



Certification of Patented or Proprietary Product

By signature of this document, the State official is certifying that in accordance with the requirements of 23 CFR 635.411 (a) (2), this patented or proprietary item is:

- ☐ Essential for synchronization
☒ No equally suitable alternative exists
☐

| Duration | Statewide Application of 3M Wet Reflective Elements |
|--|--|
| <input type="checkbox"/> Project Specific Certification | This certification covers the use of 3M White 70E and Yellow 71E Elements for grooved wet and grooved contrast wet reflective epoxy on conventional and multi lane long lines. |
| <input checked="" type="checkbox"/> Statewide Blanket Certification (5 yrs maximum for blanket) | |
| Specify dates of term: | |
| From: January 1, 2014 To: December 31, 2018 | |
| | FA Project #: |
| | Stewardship: <input type="checkbox"/> Full Oversight <input type="checkbox"/> State Administered |
| | Manufacturer Name and address: |
| | 3M St. Paul Minnesota |

Description of Item(s)/Work:

Wet Reflective Elements- Products covered under this certification will be placed with a modified epoxy binder on let contracts for 4" wide center lines, lane lines and edge lines and 8" wide channelizing lines and extensions. The double drop system of 5.3 pounds of 70E white or 71E yellow 3M wet reflective beads per gallon and Utah Performance bead mixture will be placed into a 60 mils deep grooved slot for concrete and 80 mils slot for asphalt to ensure longevity of the marking from snow plow activity.

Justification:

4" wide wet reflective epoxy as shown below costs up to 4 times, 8" wide wet reflective epoxy up to 6 times, more than standard surface placed epoxy for the same width but offers superior wet night visibility needed for motorist guidance on multi lane and conventional state highways. This cost includes grooving a slot to ensure longevity. Research conducted since 2009 has not found products capable of meeting the minimum WisDOT requirements of 250 mcd(initial) and 80 mcd (after 1 year) based on the ASTM E 2177 test. Lane departure crashes accounted for 25% of all fatal and high severity (K + A) crashes on rural roadway segments in Wisconsin between 2006-2010. Enhanced edge and center line markings such as grooved wet reflective epoxy increases the visibility of pavement markings during wet roadway conditions. The TTI Paper 09-0488, entitled "The Benefits of Pavement Markings: A Renewed Perspective Based on Recent and Ongoing Research" furthers the claim that no studies have evaluated the quantitative safety benefits of wet-reflective markings but a few studies have evaluated wider edge and center line markings.

Average FY 2013 Let Bid Cost in dollars by width and linear feet:

| 4" Epoxy | 8" Epoxy | 4" wet epoxy | 8" wet epoxy | 4" wet cont | 8" wet cont. |
|----------|----------|--------------|--------------|-------------|--------------|
| 0.25 | 0.55 | 1.05 | 2.67 | 2.15 | n/a |

Supporting/Reference Documentation :

The following is attached to this document:

2013Certification2.docx draft 11/18/13

Reference- Wet Reflective Pavement Marking Demonstration Project. CTRE Final Report November 2011, 3M AW Paint(#5), Table 10.
http://www.intrans.iastate.edu/reports/tr-597_wet_reflective_w_cvr.pdf

| | | |
|---|--|---------------------|
| State DOT Official (signature): <i>William R. McNary</i> | Name and Title: William R. McNary State Traffic Engineer | Date: 12/18/2013 |
|---|--|---------------------|

Note: A copy of the signed Certification must be sent to the FHWA Division Office for their records.