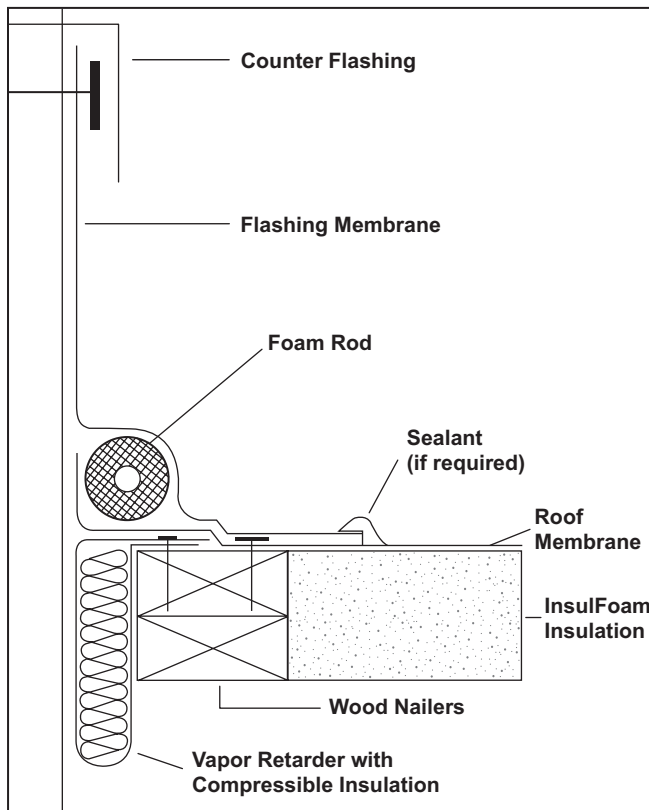


What is an Expansion Joint?

A roof expansion joint is a flexible closure used to minimize the effects of building movement or stress on a roof system. A roof designer will usually require roof expansion joints to coincide with a building's structural expansion joints or places which there could be significant movement. The following are examples of roof locations for which expansion joints should be considered:

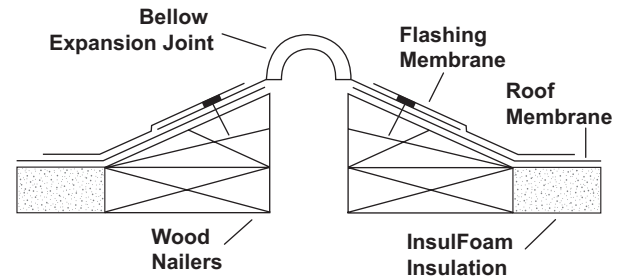
- Where structural expansion joints are provided within the building
- Changes in deck direction or deck types
- Building designs with unusual shapes or with wings – L, U, T or E configurations
- Areas in which differential movement of vertical walls and deck can occur
- Building additions next to an existing building
- Areas requiring isolation from excessive vibration
- Buildings that can experience significant movement due to thermal conditions (i.e. a freezer building), soil conditions, high winds or seismic activity

The following are expansion joint examples:

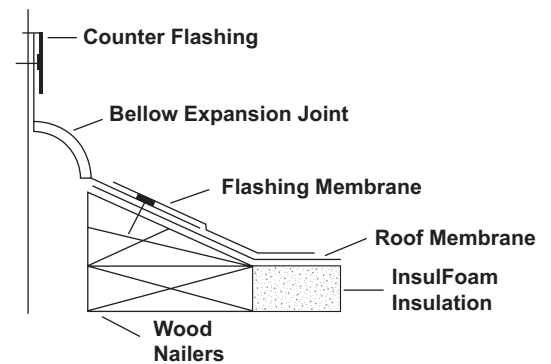


Typical Roof-to-Wall Expansion Joint used with Single Ply Systems

Roof-to-Roof



Roof-to-Wall



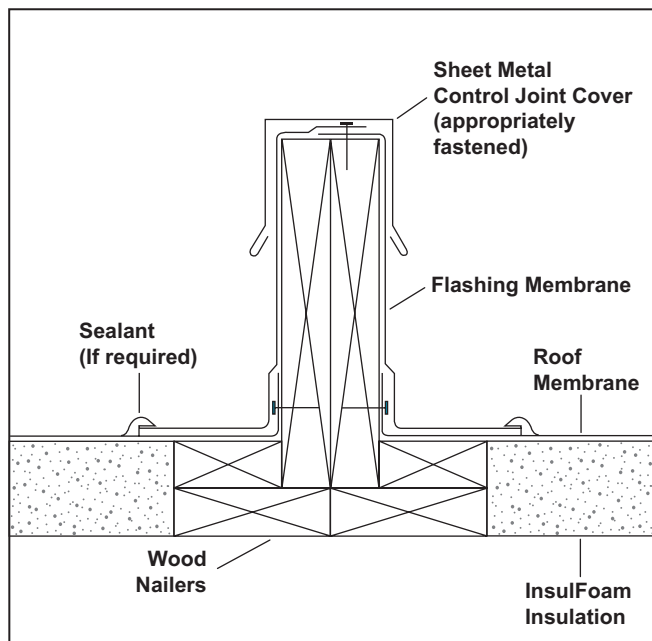
Typical Bellow Expansion Joints

What is a Control Joint?

A roof control joint's primary function is to separate roof areas or divide areas into smaller sections to facilitate maintenance or future roof replacement. Unlike an expansion joint, it is not intended to accommodate structural movement. Roof control joints are also commonly referred to as area dividers or relief joints. The following are examples of roof locations for which control joints should be considered:

- Roof systems located in areas that experience extended freeze-thaw cycles and do not have expansion joints
- Roof systems that will be re-roofed or replaced in phases
- Roof areas that have different roof systems in place

A common rule of thumb was to install a control joint at 150- to 200-foot intervals to break up large roof expanses. This practice was more critical with low-tensile organic and asbestos built-up roofing felts and may not be required with today's membrane systems. Consult with the membrane manufacturer for recommendations.



Typical Raised Control Joint

Code Considerations

When expansion or control joints are to be used in a roof system, the designer needs to consider their effect on any building codes or roof system approvals (UL and FM).

The use of insulated expansion or control joints should be considered to maintain the roof system's thermal requirements and to reduce the possibility of condensation.

Additional Considerations

In all cases, when roof designers are considering the use of expansion or control joints, the roof membrane manufacturer should be consulted for requirements and specific construction details.

A good reference for expansion joint and control joint construction details is the *NRCA Roofing and Waterproofing Manual*.