

SnapNrack Splice Design – Thermal Expansion

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.



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 rail lengths to account for thermal expansion and contraction of the system. SnapNrack components are all able to slide on the rail before component failures will occur, allowing the system to absorb some level of expansion and contraction loads that other systems cannot absorb. 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, SnapNrack recommends installing splices with a minimum 1/8” gap between the rail ends, torque all hardware as described in the installation manual and technical drawings, and limit spliced rail lengths as described in the table below.



Temperature Range – Delta between historical max and min temperature (°F)	Maximum continuous spliced rail length
40-50°F Delta	100 ft
50-60°F Delta	85 ft
60-70°F Delta	75 ft
70-80°F Delta	65 ft
80-90°F Delta	55 ft
90-100°F Delta	50 ft
100-120°F Delta	40 ft
120-140°F Delta	30 ft