



SAMPLE SPECIFICATION

HOT-IN-PLACE RECYCLING BY THE HEATER SCARIFICATION METHOD

Description: This work shall consist of rehabilitating an asphalt pavement by heating, rejuvenating, scarifying and compacting the existing pavement.

Procedure: The entire surface to be rehabilitated shall be cleaned of water, earth and foreign material. All base failures shall be repaired in accordance with local specifications and paid for separately. Rehabilitation work shall be performed only when the air temperature in the shade is at least 45°F. and the forecast is for rising temperatures.

Utilizing a one-pass, continuous process, the surface of the existing pavement shall be heated, rejuvenated and scarified to a one inch nominal depth (Note 1) with the surface temperature of the old pavement not to exceed 375°F. Heat shall be applied under an enclosed or shielded hood and shall extend at least four inches beyond the width of scarification on both sides. Scarifying shall be accomplished with pressure scarifiers. The scarifying unit shall be equipped to scarify and move material away from the gutter flags for a depth of 1/2 inch by 4 inches wide. The heating-scarifying operation shall not exceed 30 feet per minute. When a repaving pass is being made adjacent to a previously placed mat, the longitudinal repaving seam shall extend at least two inches into the previously placed mat.

NOTE 1: The depth of scarification will be determined by scraping out and weighing the heated and scarified material from a one square foot area. This weight shall be 75% of the theoretical weight of one square foot by 1" of compacted bituminous surface course. Total equipment length of the pre-heater and heater-scarifier shall not exceed 115 feet.

Immediately before the scarifying operation, an approved asphalt modifier shall be applied at the approximate rate of 0.10 gallon per square yard. The engineer may waive or adjust the requirement for the asphalt modifier if the existing pavement condition warrants this action. The surface shall then be leveled by distributing the heated, scarified and treated (HST) material over the width being processed, so as to produce a uniform cross section. The minimum temperature of the HST material after leveling shall be 175°F. The HST material shall be compacted before the temperature of the mix drops below 150°F.

Compaction shall be accomplished with an 8 to 10-ton steel wheel roller in static mode. The roller shall be equipped with an adequate scraping or cleaning device on each wheel to prevent the accumulation of material on the wheels. When used for the compaction of bituminous mixtures, the roller shall be equipped with a water system, which will keep all wheels uniformly wet to prevent material pickup when required.

Method of Measurement: The heat-scarifying process will be measured in place and the area computed in square yards. The asphalt modifier will be measured in gallons. If provided as a payment item, the preparation of the base will be measured in square yards.

Basis of Payment: This work will be paid for at the contract unit price per square yard for HEATER-SCARIFYING, and per gallon for ASPHALT MODIFIER. If provided as a pay item, the preparation of the base (exclusive of additional material required) will be paid for at the contract unit price per square yard for PREPARATION OF BASE.



SAMPLE SPECIFICATION

EMULSIFIED REJUVENATING SEAL

Specification Designation	Test Method	Requirement Min.-Max.
Test on Emulsion Viscosity S.F., at 77°F, Sec.	ASTM D-244	15-40
Residue, % W	ASTM D-244 (Mod A)	60-65
Sieve Test, % Max.	ASTM D-244 (Mod B)	0.10
Particle Charge Test	ASTM D-244	Positive
Tests on Residue from Distillation	ASTM D-244 (Mod C)	
Viscosity cst, 60°C	ASTM D-445	100-200
Asphaltenes, % W,MAX.	ASTM D-2006-70	1.0
Maltenes Dist. Ratio $\frac{PC + A1}{S + A2}$	ASTM D-2006-70	0.3-0.6

- (a) ASTM D-244 Modified Evaporation Test for percent of residue is made by heating a 50 gram sample to 300°F until foaming ceases, then cooled immediately and calculate results.
- (a) Test procedure identical with ASTM D-244 except that distilled water shall be used in place of 2% sodium oleate solution.
- (a) In the Maltenes Distribution Ratio Test by ASTM Method D-2006–70:
 - PC – Polar Compounds
 - A1 – First Acidaffins
 - A2 – Second Acidaffins
 - S – Saturated Hydrocarbons

HEATER SCARIFICATION

Description: Heater Scarification is a rehabilitation process that restores cracked, brittle and irregular pavement in preparation for a final thin wearing course as selected by the awarding authority.

Application: Roadways that possess a stable and structurally adequate base are appropriate candidates for this process. The depth and nature of the existing materials must be evaluated prior to construction.



Two machines operating in tandem insure deep heating and softening of the aged pavement.



The recycled material levels the previously deformed surface in preparation for an overlay or seal coat.



Application of rejuvenating agent improves the viscosity of the aged asphalt.



Multiple rows of spring loaded scarifiers penetrate the softened asphalt to the desired depth.



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Your existing roadway is worth more today than what it cost originally—don't you wish all of your assets behaved this way? Give us a call at Gallagher and we'll explain how Hot-in-Place Recycling can extend your resurfacing budget by completely rejuvenating your old roadway surfaces to good-as-new condition.

We'll show you how to dramatically reduce both maintenance and reconstruction costs, and do your part to help protect the environment. Hot-in-Place Recycling technology consumes approximately 30% to 35% less energy than conventional methodology and with less trucking and milling involved, it's a very green process.

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Your existing aggregates sat in a quarry for thousands and thousands of years... there's plenty more life in them. Call Gallagher and we'll show you how to make the most of what you already own.

Gallagher Asphalt Corporation is one of the oldest and largest asphalt producers in the State of Illinois. We've been building roads for over 80 years and recycling them for 25. We have what it takes to help you.

