

HOMEOWNER QUALITY ROOFING & INSPECTION GUIDE

AMBASSADOR ROOFER



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Homeowner Quality Roofing Guide

Charles Cox

Ambassador Roofing

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Abstract:

This paper provides a comprehensive exploration of the quality control procedures specific to asphalt shingle roof system installations, as outlined by the Asphalt Roofing Manufacturers Association and the National Roofing Contractors Association (NRCA). A particular focus is given to the evaluation and visual examination practices employed during the application of these roof systems, underlining the importance of detailed inspections by site supervisors and field superintendents. We delve into the key components that constitute an effective application quality control program, discussing the criteria for evaluating the roof substrate surfaces, underlayment, drip edge, fasteners, asphalt shingles, and flashings. The paper further elaborates on the necessary corrective actions when the installations do not meet the specified standards. Additionally, the role of project sequencing and housekeeping as integral parts of the quality control process is explored. The paper concludes with a discussion on how the quality control guidelines can be utilized by homeowners to understand the installation process and by contractors to improve their installation procedures. The aim of this paper is to foster a thorough understanding of the pivotal role of quality control in ensuring the longevity and effectiveness of asphalt shingle roof systems.

Homeowner Quality Roofing Guide

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I. Introduction

A. Background of Asphalt Shingle Roof Systems

Imagine you're standing in front of a beautiful house. One of the first things that likely catches your eye is the roof, a protective shield that stands between the home and the elements. If it's well-maintained, it adds not only to the house's overall appeal but also its value. This is especially true when we're talking about asphalt shingle roof systems.

Asphalt shingle roof systems are among the most popular types of roofing in the United States. They serve a dual purpose: not only do they provide a durable shield against the weather, they also contribute to the aesthetic appeal of a home. Picture them as the helmet of a knight, offering both protection and a display of stature.

Behind the scenes, organizations like the Asphalt Roofing Manufacturers Association (ARMA) and the National Roofing Contractors Association (NRCA) work tirelessly to ensure the quality of these roof systems. ARMA, akin to a guild of master craftsmen, represents the companies that manufacture asphalt roofing and their raw material suppliers. On the other hand, the NRCA is like the teachers and librarians of the roofing world, providing information, education, technology, and advocacy for the industry.

B. Importance of Quality Control in Roofing Installations

Think of quality control as the referee in a basketball game. Just as the referee ensures the players follow the rules, quality control in roofing installations ensures that the procedures specific to asphalt shingle roof system installations are adhered to. It plays a significant role in ensuring the longevity and effectiveness of these roof systems.

Existing quality control procedures involve a wide array of steps and checks, much like a detailed recipe for a gourmet dish. These procedures cover everything from the inspection of materials before, during, and after installation, to the verification of proper nailing techniques and patterns. It includes assessment of the underlayment and drip edge installations, evaluation of flashing and fastener applications, and so much more. Following these procedures allows roofing contractors to deliver high-quality installations that meet or exceed industry standards, ensuring homeowners can rely on their roofs for years to come.

II. Evaluation of Quality in Roofing Installations

A. The Evaluation Process

Imagine you're building a house. Each part of the construction process, from laying the foundation to painting the final coat, requires careful oversight to ensure quality. The same rings true for installing an asphalt shingle roof system.

The evaluation process starts at the time of application, where meticulous scrutiny is crucial. Think of it as a chef carefully tasting the soup before serving it to their customers. The chef knows that one unbalanced ingredient can throw off the entire dish. Similarly, in the context of roofing, one poorly installed shingle or an improperly placed nail can compromise the entire roof's performance.

Here's where the job-site lead persons, foremen, and contractor's field superintendents come into play. They are the chefs in our analogy, ensuring that each 'ingredient' or component of the roof system is properly installed. Their role involves observing the application process, ensuring that the materials used are up to standard, and that each step of the installation adheres to the quality control guidelines.

