

SnapNrack Ultra Rail Thermal Expansion Recommendation

Overview

Tremendous development has gone into the design and testing of SnapNrack's Rail Splices. Some of the key features of the splices include the following:

- Splices are designed to replicate the strength of unspliced rail as closely as possible. Our standard engineering allows their use anywhere along the rail except where the rail is cantilevered.
- Splices come pre-assembled, so there are no loose nuts or bolts on the roof. They are designed to install very fast, just drop the rail into the splice with the bolts loose, position the splice, and tighten the bolts.
- The splice is designed to allow for axial movement of the rail if expansion and contraction loads get large. To allow for this axial movement all Ultra Rail splices should be installed with a minimum gap between rails of 1/8".

It is the responsibility of the installer to ensure that SnapNrack systems are built per the installation manual and meet all local building codes. It is also the responsibility of the installer to check the building for structural adequacy and make the final determination on array dimensions to account for thermal expansion and contraction of the system.



SnapNrack Ultra Rail components are all able to flex before component failures will occur, allowing the system to absorb some level of thermal expansion and contraction loads. Expansion and contraction loads are tied to local temperature swings, as well as the expansion and contraction of the building that the array is installed on. As a best practice, torque all hardware as described in the installation manual and technical drawings.

Expansion Gap Design

If the longest dimension of the array is greater than five (5) lengths of Ultra Rail, separate the array into sub arrays by adding a one inch (1") gap, and a bonding jumper.

Recommended Bonding Jumpers:

- Use two (2) Ground Lugs and a length of bare copper (minimum #8) to create a bonding jumper between the two subarrays. Bend the bare copper wire to create slack in the jumper so the array can flex as temperatures fluctuate.
- Use the SnapNrack approved DynoRaxx DynoBond as recommended by the following document:

[SnapNrack Ultra Rail with DynoRaxx DynoBond](#)

