932 NONMETALLIC ACCESSORY MATERIALS FOR CONCRETE PAVEMENT AND CONCRETE STRUCTURES.

(REV 12-3-13) (FA 1-24-14) (7-14)

SUBARTICLE 932-1.3.1 is deleted and the following substituted:

932-1.3.1 Low Modulus Silicone Sealants: Silicone sealant shall be furnished in a one part or pre-measured two part formulation meeting the requirements specified herein.

Acetic acid cure sealants are not acceptable. A primer as specified in 932-1.4 for bonding sealant to concrete shall be used if required by the manufacturer. When a manufacturer's product is tested and approved by the Department using a primer, primer will be required for project installation.

Do not use Low Modulus Silicone Sealants Types A, B or C for bridge expansion joints.

Silicones shall be identified in the following manner:

Type A - A low modulus, non-sag (non-self-leveling) silicone formulation, used in sealing horizontal and vertical joints in cement concrete pavements and bridges (i.e., concrete-concrete joints). Tooling is required.

Type B - A very low modulus, self-leveling silicone formulation, used in sealing horizontal joints (including joints on moderate slopes) in cement concrete pavements and bridges (i.e., concrete-concrete joints). Tooling is not normally required.

Type C - An ultra-low modulus, self-leveling silicone formulation, used in sealing horizontal joints (including joints on moderate slopes) in cement concrete pavements and bridges (i.e., concrete-concrete joints). It can also be used to seal the joints between cement concrete pavements and asphalt concrete shoulders (including asphalt-asphalt joints). Tooling is not normally required.

Type D - An ultra-low modulus, self-leveling silicone formulation, cold-applied, rapid-cure, used to seal expansion joints that experience both thermal and/or vertical movements. The material must cure by chemical reaction and not by evaporation of solvent or fluxing of harder particles. Tooling shall not be required. Use according to Design Standards, Index No. 21110 for bridge deck expansion joints with backer rods or as shown in the Plans for other joints with or without backer rods.

SUBARTICLE 932-1.3.2 is deleted and the following substituted:

932-1.3.2 Physical Requirements:

Silicone Sealant Type	Test Method	Type A	Type B	Type C	Type D
Flow	ASTM d5893	No Flow			
Slump (maximum)	ASTM d2202	0.3 inches			
Extrusion	ASTM C1183,	20 ml/min	20 ml/min	20 ml/min	20 ml/min

Silicone Sealant Type	Test Method	Type A	Type B	Type C	Type D
rate (minimum)	Procedure A				
Tack-free time at 77 ± 3ºF and 45 to 55% Relative Humidity	ASTM C679	90 minutes maximum	180 minutes, maximum	60 minutes, maximum	30 – 60 minutes
Specific gravity	ASTM D792, Method A	1.1 to 1.515	1.10 to 1.40	1.26 to 1.34	1.26 to 1.34
Durometer hardness, Shore A (Cured seven days at 77 ± 3ºF and 50 ± 5% Relative Humidity)	ASTM D2240	10-25			
Durometer hardness, Shore 00 (Cured 21 days at 77 ± 3ºF and 50 ± 5% Relative Humidity)	ASTM D2240		40-80	20-80	
Tensile stress (maximum) at 150% elongation	ASTM D412 (Die C)	45 psi	40 psi	15 psi	
Elongation (Cured seven days at 77 ± 3ºF and 50 ± 5% Relative Humidity)	ASTM D412 (Die C)	800% minimum			600% minimum
Elongation (Cured 21 days at 77 ±	ASTM D412 (Die C)		800% minimum	1400% minimum	

Silicone Sealant Type	Test Method	Type A	Type B	Type C	Type D
3ºF and 50 ± 5% Relative Humidity)					
Ozone and Ultraviolet Resistance	ASTM C793	No chalking, cracking or bond loss after 5,000 hours, minimum.			
Bond to concrete mortar briquets (primed if required) (Cured seven days at 77 ± 3ºF and 50 ± 5% Relative Humidity)	AASHTO T132	50 psi minimum			
Bond to concrete briquets (Cured 21 days at 77 ± 3ºF and 50 ± 5% Relative Humidity)	AASHTO T132		40 psi minimum	35 psi minimum (includes bond to asphalt)	
Movement Capability	ASTM C719	No adhesive or cohesive failure and adhesion, 10 cycles at -50 to +100%			No adhesive or cohesive failure and adhesion, 10 cycles at +100/-50 %

Portland Cement Mortar: Briquettes shall be molded and cured 28 days minimum in accordance with AASHTO T132. Cured briquettes shall be dried at 230°, plus or minus 5ºF, sawed in half and bonded together with a thin section of sealant. After cure of sealant, briquettes shall be tested in accordance with AASHTO T132.

SUBARTICLE 932-2.3 is deleted and the following substituted:

932-2.3 Sampling: A sampling LOT shall consist of a maximum of 100 bearing pads of a single type of bearing (plain, steel laminates, fabric laminates), of the same design, materials, thickness, and manufacturer, referred to here as “like pads”, delivered to the project site or to an offsite storage facility within the State of Florida in reasonable proximity to the project site as determined by the Engineer. Organize stockpiled pads into groups of like pads by LOT so that they can be readily identified and sampled by the Engineer.

932-2.3.1 Ancillary Structure Pads: Sampling is not required and acceptance is by certification.

932-2.3.2 Bridge Structure Pads: For LOT sizes that exceed 10, a minimum of two bridge bearing pads per LOT will be selected by the Engineer, one for testing and one for confirmation in the event of a failing test result. LOTs will be sampled only after all like pads in the LOT are at the project site or in an offsite storage facility. When the total number of like pads consists of a single LOT of 10 or less, sampling is not required and acceptance is by certification. Provide the Engineer a certification conforming to the requirements of Section 6 stating that the structure bearing pads meet the requirements of this Section. Samples shall consist of complete pads as detailed in the Plans. Furnish additional complete bridge bearing pads to replace those selected for testing. Bridge bearing pads shall be available for sampling a minimum of three weeks prior to their installation. The sample bridge bearing pads shall be tested by an independent laboratory approved by the Department.