

GUIDANCE FOR BITUMINOUS CONCRETE PATCHING ITEMS

Please be advised that special provision items related to bituminous concrete patching have been revised. They have been updated to better reflect the nature of the work intended for each item. Below is a description of each special provision, which includes the previous item name and number, the new item name and number, and a brief explanation of the intended use. Always refer to the latest special provision documents for the full scope of work. These can be found at the link included below:

[Pavement Design Unit Specs](#) (CTDOT Pavement Design – SharePoint site)
DOT Pavement Design\Documents\Shared\Special Provisions

A link to the FHWA Distress Identification Manual is also provided below for reference:
[Distress Identification Manual for the Long-Term Pavement Performance Program \(2014\)](#)

Please contact the Pavement Design Unit at 860-594-3287 if you have any questions.

0406121A – Hot Pour Mastic – Surface Patching

- Previous item name and number:
 - 0406123A – Hot Pour Mastic – Surface Patching on PCC (SF)
- New item name and number:
 - 0406121A – Hot Pour Mastic – Surface Patching (SY)
- Intended use:

The “Hot Pour Mastic – Surface Patching” item should be used as a permanent repair item for maintaining traffic on rigid (concrete), flexible (bituminous concrete or asphalt), and composite (concrete base overlaid with bituminous concrete) pavement structures. If the roadway is to be milled and paved, then the work shall be performed after milling and before paving.

This item is intended to be used to repair areas of the pavement that are broken, damaged, distorted, or delaminated. Examples of such areas include deteriorated or raveled longitudinal and transverse joints, single cracks (greater than 1.5 inches in width), potholes, spalls, and corner breaks.

These areas should be corrected by hammering/chipping and removing any loose material and debris, followed by applying mastic material to any open cracks, voids, or other irregular surfaces at the bottom of the repair area. The remainder of the repair area shall be filled with mastic to match the elevation of the surrounding pavement.

0406122A – Hot Pour Mastic – Partial Depth Patching

- Previous item name and number:
 - N/A
- New item name and number:
 - 0406122A – Hot Pour Mastic – Partial Depth Patching (SY)
- Intended use:

The “Hot Pour Mastic – Partial Depth Patching” item should be used as a permanent repair item for areas of partial depth deterioration on rigid (concrete), flexible (bituminous concrete or asphalt), and composite (concrete base overlaid with bituminous concrete) pavement structures. If the roadway is to be milled and paved, then the work shall be performed after milling and before paving.

This item is intended to be used to repair areas with minor functional distresses which are not expected to extend through the full depth of the pavement. Examples of such areas include deteriorated or raveled longitudinal and transverse cracks or joints, potholes, spalls, and corner breaks. The distinction between the two mastic items is that “Hot Pour Mastic – Partial Depth Patching” includes milling, whereas “Hot Pout Mastic – Surface Patching” does not.

These areas should be corrected by milling to a depth between 1 to 2 inches within the area to be patched, cleaning out the loose material and debris, and applying mastic material to any open cracks, voids, or other irregular surfaces at the bottom of the milled repair area. Once the irregularities have been made level with the milled surface, the remainder of the repair area shall be

filled with mastic to match the elevation of the surrounding pavement in 1-inch lifts.

0406124A – Bituminous Concrete Surface Patching

- Previous item name and number:
 - 0601192A – Surface Patch (SF)
- New item name and number:
 - 0406124A – Bituminous Concrete Surface Patching (SY)
- Intended use:

The “Bituminous Concrete Surface Patching” item should be used as a temporary repair item for maintaining traffic on both rigid (concrete) and flexible (bituminous concrete or asphalt) pavement structures. This is typically performed after milling but prior to permanent patching.

This item is intended to be used to temporarily repair sections of milled or exposed pavement surfaces that are broken, damaged, distorted, or delaminated. Examples of such areas include potholes, open longitudinal joints, ruts, and depressions.

These areas should be corrected by thoroughly cleaning any loose material and debris, applying a tack coat to the entire area to be patched, and finally placing and compacting HMA or PMA to match the elevation of the surrounding pavement. Subsequent to surfacing patching, it is expected that one of the following items be used as a permanent repair solution.

0406125.10A – Bituminous Concrete Patching – Partial Depth on PCC

- Previous item name and number:
 - 0406125A – Bituminous Concrete Surface Patch (with PCC Base) (SY)
- New item name and number:
 - 0406125.10A – Bituminous Concrete Patching – Partial Depth on PCC (SY)
- Intended use:

The “Bituminous Concrete Patching – Partial Depth on PCC” item should be used as a permanent repair item for areas of partial depth deterioration on Portland Cement Concrete (PCC) pavement structures. If the roadway section is a composite pavement structure (concrete base overlayed with bituminous concrete), then the work shall be performed after milling/removal of the bituminous concrete overlay.

This item is intended to be used to repair a section of deteriorated concrete pavement with relatively minor functional distresses located above any reinforcing steel. Examples of these distresses include low severity spalling of joints, scaling, pop-outs, shrinkage cracking, and failing existing partial-depth patches. Please note that moderate to high severity spalling of joints (with exposed reinforcing), corner breaks, longitudinal or transverse cracking, faulting, and blowups do not fall under the scope of this item. These distresses likely require a full depth concrete repair performed under Item No. 0401152A – Concrete Pavement Replacement for Roadway (Full-Depth).

