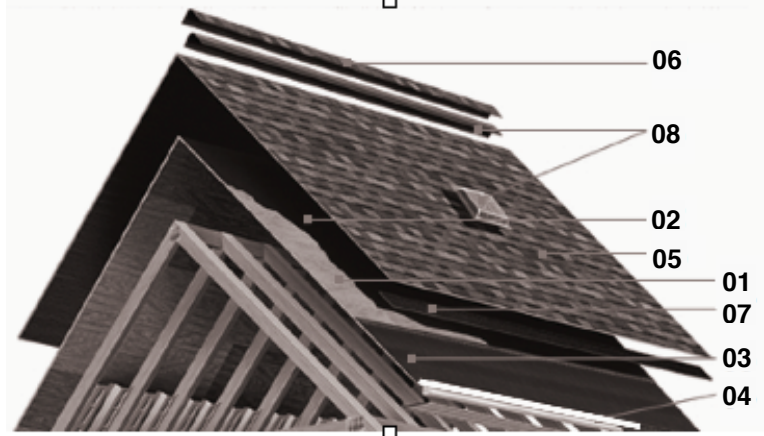


To know your roof means to know the most significant part of your home exterior. To know how it functions means to know how to protect your investment and what you're getting when purchasing a new roof.



## 01 Deck

Sheathing or roof deck usually consists of wood materials like plywood or OSB that is nailed to the roof truss. The deck is your roof's foundation; a solid roof starts with a solid deck. Any part of the deck that is rotten or warped must be replaced. It is important that only proper cured lumber be used for sheathing as otherwise the roof material may buckle or pull away as the wood dries.

## 02 Underlayment

Roofing underlayment is used on pitched roof as a second layer of protection (most against the elements while shingles are installed) or for added protection if shingle blow-offs are experienced. When the roof is completed the underlayment can shorten your roof's life. Felt paper (tar paper) is used as underlay due to its low cost and water resistant properties. There are 3 major issues that tar paper can present. First, it is susceptible to lifting due to heat, causing waves in the roof (this is commonly fixed by removing some shingles and slashing the paper, rendering it useless). Second, it is not breathable. Therefore, it can actually cause damage to the roof deck (such as rot) and add heat to the underside of the shingle. Lastly, it tears easily. Since there are at least 130 nails per sheet of ply (4'x8' decking), you can imagine water will easily get through no problem (ice and water membrane seals nails that pass through it, tar paper just tears).

At CVH Roofing, we do not use tar paper; we use only synthetic underlay. Synthetic roof underlayments serve the same function as a secondary weather barrier with better resistance to tearing, moisture, ultraviolet rays, and are fully breathable. Synthetics are typically polypropylene, polyester, or fiberglass fabric.

## 03 Eave Protection

Think "eaves trough". It's where your roof starts at the bottom, which is also one of the most crucial spots. Considerable damage can be caused to the eaves as a result of ice build-up during winter freeze/thaw cycles. Ice and water, leak barrier, eave guard, and etc all refer to at least 2 feet of special water resistant material that protects your eaves

area and valleys. This material ranges in price from \$50 to over \$100 a roll, which speaks to the different quality of material that can be placed on your roof. Roofers might even replace felt paper for ice and water on unknowing homeowners.

#### 04 Eave Edge Treatment

A drip edge is a piece of metal that is nailed at the bottom of the roof edge (or eaves) to facilitate proper water drainage. The metal drip edge should be positioned under the eaves protection membrane at the eaves edge. It allows for the water to drain into gutters or cleanly off of the roof rather than running down the roof edge and down the fascia, which will eventually lead to rot. The drip edge is one of the first things attached to the roof and should be installed underneath the roofing felt with about  $\frac{3}{4}$  inch of overhang extending past the fascia and hanging just over the gutters. A drip edge can range in materials and thickness, but typically a roof drip edge is most commonly made from galvanized metal or aluminum.

#### 05 Shingles

In order to get the maximum performance out of your shingles, all other roof components must be carefully chosen and properly installed; however, the shingles themselves will determine the longevity of your roof. Shingles start from 25-year 3-tab choices to lifetime warranties. It is very important to compare the price difference of a number of systems to determine which presents the best value in your situation.

