and argue coverage or policy.** This information is being shared so that you are more informed and are able to have a basic understanding of when a roof has been affected by an act of God or if there is a valid claim to file with an insurance company.

## Blistering

This occurs to a roof when the heat causes the asphalt compound in the shingle to bubble and pop. This can often look like a hail impact as it is round and there are displaced granules. The big factor that differentiates this from hail damage is the fact that a blister will blow all the granules off the surface of

the blister and will leave an almost perfect hole of displaced granules. It also can appear like a small volcano or feel like the hole has ridges rather than a crater or indent. Below are some photos of a blister.



## Zippering

Zippering is often confused with wind damage. Zippering can also be noted as curled corners on the shingles, or the shingle corners flapping up in a diagonal or zipper like pattern. This is usually a cause of improper installation or shingles not properly sealing. Remember, with wind damage, you will see marks on the shingle. However, do not just assume the damage is zippering if the corners are lifted. Take photos and review them with a qualified and trustworthy college, Roofer, Adjuster or Engineer.







## Granule Loss

Granules on the shingles can come loose, fall off, or be displaced from weather over time as well as other factors. Granule loss will be identified as granules or areas of the roof that seem to be missing or have displaced granules. The damage is often widespread over the surface of a roof slope or slopes. Granule loss can happen from excess foot traffic, objects rubbing against the roof surface (trees, branches, etc.) and exposure to the elements over a long period of time. If you notice this on the roof, and there is no other storm damage to be noted, it is safe to say that the roof will need to be replaced as it has either not performed its intended function due to a defect, or it has reached the end of its functional life.

This may be hard to detect, so if you are unsure of the damages, document them and review them with a qualified and trustworthy college, Roofer, Adjuster or Engineer.





# Inspecting the Roof

## Roof Inspection Process

**SAFETY FIRST** - Please ensure that your ladder is set up correctly, that it won't kick out or fall back. Secure the ladder to the gutter with a rope or bungee cord to make sure it doesn't fly away with a gust of wind. Check your surroundings, and if the roof is steep, or the area is unsafe, don't do the inspection! Bring a colleague with you to the inspection to act as a Ladder Assist or Spotter. NEVER forget about the weather! If the roof is wet or if there is a storm close by, reschedule the inspection.

Inspecting and documenting a roof is not as easy as it looks. When doing an inspection, you must take note of every type of flashing, every pipe jack, roof vent, and ridge types. Documentation and photos of the roof elements we talked about is paramount! Without documentation or evidence of the components on the roof, you will not be able to accurately estimate the cost of the roof. Documentation of the roof as well as the inspection also helps reduce liability as you can reference the roof and the components before and after the roof was repaired or replaced.

## Basic Inspection Areas

The following areas and items need to be properly documented on the roof inspection. Without this information, you will have to go back to the property to get the information. You won't be able to accurately estimate the roof without this information, and the file will not be ready until these items are completed.

- Roof Photos (Overview, area, and damage)
- Roof Accessories
- Ridge Cap
- Underlayments
- Gutters

## Step 1 - Roof Photos

In the Insurance world, we work in the same way over and over again, and it helps to keep us efficient and also allows the file to be properly documented. To do this, we start at the top, work our way down, and then go front the front to the right, rear and left of the property. In short, it goes **Top - down, front - right - rear left**. This is the same method you should use to take your photos. Start at the highest point, take photos counter clockwise and move down.

Here is a basic breakdown of how the images on your roof should be taken. Take photos like this before you mark the roof, and after.

1. Stand at the top of the roof and take photos of each slope. Do a 360, and take a photo at every direction (forward, right, back, left).
2. Go to each slope, starting with the one facing the front. Take a photo showing an overview of each slope.
3. Take a closer shot of the areas you have noticed damage. This will be a shot of your test square area after you mark the roof.
4. Take a closer shot showing the damage and the area around it.
5. The final photo will be a close up showing just the damage that was noted.

NOTE: When taking photos of your test square, take an overview photo of the test square, then take a photo of the damaged areas within the square. After that take a close up of the damage. Do this for at



least 6 of the marks in the test square. You don't need to document every little spot with a close up, but make sure you highlight the obvious damages with close up photos.

**IMPORTANT** - Ensure that you mark each slope with chalk. Mark the damages found as well. For example, you would write "Front H=8+" on the slope under or above your test area and would take a photo of that as well as another overview to show the writing and the test square.

Taking pics of the accessories on the roof is not that hard. Below is basic process for documenting the accessories on the roof.

1. Count out how many pipe jacks, split boots and vents there are. Write how many accessories there are with chalk next to one of each of the accessories.



2. Take an overview photo of the accessories, and then a close up of each one. You should try to do this with all accessories, such as vents, skylights, pipe jacks, etc. If the vents are clearly impacted or damaged by hail, you don't have to take a close up of each one, just get an overview and one or two closeups.





3. After you have the photos of the accessories, make a note of the type of ridge cap on the roof. You don't need to photograph this, but keep the type in mind. There may be high profile ridge cap (used for steep roofs).



NOTE: Ensure that you take photos of the chimney, the top of the chimney, the chimney cap and the flashing.

## Gutters & Underlayments

Now that you have taken photos of the roof and are ready to complete your inspection, stop at the top of your ladder and peek under the shingles. Take a photo of that, and lift the shingle slightly if you have to. This will help show the layers of the roof, the underlayment, ice and water as well as drip edge. You can also take photos of the gutters while you are here as your ladder is likely on one of the gutters. Note any damage and if the drip edge is on the inside of the gutter.

## Collateral Damages & Evidence

It is always a good idea to scan and review the surroundings of the loss site as there may be clues or additional information that can either confirm or deny your suppositions. Look at the roofs across the street, note any Roofing signs in the yard, look at the soft metals around the house like window wraps, garage doors, window screens and AC units. It is also helpful to look for power boxes around the area. Often times, hail will leave a spatter mark on those metals, and that can help you determine the direction, size and impact strength. Same goes for wind damage. If you see tree branches, debris all over yards, trash cans all over the place, and yard decorations blown down, you can document that and use that to support your claim.



Also look at plants! I know it sounds funny, but often times hail will also damage plants, puncturing holes in the leaves and breaking the pots or cracking the pots holding the flowers. Below are some examples of collateral damages and notes to annotate the damages.





# Conclusion

In conclusion, be sure to complete a thorough inspection and investigation of the property and document as much as you can. This will not only help you in the long run, but will help the others involved on the project as well, and that helps build trust! You will likely work with the same person on multiple jobs, so if they know you make their life easy, they will like to work on jobs with you and will also help you out on jobs as well!

Keep it civil, act kind, and come from a perspective of asking questions to gain a better understanding. Everyone in this industry is busy, has a lot to do, and makes mistakes. We are in the business of homes and relationships. There are a lot of both in every city and in every area of the world. Don't risk losing a relationship or a home (project) because of an emotion that will go away in a day.

# Disclosure

I am a Licensed Public Adjuster, and this report was created from my experiences and methods of work. Please use this as a basic frame work and adapt it to your needs and your roles. I am not an attorney, Engineer, or expert roofer. I will not be held liable for any situation caused from the use of this information out of context, or by a person acting in a role they are not licensed or qualified to act in. **Act only within your scope outlined per your state's guidelines and laws.** Review any questions, comments or concerns regarding damages or coverages with a licensed and qualified Adjuster, Attorney, or Contractor. DO NOT PRACTICE IN ANY AREA YOU ARE NOT QUALIFIED OR LICENSED TO!

# Citation

This report and guide was created by Keoni Momohara, a licensed Public Insurance Adjuster on April 28th in the year of 2023.