

A study on the installation method, efficiency and performance of Road Patch on common recurrent pavement localized distress on Malaysian pavements.



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ABSTRACT

A study of the Road Patch performance was conducted in 2020 through pilot installations on a selection of highways, municipal council roads and federal roads on Malaysia, and follow-up visual assessments.

The study focused on repair turn-around time and durability of repairs on common pavement defects as compared to conventional methods of repairs.

INTRODUCTION

We embarked upon a study of the Road Patch performance in 2020, in terms of repair turn-around time and durability of repairs on common pavement defects such as recurrent potholes, frequently broken-down manhole to asphalt pavement repairs, potholes on asphaltic plug bridge joint repairs, lane-wide defects repairs and pavement spot delamination repairs.

The Road Patch functions as a peel and seal, self-adhesive, waterproof membrane intended to prolong and contain asphalt and concrete pavement repairs.

We wanted to study whether the Road Patch, would be compatible to Malaysian weather and pavement conditions here.

METHODOLOGY

The methodology is graphically shown in Figures 1 to 8



Fig 1: Clean.

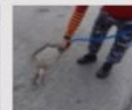


Fig 2: Heat.



Fig 3: Cold-mix patching



Fig 4: Compact



Fig 5: Tack-coating.



Fig 6: Apply Patch.



Fig 7: Compact.



Fig 8: Completed.

RESULTS AND DISCUSSION

<p>Fig 1: Original Condition, 22 Oct 2021</p>	<p>Fig 2: Patched, 22 Oct 2021</p>	<p>Fig 1: Original Condition, 2 Nov 2020</p>	<p>Fig 2: Patched, 2 Nov 2020</p>	<p>Fig 2: Patched, 11 Nov 2020</p>	<p>Fig 3: As of 3 Sep 2021</p>
<p>Fig 3: As of 29 Dec 2021 (Post 2021 Major Floods)</p>		<p>Fig 1: Original Condition, 11 Nov 2020</p>	<p>Fig 3: As of 16 April 2024</p>		
<p>1. Common potholes can be repaired within 15 minutes with minimal disruption to traffic as pavement cutting is not required. The repaired spot can be open to traffic immediately after repairs. This repair withstood the 2021 Major Floods in Klang, as the Road Patch integrated into the pavement forming a water-tight seal.</p>		<p>2. Depending on size and complications, Manholes surrounding pavement damage can be completed within 30 minutes and can be open to traffic immediately thereafter. The repairs done in 2020 are still functional and in good serviceable condition as of today.</p>		<p>3. Potholes on Asphaltic plug bridge joints can be patched up without need to replace entire bridge joint. The patch was observed to have integrated with the pavement, protecting the repairs below perfectly. The patch was mistakenly milled up after 1 year.</p>	

CONCLUSIONS

- The Road Patch provides a water-tight seal over the repaired areas and eventually integrating into the pavement, prolonging the repairs' lifespan up to 4 years and beyond.
- Mobilization of repair crew can be downsized to 2 persons with simple tools for repair of common potholes, spot delamination and lane-wide repairs.
- This opens-up the potential for forming more emergency repair response teams to respond quickly to reported or Ai detected potholes.
- The product is compatible for use in Malaysian weather and pavement conditions.

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