B. Visual Examination

Now let's talk about the visual examination, a vital part of the evaluation process. Imagine you're buying a used car. You wouldn't just start the engine, would you? You'd walk around it, looking for scratches, dents, or signs of rust. You'd open the hood to inspect the engine and get inside to check the upholstery. That's precisely what a visual examination in roofing installations is all about.

Visual examination is the first line of defense in assessing the quality of a new asphalt shingle roof system. It involves a comprehensive inspection of

the roof, from the eaves to the ridge, looking for any visual inconsistencies or issues that might affect the roof's performance.

So, what should be looked for during a visual examination? There are several factors to consider. For instance, are the shingles laid out in straight lines and properly aligned at the edges? Are the fasteners driven straight and do they penetrate the roof deck fully? Is the underlayment smooth and wrinkle-free? Do the flashings properly cover the intersections to prevent water intrusion?

The answers to these questions determine whether the roof system has been installed correctly or if corrective measures need to be taken. Just like a doctor wouldn't diagnose a patient without a thorough check-up, a roofing professional shouldn't confirm a job well done without a comprehensive visual examination.

III. Effective Quality Control Program

A. Elements of an Effective Application Quality Control Program

Let's consider a symphony orchestra for a moment. Each instrument and musician contributes to the overall performance, and the conductor is there to ensure each component works in harmony to produce beautiful music. An effective application quality control program in roofing installations operates in a similar fashion. It involves many components, each playing a critical role, and a keen overseer ensuring everything works together seamlessly.

The first element of this program is material inspection. Prior to application, it's important to inspect the asphalt shingles, underlayment, drip edge, and fasteners to ensure they meet the necessary standards. Picture this as a chef examining each ingredient before starting to cook a gourmet meal. The quality of the ingredients directly influences the outcome of the dish.

Next comes installation monitoring, which involves overseeing the application of each component. This process is akin to a film director watching actors perform a scene, ensuring every detail aligns with the script.

Lastly, a post-installation review is conducted, where the installed roof system is evaluated for quality and adherence to industry standards. Think of this as a teacher grading a student's homework, checking for understanding and correct answers.

B. Evaluation Criteria and Corrective Action

Now, let's discuss the evaluation criteria for the roof substrate surfaces, underlayment, drip edge, fasteners, asphalt shingles, and flashings.

The roof substrate surface should be smooth and clean, free of any debris or materials that could puncture the underlayment or shingles. Picture a

canvas ready for painting, clean and smooth, ensuring the paint goes on evenly and without blemish.

The underlayment, which acts as an additional barrier against water penetration, should be flat, wrinkle-free, and properly secured to the roof deck. Think of it as the base layer of a cake, laid out perfectly to support the layers above.

The drip edge should be installed along the eaves and rakes of the roof to direct water away from the roof deck. Visualize it as the brim of a hat, guiding the rain away from your face.

Fasteners must penetrate the roof deck fully and be driven straight. These are the glue that holds the roof system together, and their correct application is essential for the roof's performance.

Asphalt shingles should be properly aligned, with the correct exposure, to ensure they can effectively shed water. Imagine them as the outer shell of a tortoise, arranged to provide maximum protection.

Flashings should be installed at all roof penetrations and intersections to prevent water intrusion. Consider these the seals on a submarine door, preventing water from entering and causing damage.

If these criteria are not met, corrective actions are necessary. This might involve replacing damaged shingles, adjusting improperly installed flashings, or repositioning misaligned fasteners. It's like editing a manuscript, making necessary corrections to improve the final product. These corrective actions are vital to ensure the roof performs its primary function - protecting the building from the elements, thus extending the roof's lifespan and quality.

IV. Project Sequencing and Housekeeping

A. Importance of Project Sequencing in Quality Control

Project sequencing in roofing installations is much like following the steps of a recipe when baking a cake. If you've ever tried to bake a cake, you know that the order in which you add the ingredients matters as much as the ingredients themselves. You wouldn't add the frosting before baking the cake, would you? Similarly, in roofing, the sequence in which tasks are completed significantly affects the quality of the final product.

