



Surface Parking Lot and Parking Structure Maintenance: Spring “Cleaning”

Authored By: **John S. Morgan, III**, Assistant Project Manager and **Daniel E. Moser, S.E., P.E.**, Restoration Department Head

Spring has finally arrived and now would be a great time to review maintenance needs for your surface parking lots and parking structures. This article focuses on general maintenance considerations and inspections that can be performed by the management or maintenance staff.

Surface Parking Lots

After many months of freezing conditions, snow, and snow removal operations, there are likely damages to the lot. Snow plow blades can scrape away parking stripes as well as some of the seal coating that has been previously applied. Additional damages can include cracking and potholes caused by freeze/thaw cycles. Blocked or clogged drains cause water ponding and because asphalt is porous, water seeps into the pavement and down to the sub grade. As water freezes and expands, the pavement heaves and cracks develop. This condition is exhibited as closely spaced cracking pattern is also known as “alligator cracking.” Potholes also caused by freeze/thaw damages are another problem we are faced with after winter.

Late spring/early summer is a perfect time to implement repairs including, patching of potholes and sealing of cracks to reduce water infiltration and increase the lifespan of your surface parking lot. Additionally, timely repair of these items will minimize the risk of trip and fall accidents and vehicle damage claims. Late spring/early summer is also a perfect time to schedule seal coating and re-striping of your surface parking lot. Fresh striping on a nice black surface can make the surface parking lot more attractive and inviting for users. Additionally, a quick check of lighting and signage should be performed, and you're ready for another year.





Parking Structures

Concrete parking structures (cast-in-place or precast) should also be maintained to minimize expensive structural repairs. A good maintenance program includes a visual walk-through to identify damaged concrete, damaged waterproofing systems, or vehicular impact damages that would require repairs.

The walk-through should identify any cracking, loose concrete, or concrete that has fallen off any beams, columns, or ceilings. These conditions can be an indication of corrosion in the structure. Another item to look for is any leaking joints or damaged sealants. Precast parking structures typically have thousands of feet of joint sealants that should be reviewed for any signs of damage or leakage. A good way to detect damaged or leaking joint sealants is to look at the underside of every floor for evidence of rust or water staining that has taken place since the previous year. This exercise is best performed when the surfaces of the deck are wet.

Expansion joints should be closely examined for damage or deterioration. The function of an expansion joint is to allow the structure to move at the joint while the joint remains watertight. Expansion joint seals are highly susceptible to damage from snow plow blades. Look for rips, tears, or any damage to the nosing of the expansion joint seal which can result in leaks. If your parking structure has a traffic topping (waterproofing membrane) on any of the floors, you should look for areas of the coating that have been damaged by snow plow blades or erosion in the turn lanes. It is important to keep the waterproofing system (coatings, sealants, expansion joints) intact so that it can keep water out of the concrete.

While walking through the parking structure, also look for any vehicle impact damages to walls, columns, or barrier cables. If you have a cable barrier restraint system, also check for broken or damaged cables. Any broken or damaged cables should be repaired. Any impact damages should be reviewed by a restoration consultant.

Additionally, a good low-pressure power wash of all of the floors should be performed after the winter season. Getting rid of the de-icing salts (which may contain chlorides) that have been applied, or may have been brought in by cars throughout the winter is a good way to reduce potential deterioration of the parking structure. Chlorides cause the reinforcing steel within the concrete to rust (corrode) which results in concrete spalling and deterioration. Therefore keeping chlorides out of the concrete, and away from the reinforcing steel, will reduce repair and maintenance costs and increase the long-term performance of the parking structure. Plumbing systems should also be flushed and floor drain grates cleaned of any debris to allow good drainage.

Once you have completed your walk-through of the floors, you should walk every stair/elevator towers. Items to look for should include doors that don't close tightly or are difficult to operate, loose stair nosings, loose handrails, concrete damage, and any signs of water leakage. The following checklists summarize the most frequent items which require maintenance attention.



If you encounter any items that require significant repairs or expenditures, you should contact an experienced restoration consultant. A qualified restoration consultant can properly identify the root cause of issues and produce drawings and specifications for repair. By having good repair documents prepared by a restoration consultant, apples to apples comparison in pricing from contractors can be obtained. Lastly, restoration consultants can represent the owner/management company during construction to check for general compliance with the contract documents.

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Checklist for Parking Lots

- **General**
 - o Clean Debris at Drains
 - o Seal Cracks
 - o Asphalt Repairs
 - o Seal Coating
 - o Re-Striping
 - o Signage and Lighting

Checklist for Parking Structures

- **General**
 - o Pressure Wash Floors
 - o Check for deterioration
- **Stair/Elevator Towers**
 - o Inspect for proper elevator operation
- **Painting**
 - o Look for peeling paint
 - o Look for rust staining
- **Plumbing System**
 - o Check floor drains (power rod if clogged)
- **Safety**
 - o Handrails/Guardrails
 - o Exit Lights
 - o Emergency Lights
 - o Eliminate Tripping Hazards
- **Structural System**
 - o Floor Deterioration
 - o Beams & Columns
 - o Tee-Tee Joints
 - o Expansion Joints
 - o Sealants
 - o Masonry
 - o Check for Water Leakage
 - o Inspect Concrete for Cracks
 - o Make Repairs (see a restoration consultant)
 - o Replace Floor Coating (see a restoration consultant)
- **Waterproofing**
 - o inspect floor membrane