Montana Department of Transportation
Research Program
November 2006

EXPERIMENTAL PROJECT FOR THE EVALUATION OF PAVEMENT MARKERS

Location: MacDonald Pass – Lewis & Clark County
Highway 12, N-8 (C000008); Milepost 23-39

Project Number: Maintenance Project No. 307945

Type of Project: Pavement Markers

Principal Investigator: Craig Abernathy: Experimental Projects Manager
Tom Roberts: Maintenance Reviewer

Objective

Compare current practice using epoxy type markings with various urethane modified type markings for long-term durability and retro-reflectivity. Various types of grinds will be employed to see if this variable will affect performance of the products.

Experimental Design

Site	Beg MP	End MP	Material and Supplier	Miles 4" White	Miles 4" Yellow	Type of Grind
1	23.20	25.20	**MODIFIED URETHANE - IPS, HPS-4**	5.0	4.0	GROOVE
2	25.20	26.20	**MODIFIED URETHANE - IPS, HPS-4**	2.5	2.0	LIGHT
3	26.20	28.20	**MODIFIED URETHANE - EPOPLEX, LS-70**	5.0	4.0	GROOVE
4	28.20	29.20	**MODIFIED URETHANE - EPOPLEX, LS-70**	2.5	2.0	LIGHT
5	29.20	31.20	**MODIFIED URETHANE -POLY-CARB, MARK-70.3**	5.0	4.0	GROOVE
6	31.20	32.20	**MODIFIED URETHANE -POLY-CARB, MARK-70.3**	2.5	2.0	LIGHT

7	32.20	33.20	**EPOXY – IPS, HPS-3**	2.5	2.0	GROOVE
8	33.20	34.20	**EPOXY – IPS, HPS-3**	2.5	2.0	LIGHT
9	34.20	35.20	**EPOXY – EPOPLEX, LS-50**	2.5	2.0	GROOVE
10	35.20	36.20	**EPOXY – EPOPLEX, LS-50**	2.5	2.0	HEAVY
11	36.20	37.20	**EPOXY – POLYCARB, MARK-55.3**	2.5	2.0	GROOVE
12	37.20	39.00	**EPOXY – POLYCARB, MARK-55.3**	4.5	3.6	HEAVY

Evaluation Procedures

Installation of pavement markings will be monitored by research and maintenance for consistency of application. Any deviation from work plan and or construction issues will be documented. Initial retro-reflectivity data will be recorded with semiannual readings collected during the duration of the project. A post winter (07) report will document the first winter season performance of the markings. Information will include durability of material, retro-reflectivity and anecdotal information from the section staff responsible for maintaining the road during the winter months. Applicable safety information will also be added in the final report. Images in this report are taken directly after application.

MacDonald Pass Experimental Striping Retro-Reading Averages – 8/8,9/06

Modified Urethane-IPS, HPS-4 MP 23.2 to MP 26.2

Lane	Color	Average
East Bound	White Fog	324
East Bound	White Skip	333
Center Lane	Yellow	228
West Bound	White Skip	NA oil on line
West Bound	White Fog	332

Modified Urethane-Epoplex, LS-70 MP 26.2 to MP 29.2

Lane	Color	Average
East Bound	White Fog	354
East Bound	White Skip	328
Center Lane	Yellow	238
West Bound	White Skip	342
West Bound	White Fog	341

Modified Urethane-Poly-Carb, Mark-70.3 MP 29.2 to MP 32.2

Lane	Color	Average
East Bound	White Fog	470
East Bound	White Skip	448
Center Lane	Yellow	200
West Bound	White Skip	NA oil on line

West Bound	White Fog	NA oil on line

Epoxy-IPS, HPS-3 MP 32.2 to MP 34.2

Lane	Color	Average
East Bound	White Fog	338
East Bound	White Skip	334
Center Lane	Yellow	237
West Bound	White Skip	336
West Bound	White Fog	343

Epoxy-Epoplex, LS-50 MP 34.2 to MP 36.2

Lane	Color	Average
East Bound	White Fog	350
East Bound	White Skip	329
Center Lane	Yellow	213
West Bound	White Skip	344
West Bound	White Fog	332

Epoxy, Poly-Carb, Mark-55.3 MP 36.2 to MP 39.0

Lane	Color	Average
East Bound	White Fog	330
East Bound	White Skip	335
Center Lane	Yellow	248
West Bound	White Skip	313
West Bound	White Fog	319

Site 2: MODIFIED URETHANE - IPS, HPS-4

Site 3: MODIFIED URETHANE – EPOPLEX LS-70

Site 4: MODIFIED URETHANE – EPOPLEX LS-70

Site 5: MODIFIED URETHANE – POLY-CARB; MARK-70.3

Site 6: MODIFIED URETHANE – POLY-CARB; MARK-70.3

Site 7: EPOXY – IPS; HPS-3

Site 8: EPOXY – IPS; HPS-3

Site 9: EPOXY – EPOPLEX; LS-50

Site 10: EPOXY – EPOPLEX; LS-50

Site 11: EPOXY – POLYCARB; MARK 55.3


Site 12: EPOXY – POLYCARB; MARK 55.3