1026-5 BURLAP

Burlap shall meet AASHTO M 182. Any class of burlap will be acceptable.

Use new burlap or burlap that has been used for no purpose other than curing concrete. New burlap shall be free from starch, filler or other substances added during manufacture, or shall be washed to remove such substances before use.

SECTION 1028
JOINT MATERIALS

1028-1 JOINT FILLER

Provide a nonbituminous type joint filler that meets AASHTO M 153 for Types I, II or III, or a bituminous type that meets AASHTO M 213. Furnish a Type 3 material certification in accordance with Article 106-3 with each lot of the joint material supplied to each project.

1028-2 HOT APPLIED JOINT SEALER

Provide a hot applied joint sealer that conforms to ASTM D6690 and has been evaluated by NTPEP. Furnish a Type 3 material certification in accordance with Article 106-3 for each lot of the joint sealer supplied to each project.

1028-3 LOW MODULUS SILICONE SEALANT

Provide a cold applied, single component, chemically curing low modulus silicone sealant from the Department's approved list on the website and evaluated by NTPEP. Acid cure sealants are not acceptable for use on Portland cement concrete. Bond breakers shall meet Article 1028-4.

(A) Silicone Sealant Types

(1) Type NS

A non-sag silicone for use in sealing horizontal and vertical joints in Portland cement concrete pavements and bridges. Tooling is required.

(2) Type SL

A self-leveling silicone used to seal horizontal joints in Portland cement concrete pavements and bridges. Tooling is not normally required.

(B) Requirements

TABLE 1028-1
PHYSICAL PROPERTIES OF SEALANT

Property	Requirement	Test Method
Peel	Minimum of 20 lb/in of width with at least 75% cohesive failure	ASTM D903 bonded on concrete block
Movement Capability and Adhesion	No adhesive or cohesive failure after 10 cycles of test movements of +100% (extension) and –50% (compression)	ASTM C719

Silicone sealant shall meet the Table 1028-1, ASTM D5893 and shall have been evaluated by NTPEP.

Furnish a Type 3 material certification in accordance with Article 106-3 for each lot of joint sealer material supplied to each project. Deliver each lot of sealant in containers plainly marked with the manufacturer's name or trademark, lot number and date of manufacture.

1028-4 BOND BREAKER

Install silicone sealant over a bond breaker to prevent the sealant from bonding to the bottom of the joint. Use bond breakers that do not stain or adhere to the sealant and are chemically inert and resistant to oils. Furnish a Type 3 material certification in accordance with Article 106-3 for each lot of bond breaker material supplied to each project.

(A) Type L

Type L backer rod is a closed-cell expanded polyethylene foam backer rod. Use this backer rod in roadway and bridge joints and with Type NS silicone only. Use Type L backer rod that complies with Table 1028-2.

(B) Type M

Type M backer rod is a closed-cell polyolefin foam backer rod which has a closed-cell skin over an open cell core. Use this backer rod in roadway and bridge joints with both silicone sealant types. Use Type M backer rod that complies with Table 1028-2.

TABLE 1028-2
PHYSICAL PROPERTIES OF TYPE L AND TYPE M BACKER ROD

Property	Requirement	Test Method
Min. Density	2.0 lb/cf	ASTM D1622
Min. Tensile Strength	25 psi	ASTM D1623
Max. Water Absorbtion	0.5% by volume	ASTM C509

(C) Type N

Provide bond breaking tape made from extruded polyethylene that has a pressure sensitive adhesive on one side. Bond breaking tape may be used with both types of silicone but is suitable for bridge joints only. Bond breaking tapes shall be at least 0.005" in thickness.

SECTION 1032
CULVERT PIPE

1032-1 CORRUGATED METAL CULVERT PIPE

Use corrugated metal culvert pipe from sources on the Department's approved list and that participate in the Department's Brand Registration program for metal culvert pipe available from the website or the Materials and Tests Unit's Central Laboratory. The Department will remove a manufacturer of metal culvert pipe from this program if the monitoring efforts indicated that non-specification material is being provided or test procedures are not being followed.

The following types of steel and aluminum alloy pipe and all associated accessories may be accepted under this program.

(A) Coated corrugated metal culvert pipe and pipe arches,

(B) Coated corrugated metal end sections, coupling band and other accessories,

(C) Corrugated aluminum alloy structural plate pipe and pipe arches,

(D) Corrugated aluminum alloy end sections, coupling band and other accessories, and

(E) Welded steel pipe.

1032-2 CORRUGATED ALUMINUM ALLOY CULVERT PIPE

(A) Corrugated Aluminum Alloy Culvert Pipe

Corrugated aluminum alloy culvert pipe shall meet AASHTO M 196, except that Type IA pipe will not be permitted.