

# **Silicone on Metal Roofs: NO!!!**

## **Introduction**

Metal roofing systems have gained popularity in both commercial and residential applications due to their durability, longevity, and energy efficiency. However, even metal roofs are not immune to the effects of time, weather, and corrosion. As these roofs age, property owners often explore restoration options to prolong their lifespan and enhance their performance. One such option is applying a silicone roof coating. While silicone roof coatings have numerous advantages, they are not always the ideal solution for restoring a metal roof. In this article, we will explore the limitations and potential drawbacks of restoring a metal roof with a silicone roof coating.

## **Understanding Metal Roofing Systems**

Metal roofing systems are known for their resilience, making them a popular choice for various types of buildings. They are typically constructed from materials such as steel, aluminum, zinc, or copper and are designed to withstand harsh weather conditions, including rain, snow, hail, and UV radiation. Metal roofs offer excellent longevity, often lasting 50 years or more with proper maintenance.

## **The Appeal of Silicone Roof Coatings**

Silicone roof coatings have gained recognition as a versatile and cost-effective solution for extending the life of roofing systems. These coatings offer several advantages, which include:

1. **Waterproofing:** Silicone coatings create a seamless, waterproof membrane that prevents water infiltration and protects the underlying roof substrate.
2. **Reflectivity:** Silicone coatings have high reflectivity and can help reduce the heat absorbed by the building, leading to potential energy savings.
3. **UV Resistance:** They are highly resistant to UV radiation and can prevent premature degradation and rusting of metal roofing materials.
4. **Flexibility:** Silicone coatings maintain flexibility over a wide temperature range, allowing them to expand and contract with metal roofing systems without cracking.
5. **Ease of Application:** Silicone coatings are relatively easy to apply, making them an attractive option for roofing professionals.

## **Limitations and potential drawbacks when used on metal roofing systems**

1. **Silicone Roof Coatings have very poor tear strength.** Although they do have flexibility and can accommodate some movement, their baseline physical properties are not as high as other elastomeric coating options that are designed specifically for metal roofing systems. Metal roofs are known for their significant expansion and contraction with temperature fluctuations.
2. **Incompatibility with Rust:** Metal roofs, particularly those made of steel, are susceptible to corrosion and rust over time. Silicone coatings do not effectively bond with rusted surfaces, and applying them over rust without proper preparation can lead to adhesion issues and premature coating failure.

3. **Surface Preparation Challenges:** Achieving proper adhesion with a silicone roof coating on a metal roof requires thorough surface preparation. This process typically includes cleaning, rust removal, and sometimes priming. Preparing a metal roof surface for coating can be time-consuming, labor-intensive, and may involve additional costs.
4. **Limited Rust Remediation:** While silicone coatings can provide some protection against further rusting, they are not a long-term solution for extensive corrosion on a metal roof. Applying silicone directly over heavily rusted areas may not effectively address the underlying problem.
5. **Limited Durability on High-Foot-Traffic Roofs:** Silicone coatings may not be the best choice for metal roofs subject to heavy foot traffic, such as those on industrial or commercial buildings. The constant wear and tear can lead to coating degradation, requiring frequent maintenance or recoating.
6. **Safety concerns due to slippage.** Silicone coatings are very slippery. On a sloped metal roof there is a good chance a person could slip and fall off.
8. **Discoloration:** Silicones naturally pick up a lot of dirt and tend to get dingy brown quite quickly. Many metal roofs are sloped and can be seen from the ground. Often this dingy look is not slightly and does not offer the same high reflectance long term when compared to other bright white elastomeric coatings.

## **Conclusion**

While silicone roof coatings offer numerous benefits for certain roofing systems, restoring a metal roof with a silicone coating may not always be the best choice. The limitations, such as incompatibility with rust, surface preparation challenges, limited rust remediation capabilities, and potential issues with expansion and contraction, can impact the long-term effectiveness of the coating.

Property owners and roofing professionals should carefully assess the condition of the metal roof, its specific needs, and the desired performance goals before deciding on a restoration method. In some cases, alternative solutions, such as elastomeric coatings or metal roof restoration systems designed specifically for metal roofing substrates, may provide a more suitable and durable option for extending the life and enhancing the performance of aging metal roofs.

Ultimately, a thorough evaluation by roofing experts and consideration of the unique characteristics of the metal roof in question are essential for making an informed decision regarding the choice of restoration materials and methods.