

THE CRC GUIDE TO ASPHALT SHINGLES

As you start preparing to have a new asphalt shingle roof installed, it may seem to be a long and complex task. But, it's important to remember how important this process is, since it will directly affect what is probably your largest single investment - your home.

In order to simplify this process, we have taken our more than 50 years worth of knowledge and experience in the industry, and developed this step-by-step guide to help you through the many choices to be made.

We walk you through the different styles of asphalt shingles available, and give you the easiest way to start the process of **Choosing a Color**.

Once you have selected a shingle style and color, it's time to find a contractor to install your asphalt shingle roof. In **Choosing a Roofing Contractor** we provide some helpful hints on getting the right roofing contractor, and we have included a checklist of items you will want to make sure appear on **The Contractor Agreement**.

We also talk about **Additional Factors Affecting Roofing Shingle Performance** that should be considered and discussed with your roofing contractor before the new asphalt shingles are installed. Making sure you have a solid roof structure can go a long way in getting the most from your asphalt shingles.

A Guide to Asphalt Shingles explains how asphalt shingles are constructed, and how they work to protect your roof and home. This section covers the basics of the **Anatomy of an Asphalt Shingle, The Roof Environment, and discusses Asphalt Shingles and the Passage of Time**.

In the last sections, we cover **Commonly Asked Questions**, and give a brief **Overview of the CRC Limited Warranty**. This overview covers the aspects of the CRC Limited Warranty that most homeowners are interested in.

Now that you have had a quick glance at the process of getting a new asphalt shingle roof, let's begin!

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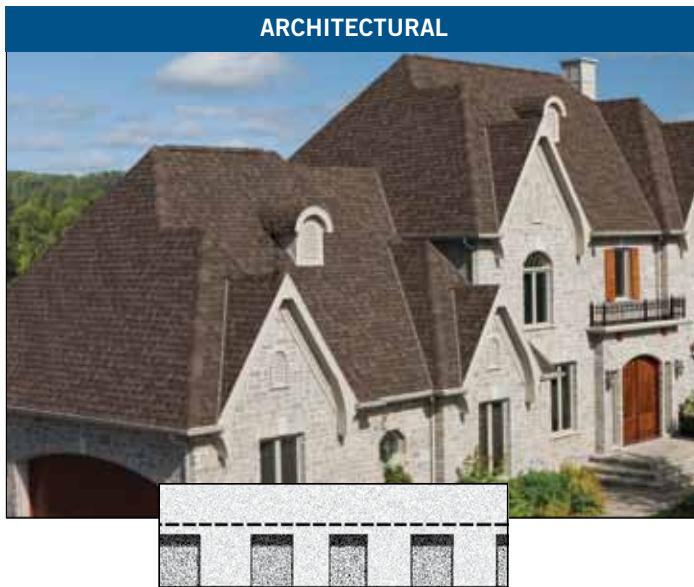
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Selecting an Asphalt Shingle

The first step in the life of your asphalt shingle roof is selecting a shingle. At first glance, with so many different styles and colors to choose from, it may seem a little intimidating. But when you get right down to it, there are really only four decisions to make.

1. SELECTING A SHINGLE STYLE

The different styles of shingles can be divided into two basic categories: Architectural shingles and Traditional 3-Tab Design shingles.



The first type is the architectural shingle. Their remarkable dimensional thickness and deep, blended shadow bands simulate the appearance of classic wood shakes, enhancing the beauty of any home.



The traditional 3-tab design shingle gets its name from the three tabs incorporated into its profile. Always a popular choice, traditional 3-tab shingles are available in a wide variety of colors.

HERE ARE SOME ADDITIONAL QUESTIONS YOU MAY WANT TO ASK YOURSELF WHEN SELECTING A SHINGLE STYLE.

DO I HAVE A STEEP PITCHED ROOF?

With a steep pitched roof you can see more of the roof while standing on the ground. To give your roof an interesting and complex texture, consider using architectural shingles. With their multi-layer, laminated construction, architectural shingles are a perfect match for steep pitched roofs

DO I WANT MY HOME TO STAND OUT FROM THE CROWD?

