

# Asphalt Patching Methods Best Practices Manual

## SELECTION OF A PATCH METHOD

### Virgin HMA

- Use virgin hot-mix asphalt (HMA) during the regular season. This option can be used in any situation: mill-and-fill or established potholes.
- HMA works for any depth repair. However, when the patch depth is greater than 4 inches, consider using multiple lifts and compacting after each lift is placed.

### Mastic

- Mastic, although expensive, is the best option for low-depth, narrow potholes (less than 3 inches wide and less than 2 inches deep) along longitudinal joints.
- As with any maintenance operation, quality control is paramount. Use the proper amount of patching material for better compaction and longer-lasting patches.
- Ensure the patch area is dry before placing the material. Moisture doesn't seem to infiltrate mastic patches that are dry before repair.

### Cold-mix asphalt patch

- Use cold-mix asphalt only for temporary fixes in small- to medium-sized potholes. The material is not designed to be structurally sound for depths greater than 2 inches. If a cold-mix patch can't be avoided, place the patch in two lifts, compacting the material after each lift is placed.

### Advanced/proprietary materials

- Several advanced rapid set materials are available for use at sites that require short reopening times. It may not be necessary to compact these materials since they are mostly cementitious.

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## POTHOLE PREPARATION

### Minimum required cleaning method

- **Sweeping:** Use a steel brush to sweep out a pothole, removing dirt, debris and any standing water. Note: Sweeping removes large particles from a pothole, but may not remove fine materials.

### Recommended cleaning method

- **Compressed air:** Use a hose attached to an air compressor to remove dirt, debris and any standing water from a pothole. This method removes both fine and large particles, and helps to dry the pothole surface.
- Eye protection is required when cleaning with compressed air.

### Milling operations

- Use standard methods for milling both longitudinal joint distress and localized potholes. Before placing the patching material, follow the guidelines for cleaning a patch area.

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## PLACEMENT AND COMPACTION

### HMA

- Completely cover the patch area with an approved tack material.
- If at all possible, don't allow the HMA delivery vehicle to drive directly in the milled area. Debris from the vehicle's tires will cover the tack material and make it non-functional.
- Use vibratory steel rollers to compact the material. To ensure patch longevity, compact the area thoroughly.

### Mastic

- Use standard mastic operations.
- The material is moderately self-leveling and doesn't require compaction.

### Cold-mix asphalt

- Use shovels to manually place patching material.
- For deeper patches, use multiple lifts, compacting the material after each lift.

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## MOISTURE ABATEMENT

### **HMA**

- Once the area is dry, apply a liberal amount of sealant or tack to the area to keep moisture from infiltrating the patch contact point.

### **Mastic**

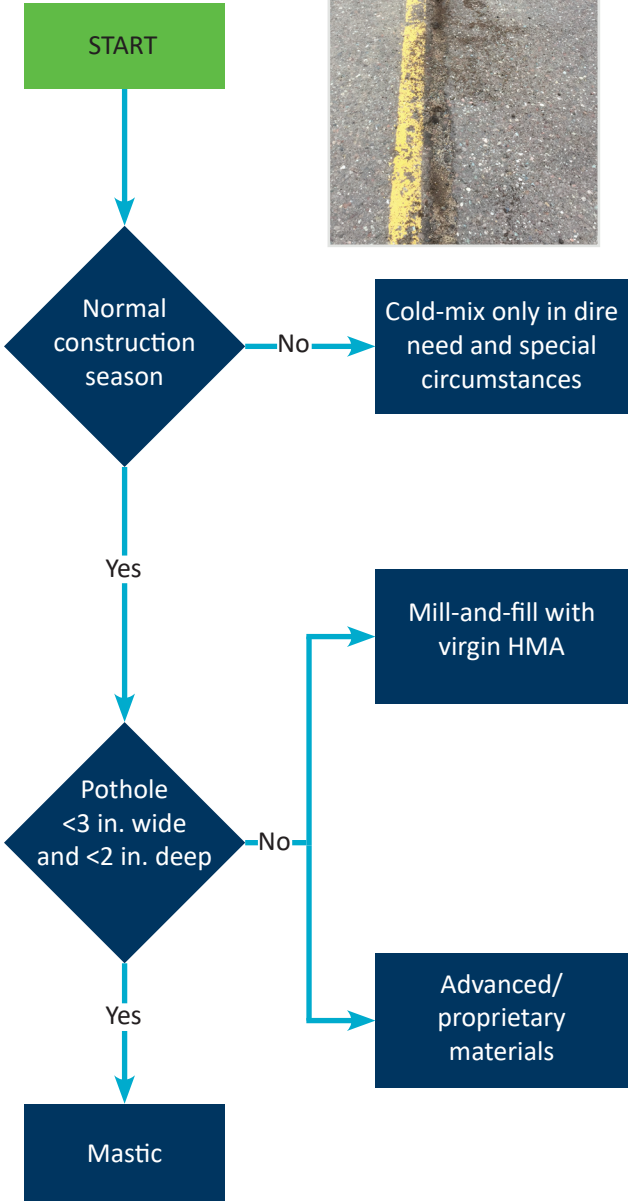
- No sealant is required. Mastic itself has a sealing quality that is moisture-resistant.

