



RECOMMENDED MAINTENANCE & INSPECTION GUIDELINE EXTERIOR EXPANSION JOINT SYSTEMS

The following Exterior Expansion Joint Maintenance & Inspection Guideline is recommended to the owner/operator as a minimum standard. It should be part of a comprehensive facility maintenance program and should be followed in conjunction with the National Parking Association Parking Garage Maintenance Manual.

1.0 PREVENTATIVE MAINTENANCE

Preventative Maintenance involves regular inspection, repair, and housekeeping to keep the structure functional to its intended users. It is recommended that the expansion joints and surrounding area be inspected quarterly for general functionality, damage and moisture leakage.

1.1 Concrete Deck

- _____ Inspect for deck cracks?
- _____ Do they leak?
- _____ Is the surface sound or is there surface scaling present?
- _____ Are there low spots where water ponding occurs?
- _____ Are drains functioning?
- _____ When were they last cleaned out?

Take necessary remedial action to correct the aforementioned defects.

1.2 Expansion Joint

- _____ Are there cracks in the elastomeric concrete header system?
- _____ Are there tears or separation to the continuous membrane seal?
- _____ Are there any leaks or cohesive failure of the expansion joint system?
- _____ Are there loose cover plates, hardware or components?
- _____ Is there evidence of underlying substrate failure?
- _____ Are cracks present in the concrete?
- _____ Are there major signs spalling, deformation or exposed embedment steel?

Take necessary remedial action to correct the aforementioned defects by following section 3.0.

2.0 OPERATIONAL MAINTENANCE

2.1 National Parking Association's Parking Facility Maintenance Manual

The National Parking Association's Parking Facility Maintenance Manual defines and outlines regular maintenance requirements the owner should perform on an annual basis.

2.2 Removal of Dirt and Debris

It is recommended the exterior expansion joint should be swept or vacuumed clean of any dirt and debris that may inhibit its movement. Sweeping should be done on a monthly basis. Special attention should be paid to keeping dirt and debris out of drain basins, expansion joints and other openings.

2.3 Wash Down

As a minimum, a washdown of the traffic deck and expansion joint system with a low-pressure water hose should be conducted on a quarterly basis. Salt and deicing agents used over the winter months in freezing climates should be removed each spring by flushing the surface with water. A second wash down in the fall is also recommended to remove surface debris and contaminants.

2.4 Snow Removal and Ice Control

In cold climates it may be necessary to remove snow and ice to maintain a safe, functional expansion joint system. As a rule, snowplow vehicle axle weights should be kept below 4000 pounds to avoid over-stressing.

A **heavy rubber blade edge** must be fitted to the bottom of the plow's steel edge, with plow shoes or casters adjusted to keep the steel plow edge at least **(1/2) one half inch above the floor** and from coming in direct contact with the expansion joint system. Equipment such as skid-steer (Bobcat), wheeled snow blowers, hard wheeled dollies, ice picks, or any heavy equipment or vehicles are prohibited from coming in contact with the exterior expansion joint system. Blades should also not impact vertical offsets between adjacent deck surfaces. Plows must be equipped with well-maintained rubber blades to minimize impact damage.

Equipment **driving speed** should be **reduced** at changes in floor slopes, such as the ends of ramps, washes (i.e., raised areas of the deck surface), at the ends of double tees, and at handicapped ramps. Impact forces caused by pushing equipment or snow into walls or spandrels should be avoided. Additionally, impact forces applied to deck surfaces caused by dumping snow into storage piles should be avoided.

2.5 Annual Maintenance Requirements

The owner shall be responsible to perform regular maintenance on an annual basis as outlined by the National Parking Association's Parking Facility Maintenance Manual. The owner may utilize a Certified Contractor or perform the maintenance for an agreed upon fee. If the owner chooses to use another crew, then the owner shall contact the Certified Contractor who installed the expansion joint system to inspect and validate performed maintenance to insure all warranties remain in effect.

2.6 Annual Inspection

The owner shall notify the Certified Contractor to conduct an annual inspection of the System and the surrounding concrete deck and substrate. The Certified Contractor will notify the owner of any concrete repairs that are necessary that must be rectified within 90 days of the notice. Failure to comply with the notification may render any performance warranty null and void. Any repairs to the Expansion Joint System will be governed by the terms, conditions, limitations and definitions contained in the warranty.

3.0 NOTIFICATION

In the event of any problems or damage associated with the exterior expansion joint system, promptly notify the MM Systems Certified Contractor and MM Systems Corporation in writing.

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