

# Diagonal Wrinkling (Racking) of Membrane Base Flashing



Diagonal wrinkles in membrane base flashing, commonly referred to as "racking," sometimes occur along the parapet walls. This is a condition that can affect the long-term performance of a roof membrane system. The wrinkles manifest above the cant strip and extend along the vertical surfaces of the wall area. Such wrinkles are more frequent at wall areas nearer to the corners of the building.

Racking is most often attributed to differential movement between the vertical plane of the wall, and the horizontal plane of the roof deck and related structure beneath the membrane. Movement of this type can result from the roof deck not being adequately supported by the wall itself or the deck not sharing a common support with the adjacent wall. This type of building construction may allow the wall and deck planes to move independently.

In addition, thermal loading on an exposed parapet wall and/or excessive cold temperatures (particularly on masonry walls) can create substantial differences in temperature between the wall and the building structure support and roof deck; the deck assembly and supports are most often beneath thermal insulation and in a conditioned air space. Significant thermal differences of this nature can result in expansion and contraction of the wall itself, or between structural elements of the building, especially at the wall/deck juncture. While a number of industry professionals have acknowledged this phenomenon, little published information or case studies on the subject exist.

The photos on this page illustrate racking with various roofing materials.



EPDM Flashing



SBS-Modified Bitumen Flashing



Thermo-Plastic Flashing



Coated BUR Flashing

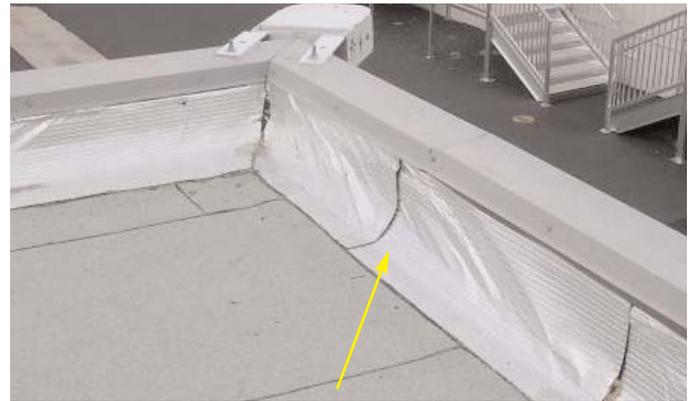


APP-Modified Bitumen Flashing

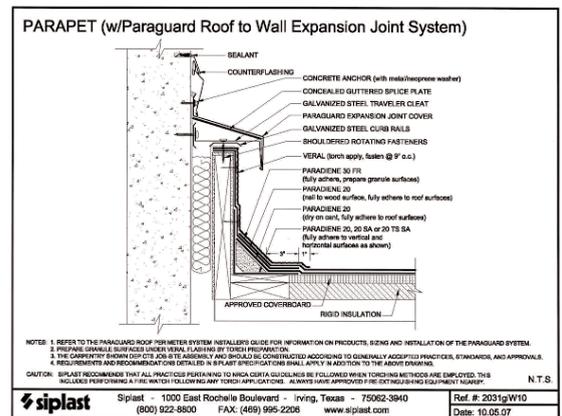
All roofing materials used for flashing walls adjoining the roof system can be affected by this type of differential building movement. Veral membrane flashing is no exception. The wrinkles can vary from small to large enough to pull the flashing membrane from the wall, open laps, and delaminate surfacings. Clearly, the roof/flashing membrane should be repaired when the materials are stressed to the point that the watertight integrity of the roof system could be compromised. Membrane damage caused by structural movement and movement of substrate components is typically not covered by membrane manufacturers' guarantees.

Siplast standard specifications and details for addressing such differential movement call for isolating the base flashing materials from the wall. This can be accomplished by incorporating a curb detail at the wall juncture following the Siplast Paraguard Roof-to-Wall Expansion Joint Detail (2030 EW12) or by installing a wood nailer and L-Metal component following the Siplast Parapet, Non-Wall Supported Deck (2030 MIW2) Detail. Both details are shown to the right.

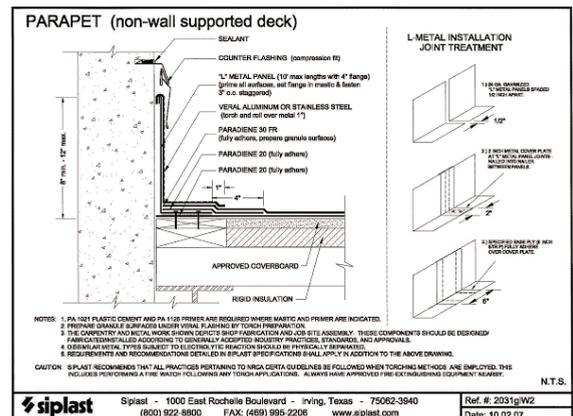
In designs where differential movement is anticipated by the roof designer or roofing contractor, incorporating detail conditions such as the two shown here are recommended. In cases where the existing flashing has become damaged as a result of substrate movement, each situation should be individually evaluated and treated with a remedial method tailored to address the specific job conditions. Contact the Siplast Technical Department for more specific information.



Veral Flashing



Paraguard Roof to Wall Expansion Joint (2030 EW12)



Parapet, Non-Wall Supported Deck (2030 MIW3)

**Siplast**

1000 E. Rochelle Blvd.,  
Irving, Texas 75062  
469-995-2200  
Facsimile: 469-995-2205

In Canada:

201 Bewicke Ave., Suite 210  
North Vancouver, BC, Canada V7M 3M7  
604-929-7687

Customer Service in North America:  
Toll Free 1-800-922-8800

www.siplast.com  
www.siplast.green.com



An Icopal Group Company

December 2008