# Non-Metallic Expansion Joint

## 1. Advantages of Non-Metallic Expansion Joint

1. Large Movements: The non-metallic expansion joint offers multi-plane movement in a shorter face-to-face dimension. The ability to accommodate axial, lateral (in two planes), torsional and angular movements concurrently is an inherent capability of the non-metallic expansion joint designs.

2. Low Load: The spring rates generated by the movements or required to move the expansion joints are very low.

3. Corrosion Resistance: The non-metallic expansion joint industry's use of the wide variety of elastomers, fabrics and fluoroplastics allows the selection of the correct materials for each application. The superior corrosion resistance of various rubbers and fluoroplastics can extend the life of the expansion joint.

4. Sound and Vibration Elimination: The outstanding vibration and sound attenuation characteristics of elastomers help prevent premature system degradation.

5. High Temperature: With the use of special materials and designs, non-metallic expansion joints can withstand over 2000℉ operating temperatures.

6. Lower System Design Costs: Since non-metallic joints can accommodate movements concurrently, the resultant system cost can be reduced as follows:

(a) The total number of expansion joints may be reduced to take advantage of the large, multi-plane movements.

(b) The same movements can be derived in shorter face-to-face dimensions compared to metal expansion joints.

(c) The system geometry can be simplified.

(d) The use of costly toggles, hangers, support structures and guides can be extensively reduced.

(e) The engineering time required to design the system is significantly reduced.

7. Low Material Costs: The use of high alloy metals may not be required to meet the corrosion resistance required to meet the corrosion resistance required by the application. The variety of elastomers and fluoroplastics available will allow the selection of the precise and least expensive material.

8. Lower Shipping and installation costs: The non-metallic expansion joint can be factory pre-assembled and shipped to the job site for ease of installation. The expansion joints are relatively lightweight and can be hoisted into place with a minimum of field assembly required.

9. No Gaskets Required: Since most installations are either welded into place or use integral flanges, the use of gaskets may not be required (for those installations utilizing metal flanges bolted into place, gaskets will be required).

10. Lower Replacement Cost: Changing non-metallic expansion joints can be done with the minimum of downtime. The expansion joint can be provided either factory spliced or open ended for field splicing.