If you want to give your home a more distinct and individual look, consider using architectural shingles. Use CRC Armourshake[†] for a classic woodshake appearance or Crowne Slate[†], Grandeur[†], Royal Estate[†] & Biltmore™ architectural shingles for a slate or shake-like appearance.

Note: [†]Packaged in IKO wrappers

Selecting an Asphalt Shingle

DO I LIVE IN AN AREA WHERE ALGAE DISCOLORATION IS A CONCERN?

If you live in an area where algae discoloration is a concern consider our Crowne Slate[†], Biltmore™ AR, Armourshake[†], Grandeur[†], Royal Estate[†], Superglass Ultra AR, & Superglass 25 M AR shingles. These shingles feature an algae resistant system to protect against algae discoloration. You may also want to consider selecting a dark color shingle, which is less likely to show the staining associated with algae discoloration.

2. CHOOSING A LIMITED WARRANTY LENGTH

Architectural and traditional fiberglass shingles also come in different weights and limited warranty period lengths. Once you have decided on one of these styles of shingles, check the CRC Premium Roofing Products Catalogue, product brochure, or the CRC web site www.canroof.com to determine the choices in warranty periods offered. A limited lifetime warranty is available with Crowne Slate[†], Biltmore™, Royal Estate[†], Grandeur[†] and Armourshake[†] architectural shingles. While architectural shingles may cost more

than Traditional 3-Tab shingles, it is important to remember that laminated architectural asphalt shingles may last longer*. Amortized over that length of time, the difference in price between Traditional 3-Tab shingles and upscale architectural shingles is less than you might think.

Note: Product availability may vary per region.

*Depending on location, materials, roof design, underlayment, installation, slope and other factors.

3. CHOOSING A COLOR

Now, it's time to choose a color. Although it sounds like a simple process, it is usually the step that causes the homeowner the most difficulty. After all, choosing a color is a very personal and subjective process.

Since everyone has a unique sense of style and taste, it is impossible to give a hard-and-fast rule on how to choose a shingle color. One of the best ways to pick a color is to drive around your neighborhood. Check out the different color combinations of roof, brick / siding, and trim colors that your neighbors have tried. Make a list of the ones you like, and steer clear of the ones you don't.

Once you have narrowed down your choices, it is important to view several full size shingle samples, or an existing roof completed with the same style and color shingles, before

making a final decision. Often overlooked, getting actual shingle samples from your contractor is the best way to see how a shingle color will look in combination with the other color elements (brick / siding, and trim color) of your home.

If you are considering new trim paint or siding, grab those samples as well, and take them outside. Hold them out in the natural sunlight, and see how the colors interact together, and how they change under different lighting conditions.

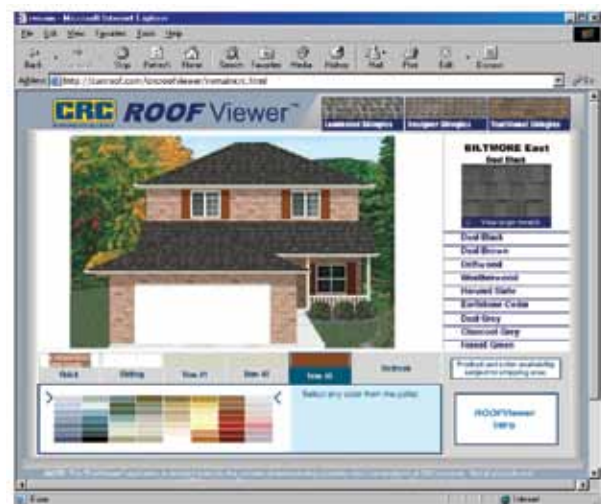
ROOFViewer™ Interactive Shingle Selector Tool

To aid in the selection of a new roof, we have developed the CRC RoofViewer™. This is an interactive tool which allows the customer to easily select a shingle style and color to co-ordinate with brick or siding and trim. This tool is available on-line at:

www.canroof.com. It's an easy way of finding out how your house will look with a particular shingle.

