

SPECIAL SPECIFICATION

3099

Warranted Microsurfacing (WMS)

1. **Description.** Furnish and place WMS as shown on the plans. Provide a Contractor’s warranty bond for 2-yr. Use the form provided by the Department.
2. **Materials and Equipment.** Use materials and equipment meeting the requirements of Article 350.2, “Materials,” and Article 350.3, “Equipment,” except furnish mineral aggregate with a surface aggregate classification of “A.”
3. **Construction.**
 - A. **General.** Produce, transport, and place WMS in accordance with Article 350.4, “Construction.”

Initial Performance Requirements. Meet Article 4, “Performance Requirements,” initially, after installation. After construction is complete, the Engineer will conduct a visual evaluation. The Engineer may use the visual evaluation as the basis for written acceptance. If required, for WMS that do not appear to meet the performance requirements, the Department will conduct an initial performance evaluation for any performance requirement in question according to Section 4.B, “Performance Evaluation Procedures.”

For WMS not meeting performance requirements, repair or replace until re-evaluation shows the WMS meet the performance requirements.

- B. **Written Acceptance.** The Department will provide written acceptance after the Contractor meets the initial performance requirements. This written acceptance (see attached sample form) will include the project information, location, length, and acceptance date of WMS.
4. **Performance Requirements.**
 - A. **Performance Characteristic Requirements.** Meet the WMS performance requirements in Table 1 for each lane-width, 0.1-mi. segment of WMS applied in the Contract.

Table 1

Performance Characteristic	Requirement¹
Flushing, %, max	5
Skid Resistance, SN50S, avg, min	25
Delamination, %, max	2

Weathering/Raveling, %, max	5
Rutting, in., max ²	3/8

1. These requirements are derived from industry performance standards and not from any safety requirements.

2. The Department will exclude from the warranty provisions pavement segments where the rut depth of the underlying pavement exceeded 1 in. The locations must be established by agreement before performing work.

B. Performance Evaluation Procedures. The Department will conduct performance evaluations for each lane-width, 0.1-mi. segment of the completed WMS. The Contractor may be present during these evaluations.

1. **Flushing.** The Engineer will visually evaluate segments for excess asphalt binder on the WMS that creates a shiny, reflective condition that becomes tacky to the touch at higher temperatures. The Engineer will determine the percentage of flushed surface area based on the area of the segment.
2. **Skid Resistance.** The Department will evaluate each segment for skid resistance according to ASTM E 274, SN50S [50 mph]. The Department will report the average SN50S of a test location unless shorter sections are needed to address site-specific conditions.
3. **Delamination.** Delamination describes areas where the microsurfacing has debonded from the underlying pavement surface where the WMS layer is still present or where the WMS layer is missing. The Engineer will visually evaluate segments for delamination and will determine the percentage of delaminated surface area based on the area of the segment.
4. **Weathering/Raveling.** Weathering and raveling describes the wearing away of the microsurfacing from the underlying pavement surface course, caused by the dislodging of aggregate particles (raveling) and loss of asphalt binder (weathering). The Engineer will visually evaluate each segment and determine the percentage of weathered/raveled surface area based on the area of the segment.
5. **Rutting.** The Engineer will place a 10 ft. straightedge across the lane width and perpendicular to the flow of traffic and measure rutting as the greatest perpendicular distance measured from the pavement surface to the bottom of the straightedge.

5. **Contractor's Warranty Period.** The Contractor must provide a warranty bond using the Department-approved form, titled 'Contractor's Warranty Bond.' for the full bid price of WMS and traffic control, markings, and markers required for the WMS.

The Contractor's warranty period is for 2 yr. and starts the day after written acceptance of each separate project location. The Contractor is responsible for meeting Article 4, "Performance Requirements," for the duration of the warranty period.

During the warranty period, the Engineer will conduct periodic visual performance evaluations of WMS. The Contractor may be present during these evaluations. The Engineer may use Pavement Management Information System evaluations to monitor skid resistance and may conduct supplemental testing. For areas, which, in the opinion of the Engineer, have a questionable visual evaluation, the Contractor may replace the WMS or the Department will conduct a formal performance evaluation for the performance requirement in question in accordance with Section 4.B, "Performance Evaluation Procedures."

