

Jaymar Construction LLC Explains Why Temperature Changes Cause Metal Roofing Systems to Move

SLIDELL, LA, UNITED STATES,

September 25, 2026 /

EINPresswire.com/ --

Metal roofing systems are exposed to repeated temperature changes throughout the year, causing panels and related components to expand as temperatures rise and contract as temperatures fall. Although the amount of movement may be small within an individual section of metal, the combined effect across an entire roof can influence fasteners, seams, flashing, penetrations, sealants, and other components.



Jaymar Construction LLC, based in Slidell, Louisiana, is providing information about thermal expansion and contraction and the role those natural processes play in metal roofing performance.



Movement in a metal roofing system does not automatically indicate a problem"

Jules Albert III

Metal responds to changes in temperature by changing dimensions. Heat causes expansion, while cooling causes contraction. Roofing systems must account for that movement because exterior metal surfaces can experience substantial temperature changes between daytime and

nighttime conditions.

"Movement in a metal roofing system does not automatically indicate a problem," said [Jules Albert III](#), owner of Jaymar Construction LLC in Slidell, Louisiana. "Metal naturally expands and contracts as temperatures change. The important consideration is whether the roof and its components were designed and installed in a way that allows that movement to occur without placing unnecessary stress on seams, fasteners, flashing, and penetrations."

Metal Roof Temperatures Can Change Quickly

Outdoor air temperature is only one factor affecting the temperature of a metal roof.

Direct sunlight can heat roofing surfaces considerably during the day. Clouds, rain, evening temperatures, and overnight cooling can then reduce surface temperatures.



That cycle may occur repeatedly.

In South Louisiana, a roof can experience strong sunlight, high humidity, afternoon rain, and cooler nighttime conditions within the same day.

The metal responds each time the temperature changes.

A single expansion and contraction cycle may produce only small dimensional changes. Across long panels and repeated cycles, however, movement becomes an important design consideration.

Longer Panels Can Experience More Total Movement

Thermal movement becomes particularly relevant as panel length increases.

Each portion of a metal panel expands according to temperature change and the characteristics of the material. A longer panel therefore has more total potential dimensional change than a shorter section made from the same material under the same conditions.

Commercial buildings, warehouses, residences, and other structures with long roof slopes may contain panels extending considerable distances from ridge to eave.

The cumulative movement across those lengths must be accommodated by the roofing system.

Standing seam systems, fastening methods, clips, panel connections, and other components may be designed to permit controlled movement while maintaining attachment to the structure.

Fasteners Experience Repeated Stress

Fasteners connect roofing components to the underlying structure.

Depending on the roofing system, fasteners may be exposed or concealed.

When panels expand and contract repeatedly, forces can develop around attachment points. Systems designed to accommodate thermal movement may use components that allow panels to move while remaining secured.

Problems can develop when movement is restricted or when components deteriorate.

Repeated cycles can contribute to loosening, enlarged fastener openings, damaged washers, or other changes in certain roofing configurations.

Those changes can eventually create potential pathways for moisture.

Seams Must Accommodate Movement

Metal roof panels connect at seams, making those connections another important area when considering thermal movement.

As adjacent panels expand and contract, the seam system must maintain its function while accommodating dimensional changes.

Standing seam roofing systems often use concealed clips and mechanically connected seams that allow controlled panel movement.

Other metal roofing systems may use different attachment methods.

Regardless of configuration, thermal movement becomes part of the engineering and installation considerations.

Restricting movement does not stop expansion and contraction. Instead, the forces created by that movement may be transferred somewhere else in the roofing system.

Flashing and Penetrations Require Attention

Roofs rarely consist entirely of uninterrupted metal panels.

Vents, pipes, HVAC equipment, skylights, walls, chimneys, curbs, and other penetrations interrupt the roof surface.

Flashing is used around many of those areas to manage water and connect different building

components.

Those intersections can experience stress because different materials may expand and contract at different rates.

A metal panel may move differently from a masonry wall, pipe, curb, or other adjacent component.

Details around those transitions must account for movement while continuing to manage water.

“Roof penetrations and transitions are areas where several materials and components meet,” Albert said. “Thermal movement has to be considered at those locations because the roof surface may be moving while another part of the building remains relatively fixed.”

Sealants Are Not Structural Substitutes

Sealants are commonly used as part of metal roofing details, but sealant alone is not intended to compensate for every type of movement.

Repeated expansion and contraction can stretch, compress, or separate sealant if joints experience more movement than the material or detail can accommodate.

Age, sunlight, moisture, and environmental exposure can also affect sealant condition over time.

That is one reason roofing details typically combine mechanical connections, flashing design, panel configuration, and sealants rather than relying on a single material to manage every condition.

Thermal Movement Can Produce Sounds

Metal roofing systems sometimes produce popping, clicking, or creaking sounds as temperatures change.

Those sounds can occur when metal components expand, contract, or move against adjacent materials.

Noise does not automatically indicate structural damage.

However, changes in sound accompanied by visible movement, loose components, leaks, or damaged seams may provide additional information about conditions within the roofing system.

Building occupants may notice these sounds most often during rapid heating in the morning or cooling later in the day.

Weather Creates Repeated Cycles

The significance of thermal movement is not based on a single hot afternoon.

Roofing systems experience thousands of heating and cooling cycles throughout their service lives.

Seasonal changes create larger temperature differences, while ordinary day-to-night cycles create smaller but frequent changes.

Rain can rapidly cool a roof that has been heated by direct sunlight, producing another temperature transition.

Over time, those repeated cycles test connections, fasteners, seams, flashing, and other components.

Movement Is Part of Metal Roofing Design

Thermal expansion and contraction are normal physical properties of metal.

The objective of metal roof design is therefore not to eliminate movement.

The objective is to manage it.

Panel length, fastening methods, clips, seams, flashing, penetrations, sealants, roof geometry, and material selection all influence how a roofing system responds to temperature changes.

Metal roofs move because metal responds to heat and cold.

A properly considered roofing system recognizes that reality from the beginning.

The roof does not need to remain perfectly still.

The components need to move together in a controlled way.

Morgan Thomas
Rhino Digital, LLC
+1 504-875-5036
[email us here](#)

Visit us on social media:

[Facebook](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/945276673>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2026 Newsmatics Inc. All Right Reserved.