

SECTION 341 ASPHALT RUBBER MEMBRANE INTERLAYER

341-1 Description.

Construct an asphalt rubber membrane interlayer composed of a separate application of asphalt rubber binder covered with a single application of aggregate.

341-2 Materials.

341-2.1 Asphalt Rubber Binder: Use ARB-20 meeting the requirements of Section 336.

341-2.2 Cover Material: Use Size No. 6 stone, slag, or gravel meeting the requirements of Section 901.

341-3 Equipment.

341-3.1 Power Broom: Provide a power broom for cleaning the existing pavement capable of removing all loose material from the surface.

341-3.2 Spreading Equipment: Provide a self-propelled aggregate spreader that can be adjusted to accurately apply the cover material at the specified rate and that spreads the material uniformly.

341-3.3 Rollers: Provide self-propelled, pneumatic-tired traffic type rollers equipped with at least seven smooth-tread, low-pressure tires, and capable of carrying a gross load of at least 8 tons [7 metric tons]. Maintain a minimum tire inflation pressure of 90 psi [600 kPa] such that in no two tires the air pressure varies more than 5 psi [35 kPa]. Load the traffic roller as directed by the Engineer.

341-3.4 Mixing Equipment: Use mixing equipment for asphalt rubber binder designed for that purpose and capable of producing and maintaining a homogeneous mixture of rubber and asphalt cement at the specified temperature.

341-3.5 Pressure Distributor: Use a pressure type distributor to apply asphalt rubber binder capable of maintaining a homogeneous mixture of rubber and asphalt cement at the specified temperature and consistently apply the material in a uniform manner.

341-4 Preparation of Asphalt Rubber Binder.

Combine the materials as rapidly as possible for such a time and at such a temperature that the consistency of the binder approaches that of a semi-fluid material. Use the time and temperature for blending of the asphalt rubber binder as specified in Table 336-1. The Engineer will be the sole judge of when the material has reached application consistency and will determine if an extender oil or diluent is needed for that purpose. After reaching the proper consistency, proceed with application immediately. Never hold the mixture at temperatures over 350°F [175°C] for more than six hours after reaching that point.

341-5 Construction Procedure.

341-5.1 Preparation of Surface: Prior to application of the asphalt rubber binder, clean the existing pavement as specified in 300-4.

341-5.2 Application of Asphalt Rubber Binder: Apply the asphalt rubber binder only under the following conditions:

- a. The air temperature is above 50°F [10°C] and rising.
- b. The pavement is absolutely dry.
- c. The wind conditions are such that cooling of the asphalt rubber binder will not be so rapid as to prevent good bonding of the aggregate.

Uniformly apply the asphalt rubber binder, at the rate of 0.6 to 0.8 gal/yd² [2.7 to 3.6 L/m²] as directed by the Engineer. Use an application rate based on the unit weight as shown in Table 336-1. For conversions to standard 60°F [15°C], refer to 300-8.3.

341-5.3 Application of Cover Material: Immediately after application of the asphalt rubber binder, uniformly spread cover material at a rate of 0.26 to 0.33 ft³/yd² [0.0088 to 0.0112 m³/m²]. The Engineer will set the exact rate. For the cover material, use aggregate that is reasonably free of any adherent coatings and that does not contain excessive moisture. Immediately after the application of cover material, check the surface to ensure a uniform distribution of cover material and a smooth surface.

Do not separate the application of the asphalt rubber binder and the application of the cover material by more than 300 feet [90 m].

341-5.4 Rolling: In order to ensure maximum embedment of the aggregate, cover the entire width of the mat immediately by traffic rollers. For the first coverage, provide a minimum of three traffic rollers in order to accomplish simultaneous rolling in echelon of the entire width of the spread.

After initial rolling, immediately correct all portions of the completed surface, that the Engineer deems are defective (not properly covered by aggregates, fat spots, excessive free aggregate, etc.).

Following the first coverage, make additional coverages with traffic rollers as directed by the Engineer.

341-5.5 Traffic Control: For the normal sequence of construction operations, place the first course of asphalt concrete overlay over the membrane prior to opening to traffic.

341-6 Unacceptable Asphalt Rubber Membrane Interlayer.

If the asphalt rubber membrane interlayer is unacceptable due to incorrect blending, application rate, or not meeting the requirements of this Section, or damaged prior to placement of the asphaltic concrete layer, remove and replace it as directed by the Engineer. Do not apply excessive amounts of asphalt rubber binder.

341-7 Placement of Asphalt Concrete Overlay.

Ensure that the thickness and temperature of the initial layer of asphalt concrete placed on top of the asphalt rubber membrane interlayer are such that the overlay bonds to the interlayer and the underlying layer without voids or excessive binder. Core the asphalt overlay as directed by the Engineer to evaluate the binder and aggregate spread rates, as well as the effectiveness of the asphalt concrete overlay in producing a well-bonded interlayer.

341-8 Method of Measurement.

341-8.1 Asphalt Rubber Membrane Interlayer: The quantity to be paid for will be the area, in square yards [square meters], completed and accepted.

341-8.2 Bituminous Material (Asphalt Rubber Binder-Interlayer): The quantity to be paid for will be the volume, in gallons [liters], determined as provided in 300-8.

341-9 Basis of Payment.

341-9.1 Asphalt Rubber Membrane Interlayer: Price and payment will be full compensation for all work specified in this Section, including furnishing cover materials, handling, spreading, rolling, and other incidental work necessary to complete this item.

341-9.2 Bituminous Material (Asphalt Rubber Binder-Interlayer): Price and payment will be full compensation for furnishing asphalt cement, ground tire rubber, and blending and handling.

341-9.3 Payment Items: Payment will be made under:

Item No. 341- 70-	Asphalt Rubber Membrane Interlayer - per square yard.
Item No. 2341- 70-	Asphalt Rubber Membrane Interlayer - per square meter.
Item No. 300- 1-19-	Bituminous Material (Asphalt Rubber Binder-Interlayer) - per gallon.
Item No. 2300- 1-19-	Bituminous Material (Asphalt Rubber Binder-Interlayer) - per liter.

