

Agency Update

Saskatchewan Ministry of Highways & Infrastructure

**Midwestern Pavement
Preservation Partnership Meeting
September 3, 2014**



Government
— of —
Saskatchewan

Annual Pavement Preservation Treatment Selection Toolbox

Tool Box:

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



Business Process

AM2000 Developing Rolling Treatment Programs

Issue date:

Version: 2.0.6

1. Objectives

The objectives of this business process are to:

- 1.1. Develop a multi-year treatment program that is site specific and compatible with the strategy approved for the road network.
- 1.2. Produce optimized treatment programs for the road network based on treatment effectiveness.
- 1.3. Rapidly identify site specific projects when funding resources are increased or reduced with short notice.

2. Scope

- 2.1. Multi-year programs are developed with site specific projects for each road network.
- 2.2. Applies to pavements only.

3. References

The process refers to the following documents:

- 3.1. AM1000 – Strategy Development for Road Networks (on page 5)
- 3.2. AM2041.2 - Treatment Survival Annual report (on page 5)
- 3.3. AM2041.2 - Treatment Type Performance Annual Report: Info Sheet (on page 5)

Key Steps

- Potential Project Lists
- In Office Project Screening
- In Field Project Screening
- Optional Designs
- Detailed Design
- Construction



Annual Pavement Preservation Treatment Selection

Guide

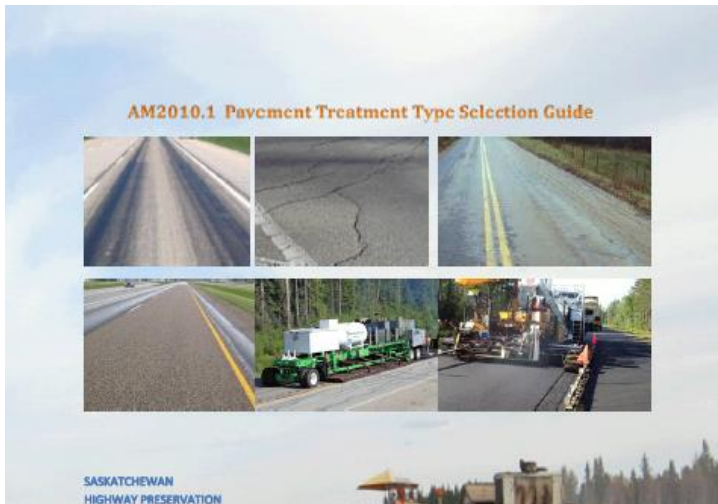
Grid

InfoSheets



		OFFICE														FIELD			
		PRIORITY/UTILITY/AGE/AD-AS-2														ROADWAY CONDITION	TRAFFIC	ROADWAY CONDITION	TRAFFIC
ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION	ROADWAY TYPE	ROADWAY CLASSIFICATION
1	1.0	1	1.0	1	1.0	1	1.0	1	1.0	1	1.0	1	1.0	1	1.0	1	1.0	1	1.0
2	2.0	2	2.0	2	2.0	2	2.0	2	2.0	2	2.0	2	2.0	2	2.0	2	2.0	2	2.0
3	3.0	3	3.0	3	3.0	3	3.0	3	3.0	3	3.0	3	3.0	3	3.0	3	3.0	3	3.0
4	4.0	4	4.0	4	4.0	4	4.0	4	4.0	4	4.0	4	4.0	4	4.0	4	4.0	4	4.0
5	5.0	5	5.0	5	5.0	5	5.0	5	5.0	5	5.0	5	5.0	5	5.0	5	5.0	5	5.0
6	6.0	6	6.0	6	6.0	6	6.0	6	6.0	6	6.0	6	6.0	6	6.0	6	6.0	6	6.0
7	7.0	7	7.0	7	7.0	7	7.0	7	7.0	7	7.0	7	7.0	7	7.0	7	7.0	7	7.0
8	8.0	8	8.0	8	8.0	8	8.0	8	8.0	8	8.0	8	8.0	8	8.0	8	8.0	8	8.0
9	9.0	9	9.0	9	9.0	9	9.0	9	9.0	9	9.0	9	9.0	9	9.0	9	9.0	9	9.0
10	10.0	10	10.0	10	10.0	10	10.0	10	10.0	10	10.0	10	10.0	10	10.0	10	10.0	10	10.0






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 associated 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.