If you live in most of Canada, a 25-year shingle is the cheapest per bundle, but will cost more after it is on our roof. Warranties and shingle construction should be understood before buying, you might be expecting something else.

#### 06 Ridge Cap

The ridge is at the top of a roof where the sides meet to form an angle. The ridge runs the length of the roof, and must be capped with ridge cap shingles.

#### 07 Starter

A starter strip is typically a row of shingle material that is applied on top of the underlayment and drip edge but underneath the primary shingle layer. The starter strip is usually a shingle laid upside down or a strip of shingle material half the width of a shingle. It protects the shingles from wind at the bottom of the roof by being adhered to the edge of the eaves, and it fills in the spaces left by the tabs of most shingles.

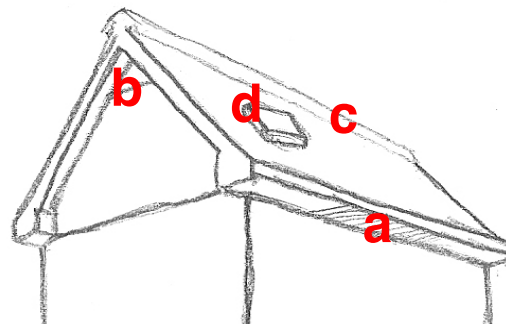
#### 08 Ventilation

A properly ventilated attic will keep your roof deck and insulation dry, dissipate heat build-up in the attic space, minimize the potential for ice dams, and extend the life of your shingles.

Having proper levels of ventilation will also help ease your heating and cooling costs and make your home a healthier place. Chances are your roof is in dire need of more ventilation, especially if you see any curled shingles anywhere. Air enters intakes (usually through the perforated soffit) and exits through the exhaust vents.

There are many different types of vents; make sure you know what type presents the most value or which is most suitable for your purpose. If your roofer can't tell you what types are available, how much you need, and what the best options are, find a new roofer! The general rule of thumb is that the minimum ventilation required is one square foot of Net Free Air (NFA) for every 300 square feet of insulated attic space. The split of intake and exhaust is generally accepted at a 50% intake and 50% exhaust ratio.

Venting doesn't need to be electrical or mechanical to work perfectly well; you should have enough and the proper type for your application. You may be able to add years to your roof by just adding one vent!



- a. Soffit vents – usually an intake
- b. Gable end vents – placed at the top of the gable area on both ends of the house
- c. Ridge vents – placed along the entire ridge of the roof to allow hot air to escape
- d. Roof vents – available in a standard or powered version

## Venting

Makes your shingles last longer – heat underneath the shingles can kill them 25% faster!

Eliminates ice dams – one of the worst and costliest types of roof disasters.

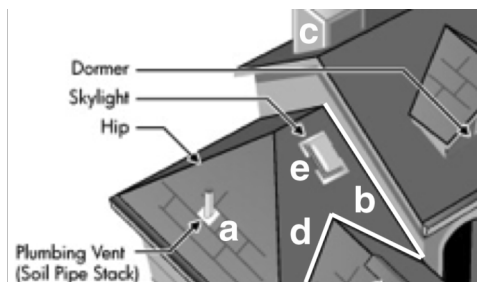
Keeps your attic dry and free of serious problems such as attic condensation, wood rot, mold, mildew and rusting metal.

Cuts your utility bills and keeps air in your home cleaner.

If you think you're low on venting, add it now and save!