For instance, before shingles can be installed, the roof deck needs to be inspected and prepared, the underlayment must be applied, and the drip edge installed. Skipping a step or executing them in the wrong order could lead to a roof system that is less effective at shedding water or more prone to damage from wind uplift.

The checklist for project sequencing serves as a roadmap, guiding the roofing team through each stage of the installation. Like a GPS for a driver, it ensures no step is missed, and each task is carried out in the correct order, contributing to a high-quality, durable asphalt shingle roof system.

B. Housekeeping and Quality Control

Now, let's talk about housekeeping. You might be wondering, "What does cleaning have to do with roofing?" Well, imagine trying to cook a meal in a messy kitchen. You'd likely have a hard time finding the ingredients you need, and you might even trip over something left on the floor. In the same way, good housekeeping during a roofing project is crucial for maintaining the quality of the installation.

A tidy worksite enables workers to move more easily, reduces the risk of accidents, and helps prevent debris from damaging the new roof system.

Picture the worksite as a dance floor; the more clutter-free it is, the better the performance.

The housekeeping checklist in the document acts like a helpful housemaid, reminding workers to regularly clear the work area of debris, properly dispose of old roofing materials, and safely store tools and equipment. This attention to cleanliness and order not only ensures a safer work environment but also aids in delivering a quality finished product: a well-installed, durable asphalt shingle roof system.

V. Conclusion

A. Recap of the Importance of Quality Control in Asphalt Shingle Roof System Installations

So let's circle back and recap what we've learned about the importance of quality control in asphalt shingle roof system installations. Much like the conductor of an orchestra, quality control sets the tempo and ensures each player - or in this case, each element of the roofing process - contributes to a harmonious end product. From the inspection of materials and project sequencing to housekeeping and post-installation review, each step plays a critical role in creating a roof that not only looks good but stands the test of time, weather, and wear.

B. How These Guidelines Can Benefit Homeowners and Contractors

Now, let's talk about you, the reader. If you're a homeowner, understanding these quality control guidelines is like having a behind-the-scenes tour of a theater production. It gives you insight into what goes into a quality roofing installation, empowering you to ask informed questions and have more meaningful conversations with your roofing contractor. It's like knowing what goes into making a gourmet meal, which can help you appreciate the final product even more.

For contractors, these guidelines are akin to a master craftsman's blueprint. They provide a clear path to follow, ensuring each roof you install meets industry standards and delivers on the promise of quality and durability. Following these guidelines is like using a tried-and-true recipe; you can be confident that the end result will be consistently excellent.

Ultimately, whether you're a homeowner or a contractor, understanding and applying these quality control guidelines can contribute to a better roofing experience and a final product - a well-installed asphalt shingle roof system - that you can be proud of.

Compendium:

A Comprehensive Guide to Roof Inspections Post-Hailstorms

Roof inspections are an indispensable part of maintaining the integrity of a structure. A well-executed inspection can not only identify potential issues but also prevent further damage by addressing them promptly. This is particularly important after events such as hailstorms, which can cause significant harm to a roof. Here, we outline a thorough, systematic approach to conducting roof inspections post-hailstorms, using guidelines established by the Texas state and HAAG quality level roofing inspection protocols.

Pre and Post-Inclement Weather Inspections

Always inspect the roof prior to and after inclement weather warnings. This can help decrease the impact of flying projectiles, blocked drains, or protect valuable machinery prior to heavy winds or hail. A quick walkthrough should be done after the storm to ensure there is no known damage which could increase the cost of the loss if not attended to quickly.

Regular Inspections

Conduct regular roof inspections at least once a year. Roofs that create a greater-than-typical exposure, such as those with older age, high leaf exposure, or roof-mounted equipment, may require more frequent inspections. The timing for these inspections should also be considered, such as during hurricane preparedness, fall leaves, or based on the history of past inspection conditions.

