3-10-1 Pavement Marking Material Selection Policy December 2024

PURPOSE

Uniformity in the application of pavement markings materials on state highways is very important because it will provide for consistency of motorist expectations, which can enhance traffic safety. Consistency of application will result in the most efficient usage of dollars (both for projects and maintenance) for pavement markings. In turn, this will lead to a sustainable pavement marking program that will provide effective pavement markings to address the needs of motorists at the most economical cost.

This policy provides direction on what types of pavement marking materials are used on the different types of roadways.

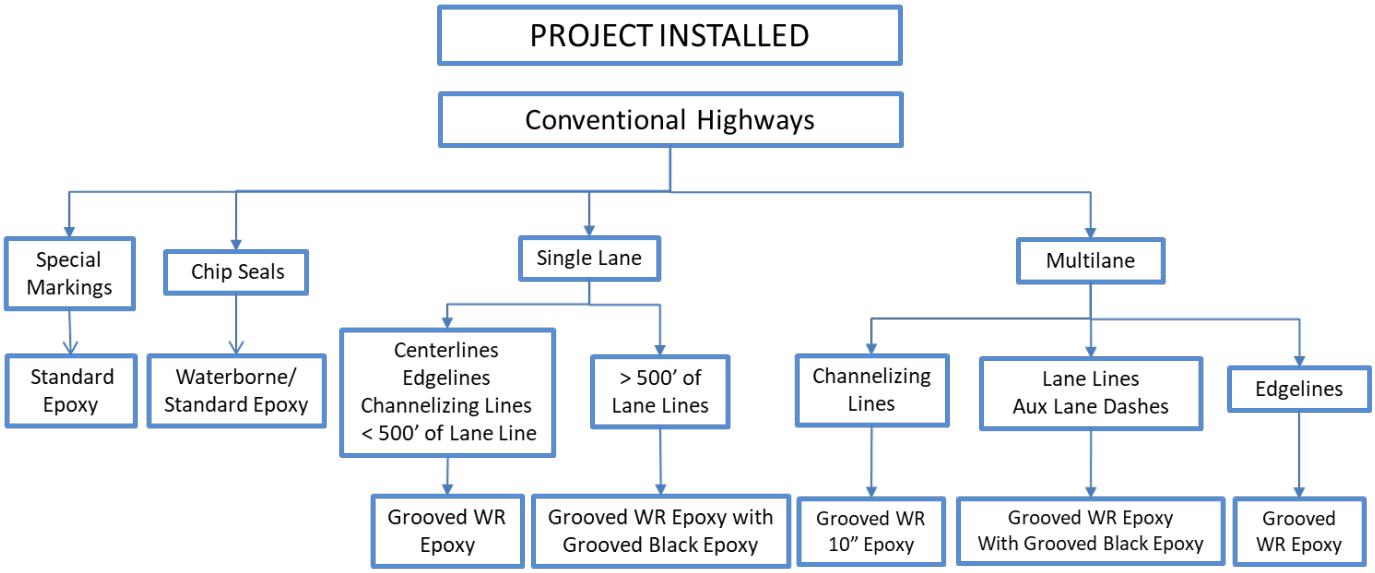
It is recognized that there *may* be times where unique situations could necessitate a deviation from this policy. Unique locations or non-standard markings **shall** be discussed with the Regional Traffic Signing and Marking Engineer prior to including such markings in contract plans.

Any pavement marking material usage requests that are not on the Department's Approved Products List **shall** be reviewed and approved by the Bureau of Traffic Operations prior to usage. Any shortages of pavement marking materials or vendors requesting usage of new products **shall** be referred to the Bureau of Traffic Operations.

