

Evaluation of HD-21A Durable Waterborne, Regular Waterborne & Alkyd Traffic Paint

Location: Hwy. 43:12, 43:10, 43:08, 43:06 and 49:12
Applied: June, August and October 2007
Inspected: February 20, 2008

HD-21A Waterborne Traffic Paint

Highway 43:12, NBL, Km 12



White edge line: looks fair at this location, good bead retention. Paint is starting to chip away.
Retro readings: 84, 110, 77, 79, 100, 105, 96, 122, – **Average: 97 Mcd**



White skip line: appearance and reflectivity look good. Some snowplow scragging.
Skip line Retro readings: 117, 119, 98, 83, 102, 106, 110, 111, 93, 108 – **Average: 105 Mcd**



Yellow edge line: more snowplow scapping was evident on the yellow line.
Retro readings: 79, 86, 84, 80, 90, 90, 90, 77, 59, 80, 72 – **Average: 81 Mcd**

Highway 43:10, NBL, Km 39



White edge line: edge line looks good at this location, good durability.
Retro readings: 92, 95, 89, 82, 83, 84, 86, 92, 94, 77 – **Average: 87 Mcd**



White Skip line: line is performing fairly well at this location.
Retro readings: 76, 81, 81, 92, 92, 79, 88, 76, 104, 89, 86, 104

Average: 80 Mcd



Yellow edge line: more snowplow scapping at this location, however good bead retention.
Retro readings: 107, 124, 109, 103, 97, 93, 105, 122, 122, 93 –

Average: 108 Mcd

Note: The good retro-reflectivity may be due to the yellow line over the original white line which adds to the brightness.

Highway 43:08, NBL, Km 28



White edge line: more wear at this location, bead retention is less as can be seen from the retro's.
Retro readings: 75, 63, 57, 60, 72, 61, 62, 59, 58, 75, 70, 72 – **Average: 65 Mcd**



White skip line: poor durability and bead retention, retro-reflectivity has dropped in this area.
Retro readings: 59, 64, 53, 76, 59, 73, 54, 56, 57, 60, 64 – **Average: 61 Mcd**



Yellow edge line: poor durability and loss of glass beads.

Retro readings: 56, 47, 50, 68, 57, 54, 51, 50, 44, 50, 48, 59 – **Average: 53 Mcd**

Alkyd Traffic Paint

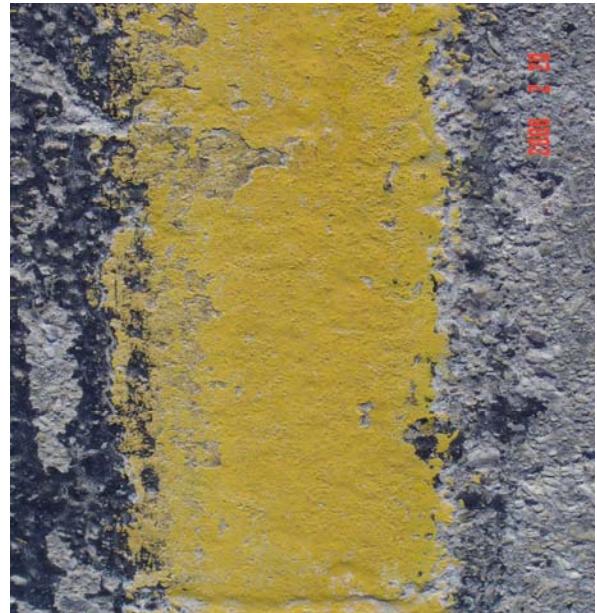
Highway 49:12, Km 6



White edge line(E): durability is good, poor bead retention.

Retro readings: 47, 43, 47, 47, 43, 40, 45, 40, 45, 48, 45

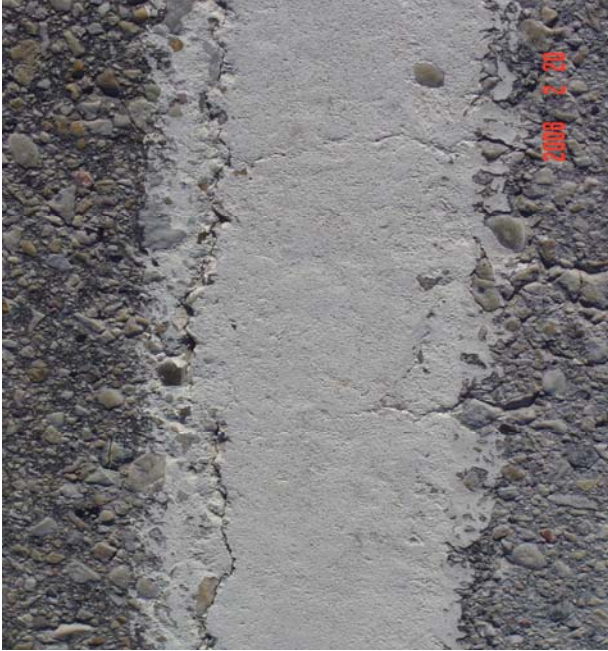
Average: 45 Mcd



Yellow skip line: same as white line

Retro readings: 36, 43, 39, 43, 36, 44, 38, 43, 37, 43, 39, 42

Average: 40 Mcd



White edge line(W): good durability, poor bead retention
Retro readings: 54, 56, 43, 52, 46, 58, 48, 58, 54, 58, 50, 49
Average: 52 Mcd



Overall look of alkyd paint system
Alkyd appearance is good.