NOTE: Since each region has a different selection of colors available, please refer to the CRC Premium Roofing Products Catalogue, a product brochure or the CRC web site (www.canroof.com) to determine what colors are available for each product. **To ensure complete satisfaction, please make your final color selection from several full size shingles and view a sample of the product installed on a home.**

Note: †Packaged in IKO wrappers



Choosing a Roofing Contractor

After selecting a shingle style and color, the next step is choosing a roofing contractor. This is an important step in the process, and should not be taken lightly.

It is important to do your homework, since not all contractors are alike. Some are more committed to their workmanship and after-sales service than others. Some may have better-trained installers. There may even be contractors on shaky financial ground who will not survive long enough to provide the roofer's warranty service.

A contractor who stands behind his work typically has a good reputation in the community, and wants to keep that reputation by making sure his customers are satisfied. Take whatever time is necessary to select the right contractor. Having the right contractor can make a big difference.

POINTS TO CONSIDER WHEN ASSESSING THE QUALIFICATIONS OF VARIOUS CONTRACTORS:

- ✓ How long have they been in business?
- ✓ Are they bonded and insured, including worker's compensation and general liability?
- ✓ Do they have the appropriate licenses for your community? (Ask to see written proof.)
- ✓ Will they give you the names and phone numbers of some of their customers you may call for a reference?
- ✓ Do they have a satisfactory record with your local Better Business Bureau?
- ✓ Are they willing to put all agreements, promises and understandings in writing?
- ✓ Will they provide a bank reference?



THE CONTRACTOR AGREEMENT

Make sure that all agreements and promises from the contractor are put into writing. Having this information in writing protects you and your investment. It allows you to see what the contractor plans to do with your home, what he will charge to do the work, and it will provide a written warranty on his workmanship. It is important that you retain this, and

any other information given to you by the contractor. When reviewing the agreement with the contractor, make sure to address some of the important points below to your mutual satisfaction. Contractors are not authorized CRC agents.

WHAT SHOULD APPEAR ON A CONTRACTOR'S AGREEMENT:

- ✓ A detailed contractor's warranty on his workmanship, including appearance of the finished job, length of the warranty, and how problems will be handled.
- ✓ An accurate brand name and description of the shingle and (other) roofing product(s) to be installed.
- ✓ Full compliance with the manufacturer's recommended method of installation.
- ✓ Who has responsibility for obtaining the necessary permits?
- ✓ Timeliness of starting and completing the work.
- ✓ Number of squares applied.
- ✓ Protection of your home from inclement weather during installation.
- ✓ Cleanup and appearance of the work site.
- ✓ Property damage caused by the contractor and his workers.
- ✓ Price.
- ✓ How will "change orders" be handled, and priced?
- ✓ Payment terms and conditions.
- ✓ All verbal discussion(s) pertaining to the job should be put into a written contract.

Additional Factors Affecting Roofing Shingle Performance

Besides the shingles and external environmental factors, internal factors can also affect the performance of roofing shingles. These internal factors, such as your roof's ventilation, can cause deck movement or deck deterioration, which in turn can inhibit the ability of asphalt shingles to protect your roof and home.

An important step that should be taken by your contractor is to assess the condition of the existing roof structure, deck, and ventilation. Any shortcomings should be dealt with before



the new layer of asphalt shingles is applied, since shingle failures attributed to deck and ventilation problems are not covered by the CRC Limited Warranty.

Speak to your roofing contractor about the following concerns, and ask what additional concerns are common to your region.



POOR VENTILATION:

Although not usually recognized as a major design consideration, proper ventilation of the attic area is an essential factor in gaining the maximum service life out of the building materials used in the roof assembly, as well as improving the home's heating and cooling costs.

Insufficient ventilation under the roof deck may cause various problems on the roof, including ice dams, movement of the roof deck, ridging in the shingles, apparent roof leaks, and premature aging of the shingles. Older homes are seldom ventilated to current building code requirements and are particularly subject to these sorts of problems.