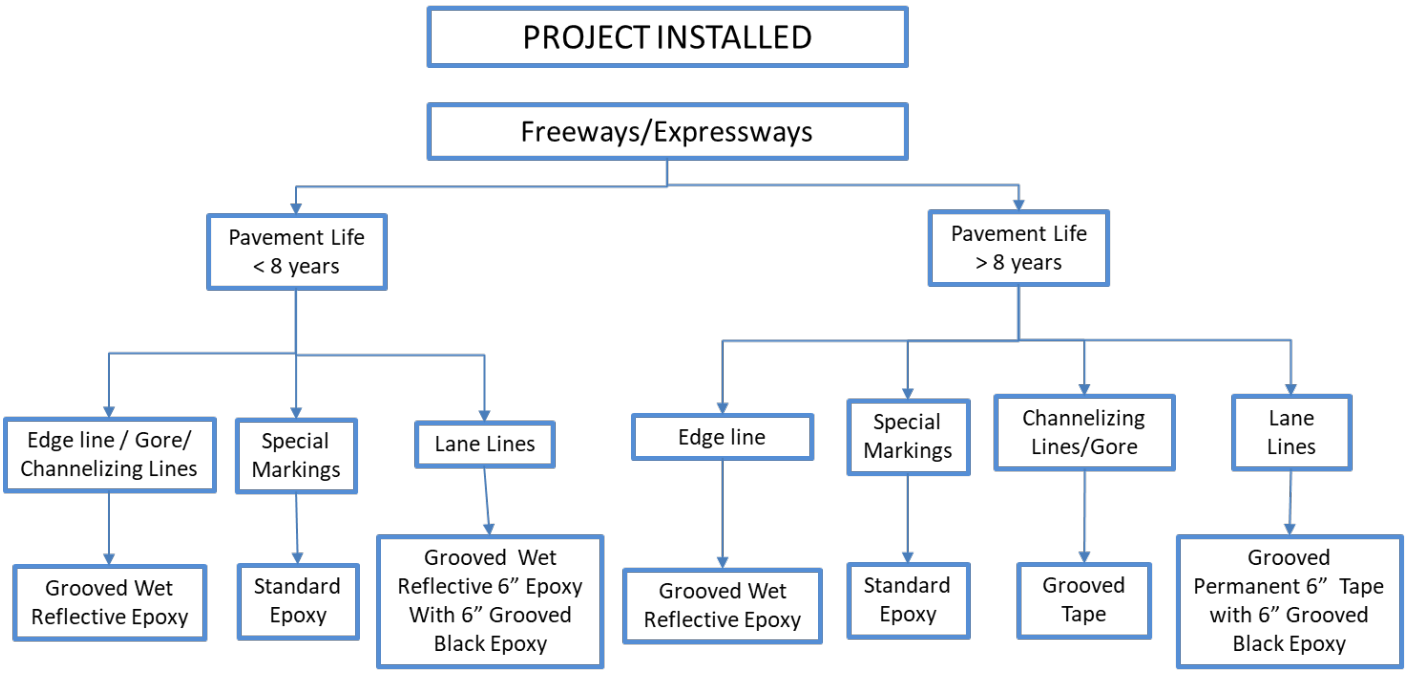
POLICY

The type of pavement marking material used on state highways is provided below in the flow charts. The flow charts are for project installed pavement markings and maintenance installed pavement markings. These charts **shall** be utilized when making the decision to select the proper pavement marking material for the roadway.

- When utilizing the flow charts, the following criteria **shall** be kept in mind: If a contrast epoxy product already exists, retrace only the white portion of the epoxy unless the black aggregate is visually missing.
- Grooved Wet Reflective Epoxy **shall** only be remarked in kind if an existing groove has maintained adequate depth.
- If preformed thermoplastic is present, remove preformed thermoplastic markings and replace with a product listed on the associated flow chart. Retracing preformed thermoplastic is **NOT** permitted.
- If tape is present and still bonding, retrace marking with a product listed on the flow chart product. However, if the tape product is failing, remove tape and replace with epoxy.



On local and connecting highway projects consult with maintaining authority for product selection.



On local and connecting highway projects consult with maintaining authority for product selection.