## 09 Flashing Systems

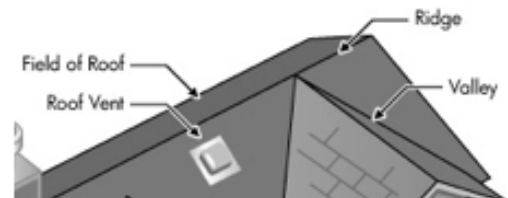
Flashing systems are a site where many roof leaks occur. Whether flashing is located where roof planes intersect, around vents, or at the chimney, most flashing systems should be replaced when a new roof is being installed. Think of flashing like a kind of metal angle around chimneys, dormers, vents, skylights, and etc. A flashing system that is properly installed will have water run over joints, not in them. Flashing is installed on top of the ice and water membrane. The most common types of flashing are the following



- a. Vent pipe flashing – now made of special rubber, used to protect the area around a vent pipe. It must always be replaced (not caulked) with the proper size and type or it will leak.
- b. Step flashing – creates a step like appearance on the side of a chimney or dormer because individual strips of flashing is added with each layer of shingles.
- c. Chimney flashing – the custom metal built around chimney protrusions, sealed or replaced if it is worn.
- d. Valley flashing – protects the valleys of a roof if a metal or open valley is being made.

## 10 Valley Treatment

The valley (the low point of where 2 roof fields join together making an inward angle) is a crucial spot that must be installed properly. A premium ice and water membrane should be installed (even under metal or open valleys) and it should be free of nail punctures near the bottom. Metal valley flashing may be installed; it can make the valleys last if installed properly, but can also wear and warp with time.



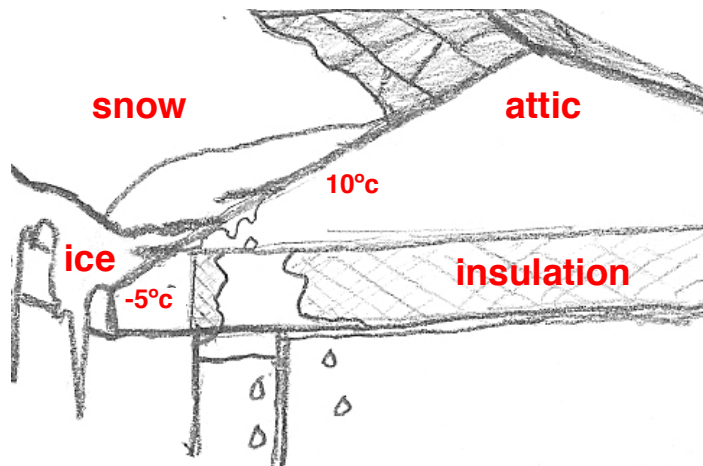
## 11 Roofing Warranties

A 25 or 45 year covered shingle is not guarantee to last that long. Shingle warranties cover only shingle defects for the first 4 to 7 years fully, after which they are pro-rated. So after the first full covered period, the coverage drops yearly until it runs out. This means on the 10<sup>th</sup> year you may only have a very small percentage of the roof material covered, which is by far the least of the expenses. Manufacturers use impressive sounding long-term warranties to convince buyers that their shingles are the best and will last the longest. They compete over such features as the length of coverage, algae resistance, wind tolerance, and whether the warranty can be transferred to a new owner. These warranties can be their main selling points. However, don't be taken in; standard manufacturer's warranties are not worth a dime in most cases, ask any supplier to see how many successful warranty claims they've had since in business. It comes down to proper installation, and making sure the manufacturer is reliable (most large manufacturers warranty coverage is the same), as is the contractor's track record. There

are too many small outfits running out of pick-ups that change cell phone numbers every year, and with such a high turnover, it tends to give the whole industry a bad name.

## 12 Ice Dams

Ice dams occur when snow melts near the top of warm roofs. It then cools and freezes down the roof to the overhang. As winter continues, snowfall continues the melt and freeze process, forming an ice dam that can seep under the shingles through the decking and into the house. Even in freezing temperatures, this causes serious roof leaks. The best prevention to ice dams is a well-ventilated roof so that the temperature in the eaves area is comparable to the one at the top portion of the roof. Protection for the eave area must be applied in the form of an impermeable ice and water membrane (installed on top of the decking, under the roofing material during the roofing process). Electric cables along the eaves can be used in the prevention of ice dams where they usually form.



However, this is *not* the ultimate solution as new ice dams can form above the cables and wreak the same havoc. An emergency / temporary solution is to fill a sock or nylon with calcium chloride and lay it vertically across the ice dam. Others have improvised ways to chop at the ice, spread salt or a constant stream of hot water. All these are methods that just add wear and do not solve the situation.