Ventilation requirements can range from 1 sq. ft. of ventilation for every 300 sq. ft. up to 1 sq. ft. of ventilation for every 150 sq. ft., according to the Asphalt Roofing Manufacturers' Association (ARMA) and the Canadian Asphalt Shingle Manufacturers' Association (CASMA). Ventilation requirements will vary depending on factors including the slope of the roof, and the type of roof.

The building code will also vary from region to region. Consult ARMA, CASMA, or your local building code for more details.

DECK MOVEMENT OR FAILURE:

A solid roof deck is an extremely important component in any good roof structure. If the roof deck is not solid, deck movement or deck deterioration can occur. This can impair the performance of the asphalt shingles, putting your roof and home at risk. It is important to note that the condition of the roof deck is beyond the control of the shingle manufacturer,

and shingle failure due to deck movement, deterioration, or collapse is the homeowner's responsibility. This is one reason why it is important to have your roofing contractor assess the existing roof structure, and remedy any shortcomings before the new asphalt shingles are installed.

ICE DAM BACKUPS:

Roof structures will sometimes "leak" due to the formation of ice dams. Ice dams are formed by the continuous melting and freezing of snow due to heat escaping from the house or by the backing up of frozen slush from the gutters. The melted water flows under the snow and freezes as it reaches the unheated soffit, thus creating the ice dam. When this occurs, water can be forced under the shingles and into the attic, causing damage to the home's ceilings, walls, insulation, gutters, eave and roof. To reduce the chances of damage caused by ice dams, consider doing the following:

- ✓ Keep the attic space cold by insulating it from the warm house interior, thus reducing or eliminating the heat needed for snow melt.
- ✓ Use high heel trusses, insulate to the outside of the plates and install baffles to ensure ventilation at the eaves.
- ✓ Ensure that the outer edges of the gutters or eavestrough are lower than the slope line to allow snow and ice to slide clear.

- ✓ Ensure gutters are free of debris.
- ✓ Use CRC StormTamer, GoldShield, ArmourGard or Stormshield Ice & Water Protector to help prevent water penetration due to ice dams and wind-driven rain.

Note: Product availability may vary per region.



A Guide to Asphalt Shingles

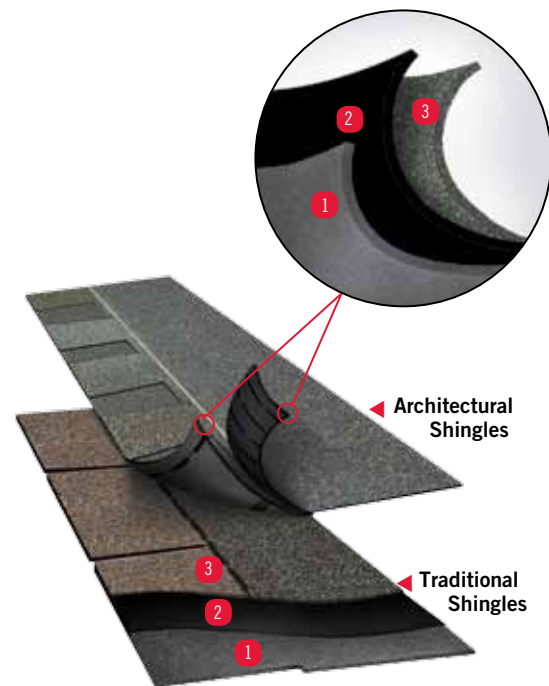
It is useful to look at the anatomy of an asphalt shingle to understand how the different components work together, and to see how asphalt shingles are designed to protect your home.

THE ANATOMY OF AN ASPHALT SHINGLE

The life expectancy of asphalt shingles is based on the performance of three components, and their ability to resist weathering. Made from petroleum, asphalt contains oils that make asphalt shingles easy to work with and effective at protecting your roof and home.

