

# Frequently Asked Questions

**What is an Expansion Joint?** An expansion joint is an opening within a structure, at predetermined locations, designed to absorb *Movement* of the structure. *Movement* may be defined as follows:

1. **Thermal** - caused by temperature changes within the structure. Thermal movement is horizontal.
2. **Seismic** - caused by earthquake activity beneath the structure. Seismic movement may be horizontal, vertical or shear; or a combination of all three.
3. **Windload induced** - caused by high winds forcing the structure to sway. Windload induced movement is normally horizontal or shear.

**What are Movement Ratings?** A movement rating is an attempt to categorize the anticipated range of horizontal change in a joint opening. For example, a 4" (100mm) nominal joint which is expected to have a range of horizontal movement of plus 2" (50mm) or minus 2" (50mm), would be denoted as 4"±50% (100mm ±50%). Joints designed for thermal movement will typically have a movement rating in the ±10% to ±25% range. Joints designed for seismic movement will typically have a movement rating of ±50% to ±100%. Joints designed for windload movement will normally be rated as seismic.

## **What is Nominal Joint Width?**

Nominal joint width is the design width of an opening at median temperature. In some cases, the joint opening is different at the time of installation of an architectural joint system (AJS). This may simply be due to thermal conditions. In this event, the installation of AJS is not normally impeded.

**What is an Architectural Joint System (AJS)?** An AJS is simply a transition across an expansion joint opening. In other words it is a cover, or an insert. Covers may be simple cover plates or engineered systems and inserts may be compression seals. Many systems, however, are engineered to fulfill a variety of additional functions. Some of these functions include:

1. Fit a predetermined opening size.
2. Absorb building movement, thermal or seismic.
3. Be compatible with various surface finishes.
4. Support a given load. (floor condition only)

**How Do I select an Architectural Joint System (AJS)?** As with most architectural products, AJS should be selected on the basis of Form and Function. First, determine the function or condition. For example, will the system be installed on the floor, wall, ceiling or roof? If it is a floor system, what loading will it be subjected to? Is it to be an interior or an exterior system? Secondly, determine the form, or appearance of the desired product. Should the system match a hard tile floor? Should it be concealed, or is an exposed cover plate acceptable? A simple joint selection chart is available and should assist in guiding you through the joint selection process. JointMaster architectural joint systems provide the most comprehensive and advanced range of systems available in the world today. For further assistance, visit our electronic selection tool, the JointMaster Wizard at [www.inprocorp.com](http://www.inprocorp.com).

**Is there any Standard Test Method Applicable to AJS?** ASTM-E1399-97 Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems. For information on the scope of this Standard, please contact JointMaster.

**Is Loading Important?** Yes. For any floor system it is important to know how much load the AJS will be subjected to. Any load in excess of the system design load may cause the system to fail. Failure in an AJS may result in danger to pedestrians and damage to vehicles and property. The joint edges may break down and the abutting finishes may be destroyed, creating the need for an expensive and sometimes difficult repair process. Load ratings in US Ton and kN (Kilonewtons) are included in the charts to assist you in your selection process. A description of our load engineering is also provided.

## **Where is a Fire Barrier Used and Why?**

1. In all floor and wall joints that occur in fire rated locations. A fire barrier is often located beneath the AJS.
2. To prevent fire and smoke from penetrating an expansion joint opening for the specified rating period, e.g. 2 hours.
3. In some cases, to prevent temperature on the cold side of an expansion joint opening from rising above a predetermined rate for the specified rating period, e.g. 2 hours. The "cold side" of an expansion joint opening refers to the area within a structure adjacent to, or opposite the area where a fire or smoke source is located.
4. There are 2 main types of fire barriers used in expansion joint openings. They are:
  - a. Mineral wool and sealant.
  - b. Blanket systems.

## **What Fire Rating Standards should AJS conform to?**

UL-2079 - Standard for Tests for Fire Resistance of Building Joint Systems.

IPC.809/REV.1