

**OKLAHOMA DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISIONS  
FOR  
Repair and Overlay Of Concrete Bridge Decks**

These Special Provisions revise, amend, and where in conflict, supersede applicable subsections of Section 505 of the Standard Specifications for Highway Construction, Edition of 1999.

*(Add the Following:)*

**505.01. Description.**

- (c) **waterproofing Membranes.** Waterproofing Consists of the Placement of a Waterproofing Membrane And, When Called for on the Plans, the Placement of Strip Membrane over the Construction Joints.

Note: The waterproof membrane in this specification is not compatible with superpave. The temperatures from superpave overlays are too hot for woven polypropylene membranes.

**505.02. Materials.**

- (a) provide Waterproof Membranes with a Woven Polypropylene Using Rubberized Asphalt as the Waterproofing Agent. Provide Waterproofing Membranes with the Following Properties:

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Tensile (Mesh)	ASTM D882 (Modified)	50 lb/in., (8.8 kN/m), min.
Puncture Resistance	ASTM E 154	200 pounds (900 N), min.
Permeance (Perms)	ASTM E 96(B)	0.1 maximum
Pliability*	ASTM D 146	No Cracks
Thickness		65 mils (1.65 mm)

\* 1/4 in. (6.35 mm) mandrel 180° bend at -15°F (-26°C)

- (b) When called for on the plans, provide strip membranes in 12 in. (305 mm) wide strips meeting the following specifications:

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>VALUE</u>
Density	ASTM E 12-70	80 lb/ft <sup>3</sup> (1300 kg/m <sup>3</sup> )
Weight		0.9 lb/ft <sup>2</sup> (4.4 kg/m <sup>2</sup> )
Thickness	ASTM D 1777	0.135 in. (3.4 mm)
Rating 95% after loading		
Absorption	ASTM D 517	1% max
Brittleness	ASTM D 517	Pass
Softening Point (Mastic)	ASTM D 36	200°F (93°C), minimum
Cold Flex	(*)	No cracking or separation
Heat Stability	(**)	No dripping or delamination

Flammability	Federal FMVSS 302	Self Extinguishing
Percent Elongation	ASTM D 882 Mod. (***)	100%
Tensile Strength	ASTM D 882 Mod. (***)	1150 lb/in <sup>2</sup> (8000 kPa)
(*)	2 in.(50mm) × 5 in.(125mm) Specimen, 180°F (82°C) bend on 2 in. (50 mm) mandrel at 0°F (-18°C)	
(**)	2 in.(50mm) × 5 in.(125mm) Specimen, hung vertically in mechanical convection oven for 2 hours at 190°F (88°C)	
(***)	Using 12 in. (305 mm)/minute test speed and 1 in. (25 mm) initial distance between grips	

Approved waterproofing membranes include the following:

**1) CCW-711 Pre-pave Sheet Membrane Waterproofing System**

Carlisle Coatings & Waterproofing Incorporated  
8810 West 100<sup>th</sup> Street South  
P. O. Box 1600  
Sapulpa, OK 74067  
Phone: 800-338-8701  
918-227-4533

**2) Polyguard 665 Membrane**

SSI  
P.O. Box 50009  
Tulsa, OK 74150  
Phone: 800-888-8909  
918-587-5567

**3) “Sealtight” Mel-deck Waterproofing Membrane**

W. R. Meadows of Texas  
2555 N.E. 33rd Street  
P. O. Box 7752  
Fort Worth, Texas 76111  
Phone: 800-342-5976

**4) LINQ TAC 711**

LINQ Industrial Fabrics, Inc.  
2550 West Fifth North St.  
Summerville, S. C. 29483  
Phone: 800-445-4675  
843-875-8278

Approved **strip membrane** manufacturers include the following:

**(1) Paveprep, Contech Construction Products, Inc. Phone: 405-842-6349**

**(2) Pro-guard, Atlantic Construction Fabrics, Inc. Phone: 800-448-3636**

- (c) Certification. Furnish a type “A” certification for each shipment of the waterproofing membrane or strip membrane as described in Subsection 106.04 of the 1999 Standard Specifications for Highway Construction.

**505.04. CONSTRUCTION METHODS.**

- (j) Place the waterproof membrane as shown in the plans, in accordance with the manufacturer's specifications, instructions, and provisions. Restrict temperatures for membrane placement to 50°F(10° C) or higher. Provide surfaces that are free of dust, debris, surface moisture, sharp edges, and vegetation. Unless otherwise shown on the plans, extend the membrane 10ft (3 m) beyond each end of the bridge onto the approaches. When called for on the plans, place the strip membrane over each deck construction joint. Place tack coats before/after the membrane is placed as recommended by the manufacturer. Use tack coats which are compatible with the membranes chosen. **Seal the curb lines of the water proofing membrane using a method of treatment as directed by the manufacturer.** Unless otherwise directed by the manufacturer, roll the waterproofing membrane with a pneumatic roller.

**NOTE: Provide a technical representative from the waterproofing membrane manufacturer and, when appropriate, provide a technical representative from the strip membrane manufacturer at the start of work.**

Prior to the start of work, provide to the Engineer a work plan which is approved by the Manufacturer and which addresses the following:

1. Type of membrane and tack that will be used for the project.
2. Method of deck preparation including how the pot holes will be repaired.
3. Limitations of deck temperature and moisture content and how they will be measured.
4. Length of time the membrane can be exposed and if traffic will be allowed to drive on it.
5. The maximum temperature for the overlay pavement.
6. Proposed construction sequence and time line.
7. How the curb line and deck drains will be sealed.

**505.05. METHOD OF MEASUREMENT.** The waterproofing membrane measured for payment shall be the actual number of square yards(square meters) measured after placement. The strip membrane and the tack coats will not be measured for payment.

**505.06 BASIS OF PAYMENT.** Waterproofing membrane as measured above shall be paid for at the contract unit price for

MEMBRANE.....SQUARE YARDS (SQUARE METERS)

The cost of the labor, incidentals, materials (**including strip membrane and tack coats**), and their placement shall be included in the price bid for "Membrane."