As time goes on, these oils come to the surface and are weathered away by the elements. It's this weathering process that ages a shingle.

1. **Reinforcement:** Asphalt shingles start out with an asphalt-coated fiberglass mat. This reinforcement is the structural base of the shingle, to which the other raw materials (asphalt and granules) are applied. In order for asphalt shingles to provide protection, the reinforcement must resist tearing, warping and shrinkage when applied on stable, well-ventilated decks.
2. **Asphalt:** During shingle manufacturing, the reinforcement is coated with asphalt to provide the water-resistant layer that protects your roof from the elements. The thickness of this layer of asphalt determines the weight of the shingle. Many believe that the heavier the shingle the greater the protection offered to your roof and home. This factor is only one of many that determines the life expectancy of your roof.
3. **Granules:** A layer of granules is pressed into the surface of the asphalt. The granules protect the layer of asphalt from the ultraviolet radiation from the sun. Without this layer of protection, the asphalt layer would quickly deteriorate.



THE ROOF ENVIRONMENT

Now, let's visit the roof environment. Subjected to harsh environmental weathering, shingles must endure everything from the scorching heat of the sun and its ultraviolet radiation to the effects of seasonal and environmental changes. They may even be subjected to the effects of thermal shock, caused by quickly changing weather conditions.

The Heat of the Sun

The scorching heat of the sun can raise the temperature of the roof's surface as high as 25 - 33°C (45 - 60°F) above ambient temperature. This can affect the life expectancy of asphalt shingles. Proper ventilation helps to reduce the fluctuation in the temperature of your roof over the course of the day, and can reduce your roof's overall ambient temperature.

Ultraviolet Radiation from the Sun

Besides the heat, the sun is also a source of ultraviolet radiation, which can make the asphalt layer of the shingles age more rapidly. In order to protect against this, asphalt shingles are covered by colored granules to protect the asphalt from the sun.

Thermal Shock and Cyclical Fatigue

Sudden changes in weather can put an enormous stress on your roof. As an example, a cold front may enter an area and change a bright and sunny day into a dark and rainy one, suddenly dropping roof surface temperatures 30 - 45°C (54 - 81°F) almost instantaneously. This may cause the roof deck beneath the shingles to expand and contract, causing stress on the asphalt shingles. This process, along with the yearly change from summer to winter, may result in cyclical fatigue.

Asphalt Shingles and the Passage of Time

Just like people, asphalt shingles gradually change with the passage of time. Signs of this aging process may appear as early as the first couple of years, during what is often called the Curing Phase. At first, you may notice small surface cracks, or a few small blisters. These changes will not affect the ability of the asphalt shingles to protect your roof, and are an anticipated part of the aging process.

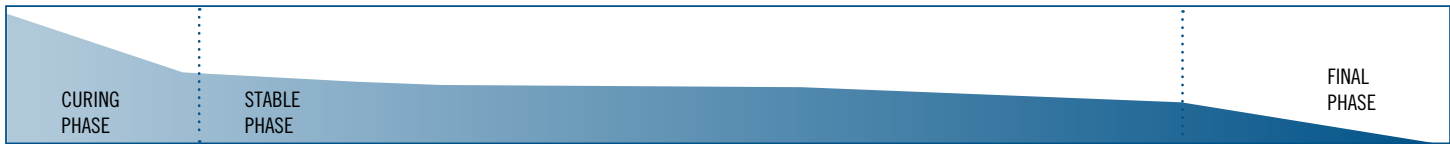
During the Stable Phase, these signs of aging will slow down dramatically.

The duration of the stable phase may last 20-30 years, but is dependent on many factors¹

including the construction of the asphalt shingles, the condition of your roof and roofing ventilation, the slope of your roof, as well as the workmanship of your roofing contractor.

Near the end of the expected life of asphalt shingles, the aging process begins to speed up. This is what is called the Final Phase, during which most homeowners start to think about replacing their asphalt shingles.

¹Location, materials, roof design, underlayment, installation, slope, and other factors.