The concrete should be corrected by milling to a depth between 1.5 to 2.5 inches within the area to be patched, cleaning out the loose material and debris, applying tack coat within the milled area, and finally placing and compacting with HMA or PMA to match the elevation of the surrounding pavement.

0406125.20A – Bituminous Concrete Patching – Partial Depth

- Previous item name and number:
 - 0406125A – Bituminous Concrete Surface Patch (SY)
- New item name and number:
 - 0406125.20A – Bituminous Concrete Patching – Partial Depth (SY)
- Intended use:

The “Bituminous Concrete Patching – Partial Depth” item should be used as a permanent repair item for areas of partial depth deterioration on flexible (bituminous concrete or asphalt) pavement structures. If the roadway is to be milled and paved, then the work shall be performed after milling and before paving.

This item is intended to be used to repair sections of flexible pavement with minor functional distresses which are not expected to extend through the full depth of the pavement. Examples of these distresses include mixture raveling, flushing/bleeding, lift delamination, deteriorated existing patches, and higher severity block cracking. More specifically, block cracking includes interconnected transverse/thermal cracking and non-wheel path longitudinal cracking. Please note that single cracks can typically be sealed or filled under other items depending on the width, depth, spacing, and condition of the cracking.

The flexible pavement should be corrected by milling to a depth between 1.5 to 2.5 inches within the area to be patched, cleaning out the loose material and debris, applying tack coat within the milled area, and finally placing and compacting with HMA or PMA to match the elevation of the surrounding pavement.

0406128.10A – Bituminous Concrete Patching – Full Depth on PCC Base

- Previous item name and number:
 - 0404101A – Bituminous Concrete Patching – Partial Depth (SY)
- New item name and number:
 - 0406128.10A – Bituminous Concrete Patching – Full Depth on PCC Base (SY)

- Intended use:

The “Bituminous Concrete Patching – Full Depth on PCC Base” item should be used as a permanent repair item for areas of full depth deterioration on composite pavement structures (concrete base overlaid with bituminous concrete).

This item is intended to be used to repair sections of composite pavement with moderate to high severity structural distresses, or functional distresses that extend from the pavement surface to the bottom of the asphalt overlay. Examples of these distresses include reflective cracking from underlying transverse joint deterioration or mid-slab cracks in the concrete pavement.

The composite pavement should be corrected by sawcutting through the bituminous concrete to the existing concrete within the area to be patched, sounding the concrete base, jack hammering to a solid depth, cleaning out the loose material and debris, applying tack coat within the milled area, and finally placing and compacting with HMA or PMA to match the elevation of the surrounding pavement.

0406128.20A – Bituminous Concrete Patching – Full Depth

- Previous item name and number:
 - 0404101A – Bituminous Concrete Patching – Partial Depth (SY)
- New item name and number:
 - 0406128.20A – Bituminous Concrete Patching – Full Depth (SY)
- Intended use:

The “Bituminous Concrete Patching – Full Depth” item should be used as a permanent repair item for areas of full depth deterioration on flexible (bituminous concrete or asphalt) pavement structures.

This item is intended to be used to repair sections of flexible pavement with moderate to high severity structural distresses, or functional distresses that extend from the pavement surface to the bottom of the asphalt. Examples of these distresses include fatigue cracking (also known as alligator cracking), wheel-path longitudinal cracking, and edge cracking.

The flexible pavement should be corrected by removing existing bituminous concrete pavement down to the existing granular base within the area to be patched, regrading and recompact the existing base, cleaning out the loose material and debris, applying tack coat on the cut sides/walls of the excavated area, and finally placing and compacting with HMA or PMA to match the elevation of the surrounding pavement. Additionally, Processed Aggregate Base may be used to replace the existing granular base during excavation if it is determined to be in poor condition or contributing to the distress in the asphalt layers.

0406128.30A – Bituminous Concrete Patching – Pavement Reconstruction

- Previous item name and number:
 - 0404100A – Bituminous Concrete Patching – Full Depth (SY)
- New item name and number:
 - 0406128.30A – Bituminous Concrete Patching – Pavement Reconstruction (SY)
- Intended use:

The “Bituminous Concrete Patching – Pavement Reconstruction” item should be used as a permanent repair item for areas of flexible (bituminous concrete or asphalt) pavement structures which require full-depth roadway reconstruction, including a new granular base layer.

This item is intended to be used to completely replace sections of a bituminous concrete pavement structure. These areas should have high severity structural distresses which indicate a failure of the existing asphalt and granular base. Examples of these distresses include potholes and fatigue cracking (also known as alligator cracking), typically with associated permanent deformation or rutting.

This item may also be used on projects with minor pavement impacts such as traffic signal improvements. It may also be used when sidewalk or curb installation is needed on a project.

The flexible pavement should be corrected by excavating the existing bituminous concrete and granular base within the area to be patched, grading, and compacting the remaining base material or subgrade, placing and compacting new Processed Aggregate Base material to the depth specified (minimum 12 inches), applying tack coat on the cut sides/walls of the excavated areas, and finally placing and compacting new HMA or PMA to match the elevation of the surrounding pavement.