Replace WMS that fails to meet the performance requirements during the warranty period and within 30 days after notification following the procedures in Article 3, "Construction." All replacement WMS must meet the performance requirements in Article 4, "Performance Requirements." The end of the warranty period does not relieve the Contractor from the performance deficiencies requiring corrective action identified during the warranty period.

The Engineer may exclude WMS from the replacement provisions of the warranty period, provided the Engineer determines that the failure is a result of outside causes rather than defective material or workmanship. Examples of outside causes are damage by snow or ice removal and premature underlying pavement failure.

Provide a contact name, address, and phone number for notification of needed WMS corrective action. Perform corrective action in accordance with the original Contract, including traffic control, markings, and markers unless otherwise directed.

6. **Measurement.** WMS will be measured by the ton of the composite WMS mixture. The composite WMS mixture is defined as the asphalt emulsion, aggregate, and mineral filler.
 - A. **Asphalt Emulsion.** The quantity of polymer-modified asphalt emulsion in the accepted portion of work will be measured by the ton of material based on the accepted load tickets issued from the manufacturer. At the completion of the project, any unused emulsion will be weighed back and deducted from the accepted asphalt emulsion quantity delivered.
 - B. **Aggregate and Mineral Filler.** The quantity of aggregate used in the accepted portion of work will be measured by net ticket weight of each individual load of aggregate based on dry weight of aggregate. Weigh the aggregate at the project stockpile site unless otherwise approved. Use either a suspended hopper scale or a belt scale meeting the requirements of Item 520, "Weighing and Measuring Equipment." The calculated weight of mineral filler based on the accepted portion of work will be used for measurement and included in the total aggregate weight.
7. **Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Warranted Microsurfacing." This price is full compensation for preparing the existing surface (including removing existing raised pavement markers); furnishing, hauling, preparing, and placing materials; and equipment, labor, tools, and incidentals. Warranty work and corrective actions will not be paid for directly but will be subsidiary to the original Contract.

CONTRACTOR'S WARRANTY BOND	CONTRACT NO.	
	COUNTY	
	BOND NO	

KNOW ALL PERSONS BY THESE PRESENTS: That we, _____, an installing contractor of warranted microsurfacing, as Principal, and _____, as Surety, are held and firmly bound unto the State of Texas, as Oblige, in the penal sum of _____ Dollars \$ _____, lawful money of the United States, well and truly to be paid to the State of Texas, and we bind ourselves, our heirs, successors, executors, and administrators jointly and severally, firmly by these presents.

Whereas, the above bounden Principal has provided warranted microsurfacing to _____ for the foregoing contract entered into between _____ and the Oblige, attached hereto; and

Whereas, the Principal is required to protect the Oblige against any defects resulting from faulty warranted microsurfacing installed under said contract for a period of 2 years beginning the day after written acceptance.

Now, therefore, the condition of this obligation is such that if the above bounden principal, its heirs, successors, executors, and administrators shall promptly and faithfully carry out and perform the warranty as provided in said contract, and shall, within thirty days of due notice, replace any installed warranted microsurfacing that may fail to meet Oblige's performance evaluation as provided for in the Contract during the period specified above or shall pay over, make good, and reimburse to the said Oblige all loss and damage that said Oblige may sustain by reason of failure or default of said Principal so to do, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

Provided further that the end of a warranty period shall not relieve Principal from its obligation to correct deficiencies requiring corrective action, so long as those deficiencies are identified during the warranty period.

WITNESS our hand this ____ day of _____ 20 ____ .

(Company Name)

****SURETY** (Print Firm Name and Seal)
By: _____
(Title)

* By: _____
(Company Officer)
* By: _____
(Company Officer)

****SURETY** (Print Firm Name and Seal)
By: _____
(Title)

****SURETY** (Print Firm Name and Seal)
By: _____
(Title)

Note:
* Attach a Power of Attorney showing that the officer of the installing contractor has authority to sign this obligation.
** Attach a Power of Attorney showing that the surety officer or Attorney-In-Fact has authority to sign this obligation; the Power of Attorney and bond must be impressed with the corporate seal. The surety must be a US Treasury listed company and provide notification information.