

ITEM - HOT IN-PLACE RECYCLE – Repave Process**Description:**

This work shall consist of rehabilitating the existing surface layer of pavement. Rehabilitation shall be done with specially designed equipment that removes and recycles the surface layer; adds recycling agent and new bituminous pavement material; and places all the materials to form a new surface layer; all in one continuous operation. The work shall include compacting the rehabilitated surface. The rehabilitated layer shall conform to the lines, grades, thickness and typical cross section shown on the plans or established. **Note:** This work shall be performed with a single machine that heats, scarifies, recycles, and spreads virgin material all in one continuous pass. Additional pre-heaters may be utilized to achieve specified depth and temperature.

Materials:

Emulsified Recycling Agent shall conform to the requirements of Section 1005.

New hot bituminous pavement shall conform to Section *.

Bituminous Materials shall conform to Section 1005.

Asphaltic Concrete Mix Design Criteria:

Mix designs shall be developed by the contractor. Any cores required to determine the recycled job mix formula are the responsibility of the contractor.

Equipment:

The Contractor shall specify, at the preconstruction conference, the type of equipment he intends to use. The equipment shall be on the project in operating condition in sufficient time before beginning operations to allow the Engineer time to evaluate it. The Engineer reserves the right to reject equipment he feels is unsuitable for the intended purpose.

Repaver Equipment. The equipment for this work shall be a self-contained, self-propelled, automated unit capable of heating, scarifying (or milling), mixing, redistributing and leveling the existing asphalt pavement to the specified depth, all in one pass. It shall have means of automatically applying an emulsified asphalt recycling agent at a uniform rate as shown on the plans or as directed. It shall be capable of applying a new hot bituminous pavement layer over the hot, partially compacted recycled mixture.

Principal components of the equipment shall conform to the following:

Heating Unit. This unit shall be hooded to prevent damage to adjacent plant growth. It shall be capable of heating the pavement surface to a temperature high enough to allow scarification to the required depth without breaking aggregate particles or charring the pavement.

Scarifying or Milling Units. The scarifiers or rotary millers shall be able to penetrate the pavement surface to the depth shown on the plans in one pass. Scarifiers or millers shall be equipped with separate, automatic height adjustments that will allow clearance over manholes and other obstructions.

Recycling Agent Applicator. This system shall automatically add recycling agent to the scarified material at a uniform rate as shown on the plans or as directed. The application rate shall be synchronized with the machine's forward speed to maintain a tolerance within 5% of the specified rate.

Add Plant-Mix Unit. This unit shall consist of a receiving hopper and conveying system to collect and transport new hot bituminous pavement material to the finishing unit.

Recycling Unit. This unit shall consist of the following:

A system that mixes, distributes, and levels the scarified material over the width being processed to produce a uniform cross-section of recycled material.

Finishing Unit. This unit shall have automatic screed controls to produce a surface conforming to that shown on the plans. The unit shall be capable of performing the functions of a bituminous paver as described in subsection 401.10. Surface tolerance shall be as specified in subsection 401.20.

Rollers. Rollers shall conform to Section 401 and revisions thereto.

Construction Requirements:

Immediately before pavement recycling begins, the pavement surface shall be broomed or otherwise cleaned to provide a dry surface free from loose particles or other deleterious material.

The Contractor shall be responsible for protecting the area adjacent to the work from heat damage. The Engineer may require the Contractor to furnish fire-fighting equipment at the Contractor's expense.

Weather limitations for work on this item shall be in accordance with the provisions of subsection 409-3.01, unless otherwise directed.

The heating shall be sufficient to soften the pavement to the extent that it can be scarified or milled to the depth specified. Heating shall be done in a manner that will assure uniform softening and will not char the asphalt.

To provide a welded longitudinal joint, the asphalt pavement shall be fully heated to a width at least two inches beyond the width to be scarified and recycled. On the next pass paralleling the first, the recycling shall overlap the previously recycled mat by two inches.

Immediately following heating, the pavement surface shall be scarified (or milled) to the specified depth. The removed material shall have a temperature between 225°F and 265°F, unless otherwise directed. The material shall be treated with a recycling agent, mixed, and leveled. The application rate shall be as shown in the mix design or as directed.

New hot bituminous pavement material shall be added to the reclaimed mixture by the following method:

The reclaimed material shall be gathered by a leveling device and spread to a uniform depth over the width being processed. After it is placed, and while it still has a residual temperature of at least 190°F, a layer of new hot bituminous pavement material conforming to the job-mix formula shall be placed over it. The application rate of new material shall be sufficient to provide the required pavement thickness.

Compaction shall be in accordance with subsection 409-3.02.

Due to the varying properties of the existing asphalt pavement, the following adjustments shall be made if required and as directed:

- (a) Depth of scarification may be varied.
- (b) Application rate for recycling agent or other asphaltic material may be adjusted as necessary to maintain a uniform mixture.
- (c) Application rate for new hot bituminous pavement (* lbs. per SY) may be adjusted to maintain the design depth of combined recycled and new hot bituminous pavement.

Acceptance:

Hot-in-place Recycle and asphaltic concrete will be accepted complete in place, if, in the judgment of the Engineer, it reasonably conforms to the requirements specified herein. Material that is not acceptable and is rejected shall be replaced to the satisfaction of the Engineer and at no expense to the Department.

Method of Measurement:

Hot-in-place Recycling and repaving treatment will be measured by the square yard completed and accepted.

Basis of Payment:

The accepted quantities of hot-in-place recycling and repaving treatment will be paid at the contract unit price per square yard. Payment shall include cleaning the existing pavement surface, and heating, scarifying, redistributing, re-leveling and compacting bituminous pavement.

New hot bituminous pavement material will be measured and paid for in accordance with Section *.

Asphalt recycling agent and other bituminous materials not included in the new hot bituminous pavement material will be measured and paid for by the Ton.

DESIGNER:

* To be supplied by the Bituminous Engineer.