

has attained the required strength. When permission is given to open the pavement to traffic, the covering material shall be removed and the pavement cleaned and swept.

Earth or sand used in this method of curing shall be free of sticks, stones, or other matter which might injure the surface of the concrete. The material shall contain no ingredients which would be detrimental to the concrete or discolor the surface finish.

#### **830.04 Straw.**

Straw used as a supplement to the curing materials noted in Article 830.01 and 830.02 for cold weather protection shall be suitable for the purpose intended and approved each time it is used.

## **SECTION 831 PRECAST CONCRETE PRODUCTS**

#### **831.01 Description.**

All precast concrete products, except precast non-prestressed concrete bridge members, shall be furnished from an approved producer that is participating in, and meeting the requirements given in ALDOT-364. ALDOT 364 is the "Procedure for Inspection of Concrete Pipe, Precast Manholes, Precast Box Culverts, and Miscellaneous Precast Concrete Products".

Producers of precast concrete products shall be shown in List I-8, PRODUCERS OF PRE-CAST CONCRETE PRODUCTS, of the Department's "Materials, Sources, and Devices with Special Acceptance Requirements" Manual. Information concerning this list is given in Subarticle 106.01(f) and ALDOT-355.

## **SECTION 832 CONCRETE JOINT FILLERS, JOINT AND CRACKSEALANTS, AND WATERSTOP MATERIALS**

#### **832.01 Prefomed Joint Filler.**

##### **(a) General.**

Prefomed joint filler units shall be furnished in one piece of the length, thickness, and depth shown on the plans for a complete joint, unless otherwise authorized by the Engineer. When the use of more than one piece is authorized, the abutting ends shall be fastened securely and held accurately in place to correct shape by stapling or other satisfactory means.

When a prefomed filler is used with dowels or other protruding items which must pass through the filler, clean-cut holes, accurately spaced and not more than 1/8 of an inch {3 mm} larger than the protruding item shall be provided.

Damaged filler units shall be rejected.

Joint fillers used in conjunction with expansion joints will require the use of a joint sealer in order to provide a functional joint. Sealants shall be one of the appropriate types specified in Article 832.02 or Subarticle 832.03(a), unless a specific type is specified by the plans.

##### **(b) Filler for Construction Joints in Bridge, Culvert, and Drainage Structures.**

Prefomed bituminous joint filler for general use in bridge, culvert, and drainage structure work shall meet the requirements for one of the following "Types" unless a specific "Type" is required by the detailed plans:

Type 1 - AASHTO M 33

Type 2 - AASHTO M 213, modified to allow a maximum of 25% water absorption.

##### **(c) Expansion Joint Filler.**

Expansion joint filler for concrete pavement, curb, gutter, combination curb and gutter, flumes, slope paving, and other miscellaneous concrete structures shall meet the requirements as given for one of the following materials:

1. AASHTO M 153,

2. AASHTO M 213 modified to allow a maximum of 25% water absorption, or

## 832.02 Joint and Crack Sealants.

### 3. ASTM D8139.

## 832.02 Joint and Crack Sealants.

### (a) General.

Joint and crack sealants may be used for sealing both expansion joints and construction joints in concrete units other than bridges within the following limitations:

Vertical joints in concrete units such as curbs, etc. will require the use of a non-sag compound.

Construction joints 1/4 of an inch {6 mm} or less in width will not require sealing unless specified by plan details.

The shape factor of joint sealant is most important. The joint configuration shown by the plan details may require the use of a backer rod or strip to insure proper shape. When a backer rod or strip is necessary, it shall be compatible with the sealant and shall have no bond or reaction between the sealant and the backer rod or strip. A bond breaking tape may be used to insure no bond occurs between the two materials.

Requirements for joint and crack sealants are noted in the following Subarticles; however, the Contractor may substitute an approved preformed elastomeric seal meeting the requirements of Subarticle 832.03(a) in lieu of a sealer provided such is furnished at no additional cost to the Department.

A certified test report showing actual test results shall be furnished with each lot of joint sealer furnished to each project. Each lot of sealant shall be delivered in containers plainly marked with manufacturer's name or trade mark, type of sealant, lot number, and date of manufacture. The Department may run any or all tests deemed necessary.

### (b) Hot Applied Joint and Crack Sealant.

Hot Applied Joint and Crack Sealant shall meet the requirements of AASHTO M 324 (ASTM D 6690) for Type I Sealant, or Type II Sealant. Hot Applied Joint Sealant shall be selected from the Department's LIST III-4, "Joint and Crack Sealants". Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list.

### (c) Cold Applied Joint and Crack Sealant.

Cold Applied Joint and Crack Sealant shall be a resilient adhesive compound capable of effectively sealing joints from infiltration of incompressible materials and water throughout repeated contraction and expansion cycles.

The sealant, when delivered, shall be capable of being used on the job site and may be placed by machine, pressure gun, or by hand. The compound, when used in other than horizontal joints, shall be capable of conforming to the slope face without sagging.

Cold Applied Joint Sealant shall be selected from the Department's LIST III-4, "Joint and Crack Sealants". Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list.

The sealant shall be a homogeneous blend of materials, which may or may not require a primer. The sealant shall meet the requirements given in ASTM D 5893.

## 832.03 Preformed Elastomeric Joint Seals.

### (a) Compression Seals.

#### 1. General.

Compression type elastomeric seals shall consist of an approved seal shape formed from elastomeric material, designed to be installed and function in a compressed state. Installation of this type seal requires the use of a lubricant adhesive. This type seal when used on bridge decks will not require the use of a joint filler material unless such is specified by plan details.

#### 2. Materials.

Materials used in fabricating the preformed elastomeric seals shall conform to the requirements of ASTM D 2628 for Concrete Pavement and ASTM D 3542 for Bridges and be of the basic shape, dimension, etc. shown by the plan details. No factory or field splicing of seals in transverse joints 50 feet {15 m} or shorter in length will be allowed. On transverse joints over 50 feet {15 m} in length, one field splice will be considered for approval by the Engineer pending written request from the Contractor. This request shall specify the materials and details of performing the splice. Since the intent is to have one continuous seal meeting the above requirements, absolutely no patching of torn or damaged spots in the seal shall be permitted.

In addition to the above, seals for bridge joints (including the joint between the bridge end and the bridge end slab) shall have a depth to width ratio of not less than 1 (  $D/W \geq 1$  ).