The aging process of asphalt shingles can be broken down into three distinct phases. The three phases are: the curing phase, the stable phase, and the final phase.

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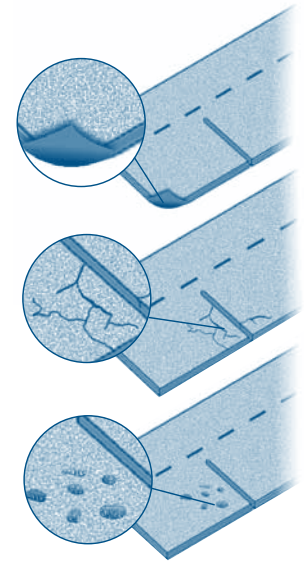
One of the things you may notice is a slight curling of the shingles along the bottom edge, particularly during cold weather. This is a normal occurrence of asphalt shingles and results from the natural loss of the oils from the asphalt.

SURFACE CRACKING:

Just like skin that has been exposed to the scorching heat of the sun, the surface of asphalt shingles reacts in a similar fashion. Like your skin, asphalt shingles may develop small surface cracks. This is a result of asphalt shingles becoming more brittle over time. Thermal shock and deck movement may also increase the occurrence of surface cracking.

BLISTERS:

As asphalt shingles age, large bubble-like blisters may appear on the surface, some as large as a quarter. They may be open, exposing the asphalt, or closed. Blisters are more likely to appear when there is inadequate ventilation, or in areas where tree sap drips onto the shingles. Small “rash” blisters do not affect the performance of the shingles.



COMMONLY ASKED QUESTIONS

To help you, we have listed some of the commonly asked questions regarding the effects of aging. For the most part, signs of natural aging are to be expected, and do not affect the performance of asphalt shingles.

THERE ARE GRANULES COLLECTING IN MY GUTTERS. WILL THIS AFFECT MY SHINGLES?

Excess granules that are not embedded in the asphalt during the manufacturing process will wash away with time. During the life of an asphalt shingle, these granules will continue to collect in the gutters of your roof. Granule loss is not a concern unless patches of exposed asphalt start to appear. If large areas of exposed asphalt start to appear, action is required. Please refer to the “Overview of the Limited Warranty” section for further details.

THERE ARE SMALL CRACKS ON MY SHINGLES. IS THIS A CONCERN?

Small cracks, often unnoticeable from the ground, do not affect the ability of the shingle to protect your roof and home. Small surface cracks should not cause concern. On the other hand, cracks that penetrate through the reinforcement of the shingle can inhibit the ability of the shingle to protect against water leakage. Cracks that penetrate through the reinforcement require immediate attention. Please refer to the “Overview of the Limited

Warranty” section for further details.

THERE ARE DARK BROWN OR BLACK STREAKS ON MY ROOF. ARE THESE STAINS?

These streaks, often mistaken for dirt, soot, granule loss, moss or tree droppings, are actually caused by algae growth. Algae, while not cosmetically pleasing, does not affect the water resistance of asphalt shingles, and is not an immediate concern. If you live in an area where algae discoloration is common, you may want to consider using our Crowne Slate[†], Royal Estate[†], Biltmore™ AR, Grandeur[†], Armourshake[†], Superglass Ultra AR & Superglass 25 M AR shingles, which have built-in resistance to algae discoloration.

Note: Product availability may vary per region. [†]Packaged in IKO wrappers

Overview of the CRC Limited Warranty

Important Note:

The information in this section will help explain some warranty terms and conditions. It does not replace or modify the actual written limited warranty, and any potential variances in information presented shall be decided in favor of the written limited warranty.

It is imperative for a well-informed homeowner to retain a copy of the manufacturer's limited warranty statement, which applies to the specific shingle product which was purchased and installed, as well as a copy of their contractor agreement. Please read the warranty statement carefully to avoid potential misunderstandings, which may occur in the event of a problem with the shingles. The warranty statement will typically spell out the length of the warranty, how claims are to be handled, limitations, exclusions, etc.

