The Roof is Damaged – Can it be Repaired?

Introduction

If you own a building, you will likely end up asking yourself this question.

Can it be repaired?

The simple answer is: It depends.

Certain people would like us to believe that a particular roofing system will last a lifetime or that their product is resistant to large hail or strong wind. When these statements are presented, it might be best to read the fine print in the literature to understand what that really means.

All facts must be studied. As with any problem, a correct answer starts with gathering the facts. If we don't know where to begin, we should start with these questions:

- What was damaged?
- What damaged the item?
- How old was it?
- When was it damaged?

Example 1: Large Hail

A simple web search on, "Record Setting Hail Event" will result in photos of massive hail. According to the National Weather Service (NWS), on 7/23/2010 Vivian, South Dakota had extremely large hail. A hailstone was found that measured 8.0 inches in diameter.

Question: What can stop this missile from plummeting to earth at some ungodly velocity?

Answer: Not much can stop it without incurring damage. Do we really need to ask other questions when this hits a roof? Nothing is really made to stop hail this size unless we are talking about storm shelters.

Example 2: Extreme Wind

Unfortunately, there are assignment where the scope of work is:

Can we reuse the foundation?

Tornado winds are just too strong for residential homes. In this case, there was no roof to be repaired. There was no roof structure to install asphalt shingles.

Example 3: Extreme Waves

Unfortunately, there are assignments where the scope of work is:

What caused the damage?

Hurricanes can have a storm surge where the moving water can be violent. A closer look at the roof shingles on this collapsed building showed no missing roof shingles.

It may seem like a meaningless observation, but if wind were to be blamed for a collapse, there should be other items damaged by wind.

Example 4: Code Language Used to Prohibit Repairs

Problem: An asphalt shingled roof had minor isolated wind damage in the field of a slope. The rest of the roof was in good condition.

The contractor told the owner that the local building code required that all the roof shingles above the damaged area need to be replaced in a V-pattern up to the ridge due to code language citing paragraph R908.5 of IRC.

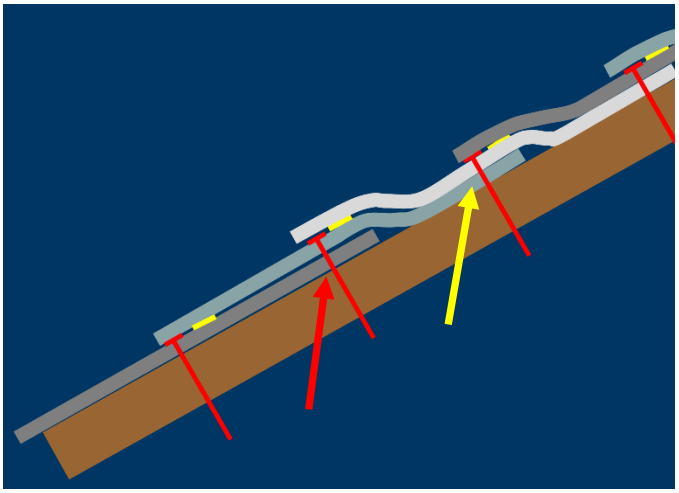
IRC R908.5 Reinstallation of materials
Aggregate surfacing materials shall not be reinstalled

The contractor states that:

- in order to remove and replace a damaged shingle, the shingles above the repair will need to be removed and replaced because of nail holes.
- when a securing fastener is removed from an asphalt shingle it cannot be reinstalled. Consequently, the overlapping shingles must be removed rather than detached and reset.

The image below describes the problem. The image is a cross section through the layering of an asphalt shingled roof. Assume the light blue shingle in the middle of the image needed to be replaced, the two nails securing the shingle would need to be removed. This leaves holes:

- holes at the top of the lower shingle (red arrow)
- holes at the mid-point of the upper shingle (yellow arrow)



Answer: The contractor was in error of his interpretation of the code for the following reasons:

1. Strictly reading the code, the shingles below and above an isolated repair are not taken off the roof and reinstalled; therefore, this section of the code does not apply to undamaged shingles.
2. Asphalt shingled roofs have been successfully patched on numerous roofs for years. It has been a long-time approved method of repair.
3. There are no asphalt roof manufacturer's stating that their product cannot be repaired.

Example 5: Wind Rating vs Code Approved Shingles

Problem: An asphalt shingled roof had minor isolated wind damage in the field of a slope. The rest of the roof was in good condition.

The contractor told the owner that the local building code required that the entire roof must be replaced because

1. The wind warranty literature on the labeling of the replacement shingles showed 60 mph. The replacement shingles were not code compliant. Specifically, they did not meet the 115 mph wind rating. Therefore, different shingles would need to be used for the repair.
2. Because the new proposed replacement shingles do not match the exiting roof, the entire roof would need to be replaced due to matching rules.

Answer: The contractor was in error of his interpretation of the code for the following reasons:

Per the MN building code, asphalt shingle product labeling must indicate compliance with

- ASTM D3462 - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
- ASTM D7158 - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules.

  ASTM D7158 classification D (115/90 mph) or

  ASTM D7158 classification G (150/120 mph) or

  ASTM D7158 classification H (190/150 mph)
- 115 Ultimate Design Wind Speed per the IRC R301.2(5) map (115 mph for central USA).

This has nothing to do with how a company wants to warranty their product. Any product warranty language must not be confused with the code requirement that shingles comply with the ASTM standards.

Most asphalt roofing products on the market carry the same wind resistance classification of:

ASTM D7158 classification H (190/150 mph)

Conclusions

Code questions or building repair questions are site specific.

Code enforcement has the goal of helping the general public build and continue to live in safe, economical buildings.

General code rules are made, but it is difficult to write rules that cover every aspect of every building. Reasoning must be used to evaluate structures.

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