Introduction to Expansion Joints

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Agenda

Expansion Joint and Movement Basics

Expansion Joint Systems

Identifying Expansion Joint Locations

Joint Sizing as it Relates to Temperature
Expansion Joint Basics
Why are they needed?

As one of the most overlooked items on a building project, Expansion Joints allow structures to move freely without disruption to pedestrian and vehicular traffic while protecting the surrounding substrates from damage.
What Causes a Structure to Move?

- Wind
- Soil Settlement
- Seismic Activity
- Temperature
- Weight Displacement
- Creep and Shrinkage
Types of Movement

- Expansion
- Contraction
- Vertical Displacement
- Lateral Shear
How They Move
Seismic Movements

Base Isolation Safeguards People and Building Contents

Isolated Building
Seismic Response
Systems to accommodate movement, provide weather proofing and aesthetics to your architectural building project.

Vertical Joint Systems

Joint Seals  Wall Plates
Foam Seals  Seismic Systems

Can you spot the expansion joint in this picture?
Creating the Specification

Manufacturers should have Expansion Joint details and CSI written specifications on hand. Items to consider when creating a project spec include clearly marked joint paths, transition locations, details matching the spec, the tie into other surrounding materials, and whether a fire barrier should be required.
Expansion Joint Specifications

What to Consider:

- Movement
- Size of the opening
- Location – Path you want it to Travel
- Single Source Manufacturing
- Traffic, Loading, Egress and ADA
- Fire Rating
- Aesthetics
- Installation
- Maintenance
Traffic, Loading, Egress and the Americans with Disabilities Act (ADA).
Proper Joint Sizing Relating to Temperature
Cold Weather
Warm Weather
# Temperature Adjustment Table

**Always Recommended on Contract Drawings**

*Mean Temperature*

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*Total Temperature Range*
Proper Expansion Joint Selection

- Determine the size, location and number of joints for each level of the structure
- Select method of sealing the structural opening
- Volume, type and speed of vehicular traffic
- Select system based on service need
  - ADA compliance (near walkways / stair towers)
  - Fire ratings
  - Seismic and thermal movement criteria
  - Snow plow protection (top level)
  - Waterproofing
As Architects and Engineers push the bounds of unique design, Seismic Moat Covers have become very important. Design of moats during overall project design is crucial.
Expansion joints ensure the sustainability of a structure and should not be an afterthought

Top-functioning expansion joints can be aesthetically pleasing – do not sacrifice performance!

A good manufacturing partner will work with you from initial design and will follow through with contractor to post-inspection
Questions?

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