3-10-2 Pavement Marking Replacement Criteria — December 2024

PURPOSE

Over time the visual characteristics of pavement markings deteriorate as a result of age, traffic wear, snow plowing and ultraviolet radiation, resulting in reduced visibility. As a result, pavement markings have to be replaced as part of a routine pavement marking replacement. Often questions arise as to when pavement markings *should* be changed, who *should* replace the pavement marking, and what criteria *should* be used in determining replacement. Therefore, it is necessary to have clear, consistent guidelines for the replacement of pavement

markings on state highways.

FEDERAL HIGHWAYS MINIMUM PAVEMENT MARKING RETROREFLECTIVITY VALUES

Section 3A.03 of the MUTCD requires all units of government to use an assessment or management method that is designed to maintain the retroreflectivity of longitudinal pavement markings at or above:

- 50 mcd/m2/lx on roadways with a speed limit greater than 35 mph
- 100 mcd/m2/lx on roadways with a speed limit greater than 70 mph

To maintain compliance with the minimum pavement marking retroreflectivity values in the MUTCD, WisDOT utilizes the following approved assessment and management methods:

1. Service Life Based on Historical Data. Age and product type is tracked, and markings are replaced when it reaches its historical data replacement life expectancy.
2. Measured Retroreflectivity. Retroreflectivity of durable markings is measured on an annual basis. Due to the timing of LETs markings will need to be scheduled for replacement a year before they will fall under the required retroreflectivity. Over time the service life based on historical data cycle *may* be revised based on data from the Measured Retroreflectivity.
3. Service Life Based on Monitored Markings. Replacement of pavement markings in the field is based on the performance of a sample of control markings. The data from the control markings can provide engineering support to the Service Life Based on Historical Data method. Over time the service life based on historical data cycle *may* be revised based on data from the Monitored Markings.

DETAILED PAVEMENT MARKING REPLACEMENT POLICY

Service Life Based on Historical Data

1. The Department's Traffic Operations Asset Management System (TOAMS) **shall** be used to track inventory data on pavement markings that include install date, product type, and painted footage.
2. In general, replace:
    a. Waterborne every year
    b. Epoxy every 3 Years
    c. Black lag should be installed on epoxy retrace projects where lane lines are being retraced.
    d. Wet reflective epoxy 5 years
        i. Will only be replaced if the groove has sufficient depth to support another application of wet reflective epoxy, otherwise standard epoxy should be used.
3. Tape every 10 Years Markings needed for let projects **shall** be replaced using the flow chart in 3-10-1 and 6-6-78.
4. Waterborne pavement marking will be replaced by County Highway Departments, through Traffic Maintenance Agreements. WisDOT **shall** provide a pavement marking material contracts for the County Highway Departments to purchase from.
5. Durable pavement marking products will be replaced by LET Contracts.

Measured Reflectivity

1. Markings no longer meeting minimum retroreflectivity *should* be replaced.
2. Every year mobile and/or handheld retroreflectivity readings are taken on state-maintained highways.
3. Durable markings *should* be *scheduled* for replacement when the roadway reaches a retroreflective value of 140. Scheduled replacement is above the minimum retroreflectivity because the retroreflectivity readings are collected from May to September and those readings are used for the next years LET.

Service Life based on Monitored Markings

Due to staffing issues, size of state, and limited window to collect retroreflective readings, Wisconsin will also use the monitored markings service life. Monitored service life will be used to verify the service life based on historical

data and used to replace other markings at the same age, similar traffic volumes and location within the state.

*While retroreflectivity is very important that is not the only performance indicator that will be looked at for replacement of markings.

SPECIAL MARKINGS

Special markings are not covered under Section 3A.03 of the MUTCD. However, WisDOT still feels these markings are important. Arrows, words, symbols, stop lines, yield markings, dotted extensions, railroad crossings, crosswalks, and diagonals *should* be replaced on the same cycle as longline markings. Curb markings, island noses, corrugated median, and chevron gore markings *should* be replaced as needed.