Systematic Inspection Procedures

Use systematic inspection procedures and thorough documentation during the inspection. This involves gaining knowledge of the specific roofing product in question, sometimes requiring testing. The HAAG test square methodology is an industry standard for hail damage inspection of roofing.

This involves inspecting 100-square-foot areas, usually in the form of 10-foot by 10-foot squares, for hail damage. At least one test area inspection should be performed per each direction of the roof (north, south, east, and west). Additional test areas may be considered if notably different roof conditions are present.

Identification of Hail-Caused Damage

Hail-caused damage to asphalt shingles is often described as a bruise (fracture of the reinforcing mat), puncture, or displacement of granules sufficient to expose underlying bitumen. However, it's important to note that regions of missing granules are often mistaken as hail-caused damage. It's crucial to compare the frequency or distribution of the missing granules to the frequency of hail at the site and the known, random distribution of hail.

Comparative Analysis of Various Surfaces

Conduct a comparative analysis of various surfaces at the property to establish evidence of hailfall, to determine if the hailfall was recent, and to discern the approximate size, hardness, and directionality of the hail. This surface analysis should ideally be performed first to inform the inspector of the hail history at a location. Then the roof examination can be performed already having the knowledge of recent and past storms, allowing the inspector to develop informed opinions regarding conditions observed on the roof.

Decision Making

Lastly, an economical decision to repair or replace a roof can be made after the extent of hail damage is known. An effective roof inspection is not just about identifying damage but also about making informed, practical decisions about the future of the roof based on the inspection findings.

In conclusion, conducting a thorough and systematic roof inspection after a hailstorm is vital. It involves pre and post-weather inspections, regular

checks, using systematic procedures, identifying hail-caused damage, analyzing various surfaces, and making informed decisions. By following these steps, you can ensure the longevity and durability of your roof, ultimately protecting your property from further damage.

Housekeeping Guide for Homeowners and Contractors

Part 1: General Roof Inspection

Safety First: This should always be your priority. Wear sturdy shoes with good traction, use a safe and stable ladder, and have a second person on hand to spot you. Do not attempt to climb onto the roof if it appears damaged or unstable.

Ground-Level Inspection: Stand at a safe distance from your home and inspect the roof with binoculars. Look for obvious signs of damage such as missing or visibly damaged shingles, sagging areas, or piles of shingle granules. Check for loose or hanging gutters and downspouts.

Ladder Inspection: If safe, use a ladder to get a closer look at your roof. Don't walk on the roof; instead, use the ladder to inspect different sections. Look for lifting or buckling shingles, missing nails, or rusted flashing.

Shingles Check: Are they lying flat against the roof? Do you see any cracks, tears, or missing pieces? Warped, curled, or missing shingles can be a sign of a worn-out roof.

Loose Material and Wear: Around chimneys, vents, pipes, or other penetrations, look for wear or loose material. This is often where leaks can start.

Gutter Granules: Inspect the gutters for a build-up of shingle granules – a lot of granules can mean your shingles are nearing the end of their lifespan.

Moisture, Rot, and Mold: These signs could indicate water damage inside your home. Check your attic and upper floors for signs of leaks, such as water stains or mold.

Part 2: Post-Roofing Installation Inspection

Workmanship Review: Check the alignment of the shingles – are they straight and evenly placed? Inspect the nails – are they driven straight and flush with the shingle surface?

Flashing Check: Ensure that flashing is correctly installed around all roof penetrations like chimneys, vents, and where walls meet the roof. The flashing should be free of rust or damage.

Gutters and Downspouts: Confirm that gutters and downspouts are securely attached and directing water well away from your house's foundation. They should be free of debris.

