

# Do Metal Roofs Attract Lightning?

Posted by [McElroy Metal](#) • December 23, 2019

While the materials in a metal roof, specifically steel, are conductive they do not attract lightning according to the Metal Construction Association. In fact, a metal roof may actually be an advantage if a building is struck by lightning.



In the [MCA technical bulletin "Lightning Strikes and Metal Roofing"](#) it states that "Research has shown that the material used in roof construction does not influence the risk of a lightning strike. There are several other factors that may influence the risk of a lightning strike that will be discussed; however, the presence of a metal roof may actually be beneficial in a situation where a lightning strike has taken place."

The two areas to consider when thinking about lightning are the probability of a lightning strike and the consequence of a lightning strike.

## **Metal Roofing and the Probability of a Lightning Strike**

Essentially there is nothing anyone can do to lessen the probability of a lightning strike. Lightning strikes are however influenced by several factors.

- Topography - is the building on an elevated site or a low lying area?  
Lightning strikes are more likely at higher elevation since it is drawn towards the highest points in any given area.
- Building height - the highest building relative to the ones around it is the one most likely to be hit by a lightning strike.
- Building size - a larger surface area is more likely to be hit than a smaller one
- Geography - is your location more or less prone to lightning activity?

The MCA report states that metal buildings are no more or less prone to be hit by lightning than a building using another roofing material.

The above four factors do contribute to the probability of a lightning strike though.

## **Metal Roofing and the Consequences of a Lightning Strike**

What happens when lightning strikes a building? Lightning is a significant threat to people and property and should be taken seriously. A few things affect the seriousness of that threat including:

- Construction materials - if the framing and roofing of a structure are electrically conductive the charge from a lightning strike will pass through these materials and not build up heat through resistance reducing the possibility of fire.
- Building materials - if the building is constructed with non-combustible materials they will not be a fuel source for a possible fire resulting from a lightning strike.
- What's in the building - sensitive flammable materials in the building are susceptible to ignition.

## **Metal Roofing Reduces the Threat From Lightning Strikes**

The MCA report states that "based on all of the available evidence, on any given building, a metal roof is no more or less likely to be struck by lightning than any other type of roofing material. In fact, a properly grounded metal roof, in accordance with the requirements of NFPA 780, will actually conduct the energy from a lightning strike over the broader area of the roof reducing the amount of heat transferred to the building and reducing the potential of damage do to fire. As an electrical conductor and a noncombustible material, the risks associated with use of a metal roof may even be a more desirable construction option."

Building owners should consult with local experts to determine the best lightning mitigation strategies for their particular location and conditions.

### **About McElroy Metal**

Since 1963, McElroy Metal has served the construction industry with quality products and excellent customer service. The family-owned components manufacturer is headquartered in Bossier City, La., and has 13 manufacturing facilities across the United States. Quality, service and performance have been the cornerstone of McElroy Metal's business philosophy and have contributed to the success of the company through the years. As a preferred service provider, these values will continue to be at the forefront of McElroy Metal's model along with a strong focus on the customer.