Quality Technical Bulletin

Building Expansion Joint—Descriptions

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Specialized Expansion Joint

Building Expansion Joints (EJ) are a complex component in the building. They typically are fire rated, weather-proof, and/or an air barrier. They must also connect to other EJ's of different materials and manufacturers with questionable compatibility. There are many different types of EJ's that we must consider and understand. The design, connection to other materials, and purpose are just a few of the items we must consider.

The following Technical Bulletin will describe **Waterproofing** expansion joints and considerations to be taken when coordinating and installing these types of joints. Set up a Pre-Installation Meeting with the Quality Department Early – it might take several meetings to complete.

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Joints are typically managed with different materials that need to connect to other materials.
Different types of systems that need to manage these joints are:
Weather, Air Barrier, Vapor Retarder, Waterproofing, Roofing, Fire, smoke, etc.
We will review the "Waterproofing" connection with this Bulletin

Expansion Joint Gutter with Drains

- **Typical waterproofing expansion joints are horizontal and vertical and are in planters, plazas, drives, sidewalks, etc.**
  - Determine the expected movement and/or deflection and ensure that the joint is appropriately sized for the movement based on the material's ability to move plus any material in the joint.
  - The horizontal expansion joint might need to connect to the air barrier vertical expansion joint – coordinate connection materials and movement. This is one of the most difficult details to coordinate.
    - Determine who will be making the connection
    - Determine the location of the connection between waterproofing and AVB.
    - Determine what materials will be used to connect the two different systems. We will likely need a transition membrane or manufactured component, as the materials used for waterproofing & AVB typically are not compatible or able to be properly adhered.
    - Determine who will be obtaining the compatibility verification between materials (waterproofing and AVB)

Cut-in Joint at Curb to Allow for Water Movement

- Determine if we are connecting to an existing building expansion joint and how this will be accomplished. What about warranty concerns as well and material compatibility and adhesion.
- Determine if the expansion joint movement is only horizontal or if there is vertical movement expected.
- Review if the EJ is to be fire-rated; if so, there will need to be a fire-rated assembly joint behind the waterproofing expansion joint. Make sure that the waterproofing joint does not interfere with the fire-rated joint. Also need to review and confirm the connecting joints for the waterproofing and AVB for compatibility, adhesion, and proper fire-rated materials.
- Confirm the sequence of installation and materials needed for proper installation for all the building expansion joints.
- Review of the building expansion joint has fastener requirements or if a supplemental material is needed to create the water-proofing. Confirm edge distance for the fastener and if the material being attached too is proper and structural
- Make sure we get connection, transition, and joint drawings from the expansion joint manufacturer to review and confirm
- Do we need an expansion joint at the intersection of a building "T", "L", or "U" configuration? Special shape?
- Review detail of expansion joint – we typically do not want to rely on the waterproofing sheet material alone to create the movement (the force of the movement might exceed the bond strength of the air barrier material to the substrate).
- Expansion joints will create a water dam that must be reviewed. ***Is there a drain or outlet for the water on both sides of the waterproofing EJ***? This is critical for a long term solution.
- Sometimes the expansion joint needs to be flat because of water ponding issues. There are special systems that allow for a flat expansion joint. Please contact the Quality Department early to discuss possible materials.
- Sometimes a primary expansion joint is installed below the waterproofing joint which might be of an incompatible material such as silicone. We need to make sure the incompatible material is limited and properly separated from the waterproofing. The separation must be properly designed to allow for movement and must review drain locations.
- A sidewalk or similar joint might have a waterproofing joint AND a topical expansion joint. The two type of joints will likely not connect or be of same material or design. The topical expansion joint might or might not be waterproof. The two materials have different expectations.
- Gutters with or without drains might be needed at joint for a secondary level of water management and should be reviewed and discussed early. Gutters should be 304 or 316 stainless steel (depending on the environment) or similar corrosion resistance.
- Sometimes we have planter walls or similar on the waterproofing plane which would hold water in the location. It might be necessary to add outlets to the walls to allow for a secondary way for water to escape.
- Post Tensioned decks might have sloping issues and the location of the expansion joints might be at a low point in the actual installation. This needs to be reviewed and discussed. There might be a need to level the concrete prior to the waterproofing to correct this condition.

Incorrect Waterproofing Expansion Joint—This detail will not allow for proper building movement without tearing the waterproofing. Review detailed with the Quality Team as soon as possible

A Specialty Flat Expansion Joint that is the preferred detailing to allow for water flow and movement.

Always have an Expansion Joint Pre-Installation Meeting with the Manufacturer. ***It is not uncommon to have multiple pre-installation meetings for Expansion Joints.***
Include: Quality Department, Architect, EJ Manufacturer(s), EJ installer, Adjacent Material trades,

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