
Commercial Property Pothole Repair and Asphalt Patching Standard Operating Procedure

1.0 Maintenance Objective & Frequency

The objective of this procedure is to restore the structural integrity and surface smoothness of asphalt pavement by repairing potholes and patching distressed areas. Proper execution prevents water infiltration, further pavement deterioration, trip hazards, and vehicle damage. This PM is performed on an as-needed basis, typically after seasonal freeze-thaw cycles or when potholes exceed 2 inches in depth or 12 inches in diameter.

2.0 Lockout/Tagout (LOTO) & Safety

- **Traffic Control:** Set up cones, barricades, and warning signs per local traffic control regulations to isolate the work zone.
- **Personal Protective Equipment (PPE):** Wear high-visibility vest, steel-toed boots, safety glasses, cut-resistant gloves, and hearing protection when using power tools.
- **Hot Material Handling:** When using hot mix asphalt, wear heat-resistant gloves and long sleeves to prevent burns.
- **Equipment Isolation:** Ensure all power equipment (saws, compactors) is disconnected from power sources before performing any maintenance or blade changes.

3.0 Required Tools, Parts & Lubricants

- Cold patch asphalt (e.g., UPM® High Performance Cold Mix) or hot mix asphalt (if using a mobile asphalt plant)
- Asphalt tack coat (emulsified asphalt, e.g., SS-1 or CSS-1)
- Square-point shovel and heavy-duty rake
- Plate compactor (e.g., Wacker Neuson VP1550) or hand tamper
- Asphalt saw or jackhammer with spade bit for edge cutting
- Wire brush or compressed air blower for debris removal
- Measuring tape and straightedge (4 ft level)
- Personal protective equipment (PPE) as listed in Section 2.0
- Traffic control signage and cones
- Dust mask or respirator (if cutting dry asphalt)

4.0 Step-by-Step Maintenance Procedure

1. Establish a safe work zone by placing cones and signs at least 50 feet before and after the repair area. Ensure all crew members are wearing required PPE.
2. Using a measuring tape, assess the pothole dimensions. Mark a rectangular or square perimeter around the pothole extending at least 6 inches beyond the distressed area to ensure sound edges.

3. Cut the marked perimeter using an asphalt saw or jackhammer to a depth of at least 2 inches or until sound asphalt is reached. Ensure vertical, clean edges for proper bonding.
4. Remove all loose debris, broken asphalt, and dust from the excavation using a shovel and wire brush. Use compressed air or a blower to clean the bottom and sides thoroughly.
5. Apply a thin, even coat of tack coat (emulsified asphalt) to the bottom and vertical walls of the excavation using a sprayer or brush. Allow the tack coat to break (turn from brown to black) per manufacturer instructions, typically 5-15 minutes.
6. Fill the excavation with cold patch or hot mix asphalt in layers not exceeding 2 inches. For each layer, spread the material evenly with a rake and compact thoroughly using a plate compactor. Overfill by approximately 1/2 inch to account for compaction.
7. After the final layer, compact the surface using a plate compactor. Make multiple passes in overlapping patterns until the patch is flush with the surrounding pavement and shows no visible movement under the compactor.
8. Check the finished patch with a 4 ft straightedge. The surface should not deviate more than 1/4 inch from the adjacent pavement. If high spots exist, remove excess material and re-compact. If low spots, add more material and re-compact.
9. Apply a thin layer of sand or fine aggregate over the patch to prevent tracking if using tack coat. Remove all tools, debris, and traffic control devices once the patch is stable and safe for traffic.

5.0 Verification & Return to Service

1. Inspect the patch for any loose edges, cracks, or unevenness. Ensure the patch is flush with the surrounding pavement and has a uniform appearance.
2. Allow the patch to cure per material specifications (typically 24 hours for cold patch, 1-2 hours for hot mix) before opening to traffic. If immediate traffic is unavoidable, reduce speed limits and monitor patch integrity.
3. Document the repair in ServiceGrid: record location, date, material used, quantity, and any observations (e.g., water pooling, edge raveling). Attach photos of the completed patch.
4. Schedule a follow-up inspection within 30 days to verify patch performance. If deterioration is observed, re-evaluate the repair method and consider full-depth patching or milling.

Regulatory Disclaimer: This document is a generic maintenance template provided for educational and informational purposes only. It does not constitute professional engineering or reliability advice. The end-user assumes all liability for validating all step sequences, torque specs, and LOTO protocols against specific machinery OEM manuals before deployment to a live production floor.