SOME KEY POINTS IN MOST MANUFACTURERS' WRITTEN LIMITED WARRANTIES THAT THE HOMEOWNER SHOULD BE AWARE OF ARE:

Duration - Although this is clearly stated for a certain number of years (25, 30, etc.), or a limited lifetime material warranty in the case of products such as the CRC Crowne Slate[†], Biltmore[™], Grandeur[†], Royal Estate[†] and Armourshake[†] shingle, it is important to observe how claims are determined late in the warranty period. Usually, there is a period of full coverage, which includes labor for re-installation (often called the "Protection Period"). This is followed by replacement coverage for the cost of the shingles only, which is usually governed by one or more prorating factors based upon how long the shingles have been installed, and the number of years remaining on the limited material warranty.

Protection Period - For a specific number of years at the beginning of the warranty period, if defects are found in the shingles resulting in leaks as a result of the manufacturing process, and the homeowner is within the allotted Protection Period, the manufacturer will replace the material (shingles) and pay reasonable labor costs, exclusive of tear-offs. After the Protection

Period, the liability of the manufacturer is generally limited to providing a prorated cost of the original shingles.

Limited Transferability - As of November 1994, subject to certain conditions and limited to specified time periods, IKO allows certain provisions of its Asphalt Shingle Limited Warranty to be transferred by the original owner to the next property owner for specified limited periods of time. It is important that the homeowner and the prospective home buyer understand the limitations, and the conditions, procedures and requirements necessary to effect this limited transfer. Please make sure you review the Asphalt Shingle Limited Warranty.

Please understand that no one, including the contractor or a CRC representative, can modify or amend the written limited warranty that accompanies the shingles - the limited warranty is not negotiable.

Note: [†]Packaged in IKO wrappers

WHAT DO YOU DO IF YOU HAVE A PROBLEM

If a problem arises with your roof and you believe it may be covered under the limited warranty, we ask that you take the following steps:

1. If your problem is catastrophic in nature and endangers your home, such as *severe or acute* leaks, severe hail damage, or blow-offs, do not delay in taking immediate steps to protect your home. It is the responsibility of the homeowner to take and / or initiate corrective action in the event of any potentially damaging roof problem, since manufacturer's warranties specifically exclude incidental or consequential damages. In the absence of an emergency which endangers your home unless immediate steps are taken, the CRC Limited Warranty will not provide coverage unless the repairs or replacements are authorized in writing by CRC.
2. If your roof is damaged by causes which are obviously not warranty-related, such as weather related damage (hail damage, blow-offs, etc.), take immediate actions to protect your home from further damage, then contact your insurance agent.
3. If your concern pertains to the installation, you should contact the contractor immediately. If you're uncertain, it might be wise to contact the contractor in any event; he can evaluate the problem and help determine probable cause.
4. If the cause of the problem is seriously in question, the homeowner may wish to pay to have a certified independent building inspector investigate it.
5. If the problem pertains to the shingles themselves, it is the responsibility of the homeowner to contact the manufacturer. Typically, you will receive a request for information containing forms and other information regarding warranty claims. In the case of CRC's limited warranties, instructions are also contained within the warranty statement itself.

WHEN FILING A WARRANTY CLAIM, HERE ARE SOME IMPORTANT TIPS:

- ✓ Proof of purchase, which must identify the following: that the shingles are CRC shingles, the type of CRC shingle, the quantity of CRC shingles, and the date the CRC shingles were purchased.
- ✓ Act in a timely manner; do not delay your claim. (CRC asks that you notify us within 30 days of discovery of an alleged concern with the shingles.)
- ✓ Fill out all requested forms completely and provide all requested information, including photographs and shingle samples, with your claim.

Find out more about our products now by talking to an CRC sales representative, your professional roofing contractor or contact us directly at:

Eastern Canada 1-866-482-0811, Western Canada 1-800-661-1034 or visit our website at: www.canroof.com

Note: The information in this literature is subject to change without notice. CRC assumes no responsibility for errors that may appear in this literature.

