

CASE HISTORY

Ref: US0719

OUTLINE:

- Problem
- Traditional Repair Approaches and their Imperfections
- X-Phalt Approach

Permanent Repair Using X-PHALT™ of Asphalt Longitudinal Construction Joint

Problem: Longitudinal cracks are common between adjacent paved lanes. They are

caused by poor joint construction, pavement fatigue, reflective cracking, and / or an improper mix design. Water will enter the subgrade and can lead to deterioration of the substrate's soundness, particularly if the gap goes through all wear layers. The wearing surface failure will continue to expand under traffic conditions. Freeze – Thaw cycling during the winter months will significantly accelerate the roadway deterioration, resulting in potholes and hazardous gaps.

Traditional repair approaches: Gaps less than ½” wide are traditionally repaired with just a sealer. For larger areas the correct procedure is to remove the damaged material and replace it with an overlay using hot mix asphalt. However, this method requires onsite heavy equipment and is expensive. Cold patch repairs, which are temporary, are too often used instead due to their ease and reduced cost. However, cold patch has a service life expectancy of 6 to 12 months before failing due to ejection, rutting, shoving, etc.



Cold Patch provides a “quick fix” with a low life expectancy.

Hot Mix provides a more permanent solution, but is expensive and requires heavy equipment.

X-Phalt™ provides a truly permanent solution at a low cost and without the necessity of on-site equipment.

Figure 1: Longitudinal Construction Joint Crack between Lanes. Note the Large Gap Near the Foreground.

X-PHALT™ Approach:

- X-PHALT cementitious repair mortar will chemically bond to the bitumen in asphalt pavement, creating a permanent repair.
- X-PHALT is applied in the same way as with concrete repair mortars – add water; mix using a drill & paddle, drum, or mortar mixer; and place.
- X-PHALT forms a hardened cement that will not rut, shove, or eject.
- X-PHALT cleans up with water; does not burn skin like Portland cement; does not require a bonding layer, heat source, or heavy onsite equipment; and does not contain any solvents or VOC's, nor any noxious odors.

The result is a repair that will last as long as the surrounding road surface.



Figure 2: Full Depth Construction Joint Longitudinal Crack



Figure 3: Repair made with X-Phalt™ after 1 year of heavy trafficking