Ventilation Check: Inadequate ventilation can lead to moisture problems and decreased insulation effectiveness. Check that vents are not blocked and that air can freely flow into and out of your attic or crawlspace.

Part 3: Post-Storm Inspection

Roof Damage: After a storm, check your roof for damage. Look for missing shingles or metal flashing, and inspect for piles of granules in your gutters or downspouts.

Gutter and Downspout Damage: Inspect your gutters and downspouts for dents or detached sections – these can be signs of hail or wind damage.

Hail Damage: Look for signs of hail damage, such as dents in the shingles or granules missing in a circular pattern. The severity of hail damage can vary depending on the size and density of the hailstones.

Indoor Water Damage: Check your ceilings and walls for water stains or peeling paint – these are signs of possible roof leaks.

Part 4: Professional Inspection

Call a Professional: If you notice any signs of damage or have any doubts about your roof's condition, it's best to call in a professional. They are trained to spot early signs of damage and can provide a comprehensive inspection.

Regular Inspections: Even if you don't notice any problems, it's a good idea to have your roof professionally inspected at least once a year or after severe weather events.

Documentation: Have the professional provide you with a detailed report of their findings. This report should include information about the overall condition of your roof, any damage or potential issues found, and recommended repairs or maintenance.

Training: Make sure the professional you hire is trained in inspecting for hail damage, if applicable. Hail damage can be difficult to identify and requires a trained eye to accurately assess. They should be familiar with the test square methodology, which uses a 10-foot by 10-foot square to visually and tactically inspect the roofing for hail damage.

Understanding of Roof Types: Different roof materials require different inspection techniques and considerations. For instance, asphalt shingles can lose granules due to various causes, such as weathering, material issues, or foot-caused scuffs. These conditions may be mistaken for hail effects on asphalt shingles, so it's important for a professional to understand these distinctions.

Comparative Analysis: Ideally, the professional will also conduct a comparative analysis of various surfaces at the property to establish evidence of hailfall, determine if the hailfall was recent, and discern the approximate size, hardness, and directionality of the hail.

Comprehensive Roof Inspection Checklist

1. General Inspection

Inspect for visible signs of damage such as broken or missing shingles.

Look for signs of wear and tear and any damaged flashing.

Check for any evidence of leaks or water damage inside the building, such as water stains or dampness in the attic or upper levels of the building.

2. Ventilation Check

Ensure that the roof has proper attic ventilation. Follow the Federal Housing Administration (FHA) recommendation of a 1:300 ratio for attic ventilation. For every 300 square feet of attic space, there should be 1 square foot of attic ventilation.

Make sure ventilation is balanced between the soffits (intake) and the roof or gables (exhaust). This can be achieved by having 50% of the ventilation in the soffits and 50% in the roof or gables.

3. Gutter and Downspout Inspection

Inspect gutters and downspouts for blockages and clean if necessary, as these can lead to water back up and damage the roof.

4. Hail Damage Inspection

Inspect for signs of hail damage, such as bruising, punctures, or displacement of granules on asphalt shingles.

Conduct a comparative analysis of various surfaces at the property (including but not limited to the roof) to establish evidence of hailfall, to determine if the hailfall was recent, and to discern the approximate size, hardness, and directionality of the hail. Surfaces to check include utility

junction boxes, fences, gutters, downspouts, decks, and air-conditioner condenser fins.

Assess poorly supported shingles along ridges and valleys to determine if hail was able to damage the roof.

Identify 100-square-foot test squares (commonly 10-foot by 10-foot squares) on the roof to perform up-close visual and tactile inspection of roofing for hail damage. Conduct at least one test area inspection per each direction of the roof (north, south, east, and west).

Remember, it's advisable to conduct these inspections at least once per year, with increased frequency for roofs with specific risk factors like aging, leaf exposure, or roof-mounted equipment. Always ensure to take necessary safety precautions while performing these inspections and consider consulting with a professional for more detailed guidance or if significant damage is found.