Highway 43:06, WBL, Km 48



White edge line: fair durability, poor bead retention
Retro readings: 33, 47, 42, 37, 39, 39, 42, 37, 38, 36, 38, 43
Average: 39 Mcd



White skip line: good durability, poor bead retention
Retro readings: 38, 50, 49, 54, 48, 47, 55, 50, 49, 41, 42, 42
Average: 47 Mcd



Yellow edge line: good durability, poor bead retention.
 Retro readings: 49, 46, 43, 52, 49, 49, 51, 45, 52, 43, 47, 47
 Average: 44 Mcd

Alkyd paint system, Overall looking west

Normal Waterborne Traffic Paint

Highway 43:08, SBL, Km 31.5



White edge line: paint chipping, loss of bead
 Retro readings: 65, 71, 62, 66, 76, 72, 64, 77, 67, 64, 72, 74
 Average: 92 Mcd

White skip line: good appearance and bead retention
 Retro readings: 93, 86, 105, 92, 112, 102, 102, 112, 111, 94, 111
 Average: 93



Yellow edge line: paint is faded and chipped.
Retro readings: 59, 49, 46, 51, 54, 51, 48, 55, 57, 49, 59
Average: 52 Mcd



Normal waterborne paint system on newer pavement, durability is poor.

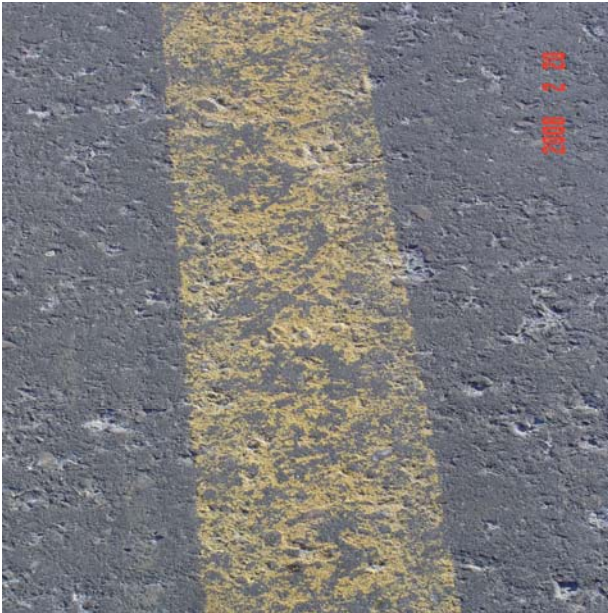
Highway 43:10, SBL, Km 13.5



White edge line: paint is chipped, loss of glass beads.
Retro readings: 90, 75, 40, 50, 71, 97, 84, 74, 87, 86, 97, 72
Average: 77 Mcd



White skip line: good durability and bead retention.
Retro readings: 119, 98, 94, 113, 100, 101, 105, 91, 101, 99
Average: 101 Mcd



Yellow edge line: poor durability and bead retention.
 Retro readings: 59, 51, 46, 46, 42, 39, 43, 40, 34, 33, 39, 48
 Average: 43 Mcd



Normal waterborne paint system on newer pavement,
 edge lines are poor, skip line is good.

HD-21A Waterborne Traffic Paint

Highway 43:10, SBL, Km 24



White edge line: paint is in excellent shape
 Retro readings: 101, 113, 94, 98, 93, 90, 97, 100, 104
 Average: 99 Mcd



White skip line: some minor scraping, otherwise good condition
 Retro readings: 122, 110, 98, 86, 84, 118, 107, 108, 90, 107, 114, 98
 Average: 104 Mcd



Yellow edge line: very good condition
Retro readings: 75, 68, 70, 79, 66, 87, 91, 73, 82, 72, 76
Average: 77 Mcd



Looking south, paint in good condition. It appears that there is no need to repaint this section in 2008.

Highway 43:12, SBL, Km 12



White edge line: good condition



White skip line: very good condition.

Retro readings: 86, 70, 84, 73, 65, 62, 59, 79, 82, 62, 71
Average: 72 Mcd

Retro readings: 114, 108, 103, 98, 103, 103, 95, 99, 91, 92, 98
Average: 101 Mcd



Yellow edge line: some loss of paint and chipping
Retro readings: 42, 44, 45, 44, 47, 46, 47, 51, 46, 46, 56
Average: 47 Mcd



Looking south, HD-21A paint looks good, however not as good as the last section. There is more bead loss on white & yellow edge lines, however durability is fine. The HD-21A May provide one more year of service.

