

Maintenance Advisory

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MDOT

Division of Operations

Maintenance

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Snowplows vs. Bridge Expansion Joints

An important part of a bridge is the expansion joint system. The expansion joint enables the bridge to expand and contract with changes in weather and loads while preventing water and contaminants from damaging structural components under the bridge.

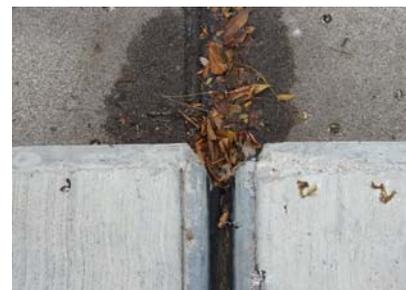
In certain instances these systems, which consist of two steel rails and a rubber gland, are unable to be recessed into the concrete properly to avoid damage. In some cases the up-turns (the vertical section on the edge of sidewalk or curb) have a protruding corner that is vulnerable to snowplow blades. When struck with a snowplow blade the force may bend rails, break welds and/or spall the adjacent concrete. This damage will result in a joint failure at that location and allow water to leak onto the structural components under the joint, resulting in shorter life expectancy of the bridge or costly repairs.

This damage can be prevented by both properly recessing the steel rails and/or cutting the corner of the up-turns to match the adjacent concrete and by maintaining adequate clearance between the plow blades and the curbs, sidewalks or barrier walls.

While it is fully understood that snow removal operations occur in the worst of conditions, it is important that plow operators do their best not to damage these critical bridge systems. This will help us in our goal of maximizing the life of our bridges.



Damaged expansion joint



Properly recessed expansion joint