Agency Update
Saskatchewan Ministry of Highways & Infrastructure
Annual Pavement Preservation Treatment Selection Toolbox

Tool Box:

- Business Process
- Treatment Selection Guide
- List and Definitions of Each Treatment type
- Treatment Grid
Business Process

Key Steps

- Potential Project Lists
- In Office Project Screening
- In Field Project Screening
- Optional Designs
- Detailed Design
- Construction
Annual Pavement Preservation Treatment Selection

Guide

<table>
<thead>
<tr>
<th>Grid</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>InfoSheets</th>
</tr>
</thead>
</table>

![Image of Guide and Grid]

![Image of InfoSheets]

![Image of Treatment Standard Sheet]
Preservation Treatment Selection Guide

• criteria definition and why you should be thinking about it

Reflective Cracking Mitigation

Some treatments restrict cracks from coming through the treatment. A treatment’s effectiveness in mitigating reflective cracking is related to the depth of the treatment and associate design, which is site specific.

Rationale: How effective is this treatment at addressing reflective cracking?

Possible Values: yes or no based on would the cracks reflect through the treatment

How do you use these values? The values describe the treatment’s ability to mitigate

Reflective cracks rise thru the pavement from below the surface.
quickly, systematically and consistently identify:

- suitable treatment for a given location, by considering all the decision criteria and all the possible treatment alternatives
- rule out potentially unsuitable treatments
The grid criteria are organized into groups:

- Preservation Database Data
- Other Database Information
- Office Investigations
- Field observations
- Tests
### Treatment Selection Grid

<table>
<thead>
<tr>
<th>Treatment Type</th>
<th>Description</th>
<th>Data Source</th>
<th>Treatment Type</th>
<th>Description</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-1</td>
<td>Graded Aggregate Seal</td>
<td></td>
<td>L-2</td>
<td>Single Chip Seal</td>
<td></td>
</tr>
<tr>
<td>L-3</td>
<td>Racked-In Chip Seal</td>
<td></td>
<td>L-4</td>
<td>Sandwich Seal</td>
<td></td>
</tr>
<tr>
<td>L-5</td>
<td>Fiber Reinforced Graded Aggregate Seal</td>
<td></td>
<td>L-6</td>
<td>Fiber Reinforced Chip Seal</td>
<td></td>
</tr>
<tr>
<td>L-7</td>
<td>Fiber Reinforced Racked-In Chip Seal</td>
<td></td>
<td>L-9</td>
<td>Microsurfacing Top coat</td>
<td></td>
</tr>
<tr>
<td>M-1</td>
<td>Microsurfacing Rut Fill and Top coat</td>
<td></td>
<td>M-2</td>
<td>Microsurfacing Rut Fill</td>
<td></td>
</tr>
<tr>
<td>M-3</td>
<td>Microsurfacing Rut Fill with Chip Seal (L-2 thru L-8)</td>
<td></td>
<td>M-4</td>
<td>Microsurfacing Rut Fill with Graded Aggregate Seal</td>
<td></td>
</tr>
<tr>
<td>M-5</td>
<td>Mill and UltraThin Overlay</td>
<td></td>
<td>M-6</td>
<td>Mill and UltraThin Overlay with SAMI</td>
<td></td>
</tr>
<tr>
<td>H-1</td>
<td>Mill and Overlay</td>
<td></td>
<td>H-2</td>
<td>Mill and Rubber HMA Overlay</td>
<td></td>
</tr>
<tr>
<td>H-3</td>
<td>Hot In Place and Overlay</td>
<td></td>
<td>H-4</td>
<td>Mill and Overlay with SAMI</td>
<td></td>
</tr>
<tr>
<td>H-5</td>
<td>Mill and Rubber HMA Overlay with SAMI</td>
<td></td>
<td>H-6</td>
<td>Base Treatment and Double Seal</td>
<td></td>
</tr>
<tr>
<td>H-7</td>
<td>Base Treatment and AC Overlay</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Criteria for all Treatment Types:
- Graded Seals
- Chip Seals
- Microsurfacing
- TLO
- Repaving
- HIP
- CIP
## Treatment Infosheets

**Treatment Type:** Microsurfacing  
**Treatment Family:** Type: Medium, M-8  
**Ideal condition:** state for treatment: 5.  
**Other states that could get this treatment:** 6.

**Typical Triggers for treatment:** why do it?:  
- Pavements with adequate strength, poor rutting, moderate cracking, oxidation and raveling;  
- Microsurfacing to improve skid resistance, and prevent water infiltration.

**Do not do if cracking is worse than moderate or structural capacity is weak, or freezing. Does not perform well when applied late in the season, colder and dropping temperatures.**

**Unit Cost:** ($/year): 57.50/m² (2010)  
**Life:** 10 years

**Typical Materials Used:**  
- Polymer modified emulsion (water and additives)  
- 100% graded crushed, compatible aggregate  
- Mineral filler such as Portland cement or fly ash.

**References (sources of information):**  
2. Caltrans MTAG, Chapter 9: Microsurfacing, 2009  
3. NCHRP Synthesis 411, “Microsurfacing”, 2010  
4. Transportation Research Board, Washington, D.C.

---

1. **Standard cross-section**

![Microsurfacing Multi-Layer Application Diagram](image)

2. **Micro-sealed rut**

![Original Pavement Profile and Micro Surfacing Mix Diagram](image)

---

1. **Applying Emulsion**  
2. **Quality Control**  
3. **Entire Process**
Nichole Andre
Sr. Asset Management Engineer Roads
Government of Saskatchewan
e: nichole.andre@gov.sk.ca
p: (306) 933-6045