

X-PHALT™ Technical Bulletin: Asphalt Pothole Application Recommendation Guide

Various types of repair products exist for pothole repair. Damaged concrete roads are repaired using both cementitious and asphalt based products. Damaged asphalt roads, to date, are predominantly repaired with bitumen (asphalt) based repair products as cementitious based products have been historically known to not bond to asphalt.

Concrete surfaces are more durable than asphalt due to its inherent resistance to rutting, shoving, and raveling. These advantageous durability properties of cement versus bitumen based materials are now available for repairing asphalt pavement.

With the introduction of X-PHALT™ cement binding technology, new options are available that provide road maintenance personnel the ability to extend pothole life expectancy in asphalt pavement.

Potholes come in many shapes, sizes, structural composition, and reasons for their formation, including:

- Partial depth
- Full depth
- Overlay failure
- Substrate failure
- Unstable subgrade / roadbed

The quality of the repair, as with most situations, is only as good as the preparation. If the above underlying causes are not adequately addressed, the results will not be optimal and the defect will return. A good, solid foundation is required in order for any repair material to perform to the best of its capability.

Below are several examples of asphalt pothole configurations that are suitable for X-PHALT™.

1. Asphalt overlay failure on solid concrete base



Preparation: remove any loose debris and standing water, dampen the concrete base layer to prevent drawing excess water from the wet X-PHALT™ during cure.

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2. Missing asphalt top layer, debris filled over solid asphalt base layer

Before:



Preferred preparation: saw cut back (or chisel) until sound adjacent top layer and base layer are exposed; remove loose debris and standing water; fill and finish with hand tools to desired texture (trowel, tine or broom finish).

Prepped:



After:



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3. Missing asphalt top layer with exposed sound asphalt base layer



Preparation: if necessary, saw cut back (or chisel) until sound adjacent top layer is exposed; remove loose debris and standing water; fill and finish with hand tools to desired texture. Note: if there are any existing cracks in the base layer, they may reflect through the cementitious repair. However, the chemical bond between X-PHALT™ and the asphalt will keep the repair in place and attached to the asphalt base course.

4. Exposed subgrade; full depth



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Preparation: remove loose debris; remove damaged material around the perimeter, chisel away all sharp points jutting from the bottom and side to remove stress concentrators that will initiate cracks; fill with repair material and finish with desired texture. Note: the sub base must be firm enough to support the loading transfer from the repair material without deflection.

The following examples are not recommended due to an unstable subbase or too thin to support vehicle loading. They are better addressed by full depth HMA or a complete re-surfacing after remedying the underlying cause:



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