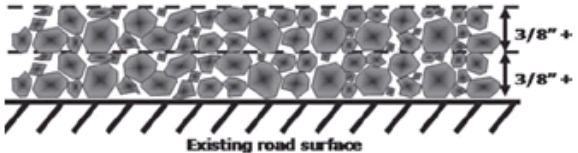




Treatment Selection Grid

TREATMENT FAMILY	TARGET CONDITION STATE	TREATMENT TYPE	TREATMENT DESCRIPTION	FIELD	
				FIELD OBSERVATION	TEST
DATA SOURCE	L-1	Graded Aggregate Seal	L-1 Graded Aggregate Seal		
			L-2 Single Chip Seal		
			L-3 Racked-In Chip Seal		
			L-4 Sandwich Seal		
			L-5 Fiber Reinforced Graded Aggregate Seal		
			L-6 Fiber Reinforced Chip Seal		
			L-7 Fiber Reinforced Racked-In Chip Seal		
			L-9 Microsurfacing Top coat		
			M-1 Microsurfacing Rut Fill and Top coat		
			M-2 Microsurfacing Rut Fill		
DATA SOURCE	L-2	Single Chip Seal	M-3 Microsurfacing Rut Fill with Chip Seal (L-2 thru L-8)		
			M-4 Microsurfacing Rut Fill with Graded Aggregate Seal		
			M-5 Mill and UltraThin Overlay		
			M-6 Mill and UltraThin Overlay with SAMI		
			H-1 Mill and Overlay		
			H-2 Mill and Rubber HMA Overlay		
			H-3 Hot In Place and Overlay		
			H-4 Mill and Overlay with SAMI		
			H-5 Mill and Rubber HMA Overlay with SAMI		
			H-6 Base Treatment and Double Seal		
DATA SOURCE	L-3	Racked-In Chip Seal	H-7 Base Treatment and AC Overlay		
DATA SOURCE	L-4	Sandwich Seal			
DATA SOURCE	L-5	Fiber Reinforced Graded Aggregate Seal			
DATA SOURCE	L-6	Fiber Reinforced Chip Seal			
DATA SOURCE	L-7	Fiber Reinforced Racked-In Chip Seal			
DATA SOURCE	L-8	Fiber Reinforced Sandwich Seal			
DATA SOURCE	L-9	Microsurfacing Top coat			

Criteria for all Treatment Types:

- Graded Seals
- Chip Seals
- Microsurfacing
- TLO
- Repaving
- HIP
- CIP

Treatment Infosheets

Treatment Type: Microsurfacing	1. Standard Cross-section
Treatment Family, Type: Medium, M-8	
Ideal Condition State for treatment: 5.	
Other states that could get this treatment: 6	
Number of Years Saskatchewan has been using this treatment: more than 10	
Typical Triggers for treatment (why do it?): Pavements with adequate strength, poor rutting; moderate cracking, oxidation and ravelling; Micro-seal to improve skid resistance, and prevent water infiltration.	<p>Microsurfacing Multi-Layer Application</p>  <p>Existing road surface</p>
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.	2. Micro-sealed rut
Unit Cost (Year): \$7.50/m ² (2010); Life: 10 years	<p>Original Pavement Profile Micro Surfacing Mix</p>  <p>Rut in Wheelpath</p>
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): 1. Minnesota T ² : Best Practices Handbook on Asphalt Pavement Maintenance, Johnson, 2000. 2. Caltrans MTAG, Chapter 9: Micro-surfacing, 2009 3. NCHRP Synthesis 411, "Microsurfacing", 2010 Transportation Research Board, Washington, D.C., 4. Recommended Performance Guideline For Micro Surfacing A143, ISSA, 2010	 <p>1. Applying emulsion</p>  <p>2. Quality Control</p>  <p>3. Entire Process</p>



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