

612-R-611 UNDERSEALING

(Revised 05-23-13)

The Standard Specifications are revised as follows:

SECTION 612, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 612 – UNDERSEALING

612.01 Description

This work shall consist of *drilling holes and* furnishing and pumping an asphalt material under cement concrete pavement in accordance with 105.03.

MATERIALS

612.02 Materials

Asphalt material shall be in accordance with the following:

Utility asphalt, ~~UA-II or UA-III shall be in accordance with~~902.01(d)

CONSTRUCTION REQUIREMENTS

612.03 Weather Limitations

Undersealing shall not be performed when pavement surface temperatures are below 40°F, or when the subgrade or subbase is frozen. If proper undersealing cannot be achieved due to excessive temperatures or direct sunlight, work shall be performed at night.

612.0304 Shoulders

All holes, low areas, or displaced areas in the shoulders immediately adjacent to the pavement edge shall be filled with loam, clay, or other approved material and compacted to the elevation of the pavement. Such areas, including all other shoulder areas immediately adjacent to the pavement edge, shall be compacted with a roller or another approved method.

612.0405 Drilled Holes

Where the existing pavement has transverse joints, holes not to exceed 1 1/2 in. in diameter shall be drilled on the centerlines of the pavement lane to be treated. Such holes, unless otherwise directed, shall be located longitudinally between transverse joints or cracks at approximately 30 to 36 in. from the joints or cracks. Intermediate holes, if necessary, shall be spaced as directed.

If the existing pavement does not have transverse joints, holes not to exceed 1 1/2 in. in diameter shall, unless otherwise specified, be located on the centerline of the pavement lane to be treated and be spaced as directed.

An approved method shall be used to prevent the drill from entering the subgrade after penetrating the pavement. Automatic stops on mechanical equipment and marked

drill bits on hand operated jackhammers may be approved subject to satisfactory operation.

Just prior to pumping operations, the surface of the pavement around each hole for an area of at least 1/2 the width of the lane being treated shall be thoroughly sprinkled with water to prevent the undersealing material from adhering to the pavement surface.

612.0506 Pumping Asphalt

All storage tanks, pipes, retorts, booster tanks, and distributors used for storing or handling the materials shall be kept clean and in good operating condition at all times so there is no contamination of the materials.

Where undersealing operations are being performed under traffic, necessary signs, barricades, watchers, and flaggers shall be used to maintain one lane of traffic in the immediate vicinity of pumping operations. Traffic may be permitted to use the pumped areas upon removal of the original plugs and after the hardwood plugs are driven.

When directed, certain portions may be required to be undersealed a second time. The number of holes involved in this second undersealing shall not exceed 5% of the number of holes indicated in the Schedule of Pay Items.

(a) Asphalt Material

~~After the above procedure is complete, the~~ The asphalt shall then be pumped through the drilled holes and under the pavement with an approved type of self-propelled pressure distributor, the pressure to be as directed. A metallic hose shall connect the asphalt tank through an asphalt pump to a 1 in. nozzle and a return metallic hose shall connect the nozzle to the asphalt distributor tank.

The nozzle shall be equipped with a 3-way valve ~~so designed~~ that permits the asphalt ~~may~~ to circulate back to the distributor tank when pumping operations are not in progress. The nozzle shall be inserted in the hole, driven to a snug fit, and pumping of the asphalt continued until the undersealing is complete, or to such other amount as directed. In case of an existing asphalt resurface on concrete, holes shall be drilled through the resurface and the underlying concrete and the nozzle shall be of sufficient length that it can be driven to a snug fit into the concrete without the upper part of the nozzle being below the elevation of the existing asphalt resurface. ~~Upon completion of the pumping operation, the nozzle shall be removed and a wood plug driven into the hole without an excessive back flow of asphalt material. After the material has hardened, the plug shall be removed and a hardwood plug at least 3 in. long and a minimum of 1/16 in. larger than the diameter of the drilled hole shall be driven flush with the surface of the concrete pavement. All material extruded during the pumping operations shall be immediately cleaned from the pavement surface and removed from the limits of the contract within a period of 24 h.~~

~~Where undersealing operations are being performed under traffic, necessary signs, barricades, watchers, and flaggers shall be used to maintain one lane traffic in the~~

~~immediate vicinity of pumping operations. Traffic may be allowed to use the pumped areas upon removal of the original plugs and after the hardwood plugs are driven.~~

~~All storage tanks, pipes, retorts, booster tanks, and distributors used for storing or handling the asphalt materials shall be kept clean and in good operating condition at all times so there is no contamination of the materials.~~

The asphalt shall not be heated above 500°F at any time and, when pumped under the pavement, the temperature shall be no less than 350°F. All material heated beyond 500°F shall be rejected.

~~No material shall be applied on a frozen subgrade nor when the atmospheric temperature is 40°F or lower and falling. The asphalt shall be placed only when general weather conditions are suitable.~~

~~When directed, certain portions may be required to be undersealed a second time. The number of holes involved in this second undersealing shall not exceed 5% of the number of holes indicated in the Schedule of Pay Items.~~

(b) Wood Plugs

Upon completion of the pumping operation, the nozzle shall be removed and a wood plug driven into the hole. After the pumped material has hardened, the original plug shall be removed and a 4 in. or longer hardwood plug a minimum of 1/16 in. larger than the diameter of the drilled hole shall be driven flush with the surface of the pavement. All material extruded during the pumping operations shall be immediately cleaned from the pavement surface and removed from the limits of the contract within a period of 24 h.

The hardwood plugs shall be inspected after any milling operation in the case where a resurface exists on the concrete. Damaged or missing plugs shall be replaced prior to overlaying with a new surface.

612.0607 Method of Measurement

Asphalt material will be measured by the ton

Drilled holes for underseal will be measured per each hole drilled.

612.0708 Basis of Payment

This work will be paid for at the contract unit price per ton for asphalt material for underseal. Drilled holes for underseal will be paid for at the contract unit price per each, complete in place.

Additional holes and materials required for a second undersealing operation will be paid for at the contract unit prices for the quantities involved.

Payment will be made under:

Pay Item

Pay Unit Symbol

Asphalt Material for Underseal..... TON
Drilled Hole for Underseal.....EACH

The cost of shoulder material, wood and hardwood plugs, and necessary incidentals shall be included in the cost of the pay items.