Summary

The HD-21A Durable Waterborne paint system appears to look good in some of the areas of highway 43. However, there are some areas where retro-reflection readings are lower, therefore night time reflectance would be a problem.

Repainting of most of the NBL will be required during this coming season as the durability and retro-reflection on some areas of this stretch of roadway is not acceptable. Highway 43:12 NBL HD-21A paint system appears to have the best performance based on paint appearance and retro-reflectivity. Highway 43:10 and 43:08 NBL HD-21A paint systems will likely need repainting as the retro-reflectivity in this area is lower than highway 43:12. As can be seen from several of the photographs the skip lines show less wear than the edge lines (due to snowplowing).

The alkyd system on highway 49:12 and 43:06 was observed to have good durability; however the bead retention is poor resulting in low retro-reflectivity. This paint system will require re-painting in the coming season.

The normal waterborne paint on highway 43:08 and 43:10 SBL has good glass bead retention (good retro-reflectivity), however the durability is poor, paint is chipping away. This area will require re-painting in the upcoming season.

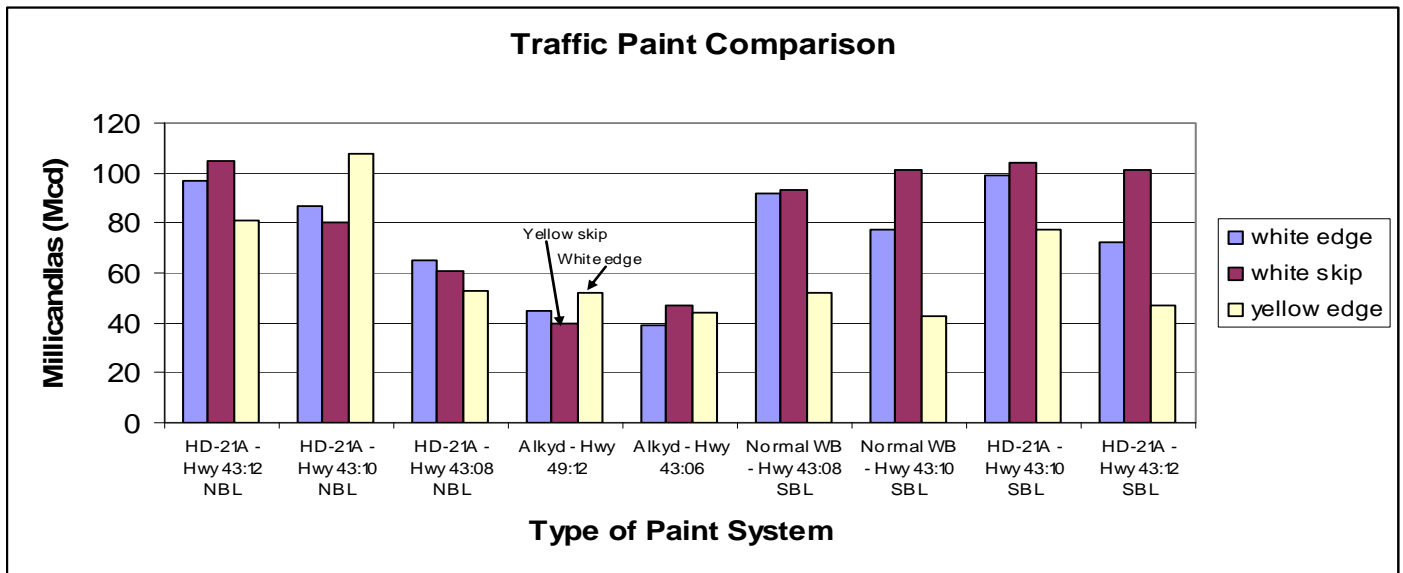
The HD-21A waterborne paint system on highway 43:10 and 43:12 SBL is in very good condition after one winter season. The retro-reflectivity (approx. 100 Mcd) and durability of this system is considered good. It appears that there is no need to repaint this section in 2008.

Conclusion

The HD-21A durable waterborne paint system has out performed the normal waterborne and alkyd paint systems (see chart below). The normal waterborne has good reflectivity, however the durability is poor, paint is showing lots of chipping. The alkyd system has good durability but poor retro-reflectivity. Therefore the normal waterborne and alkyd paint systems will require re-painting in 2008.

The HD-21A durable waterborne paint system has performed well especially on the newer asphalt of the SBL. The SBL should provide one more year of service; however the NBL will need to be assessed later in the year to determine if re-painting will be required.

Please note that more wear was observed at intersections with acceleration and deceleration lanes. These locations will likely require repainting in 2008.



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