### **Cold-mix asphalt**

- No sealant is required. This patch material is generally used during the off-season, when there is normally less moisture. Since using this material is a temporary solution, moisture abatement is less of a concern.

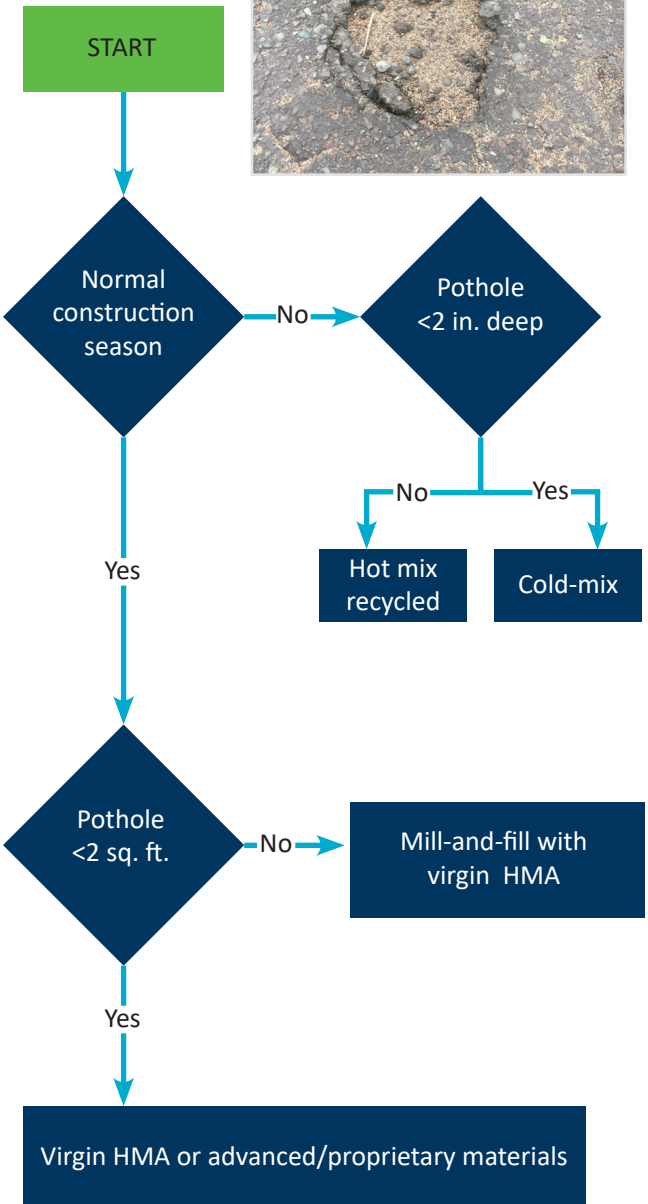
# Asphalt Patching Methods Decision Tree

## POTHOLE AT LONGITUDINAL JOINTS



# Asphalt Patching Methods Decision Tree

## LOCALIZED POTHOLE



# Asphalt Patching Methods Seasonal Guidance

## NORMAL CONSTRUCTION SEASON

### Pothole at Longitudinal Joints

Less than  
3 in. wide and 2  
in. deep

Mastic

More than 3  
in. wide and  
2 in. deep

Mill-and-fill  
with virgin  
HMA or  
advanced/  
proprietary  
materials

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### Localized Pothole

Less than  
2 sq. ft.

Virgin HMA  
or advanced/  
proprietary  
materials

More than  
2 sq. ft.

Mill-and-fill  
with virgin  
HMA

# Asphalt Patching Methods Seasonal Guidance

## OUT-OF-SEASON CONSTRUCTION

### Pothole at Longitudinal Joints

Cold-mix— only in dire need

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### Localized Pothole

Less than  
2 in. deep

Cold-mix

More than  
2 in. deep

Hot mix  
recycled