

June 1, 2010

ELASTOMERIC CONCRETE FOR EXPANSION JOINT HEADERS

1.0 Elastomeric Concrete for Expansion Joint Headers

1.1 Scope

Furnish all required labor, equipment, and materials and perform all operations necessary for installing the elastomeric concrete in accordance with the details shown on the Plans and with the requirements of this Specification.

1.2 Materials

Provide elastomeric concrete that is a mixture of a two-part polymer consisting of polyurethane and/or epoxy and kiln-dried aggregate, with the materials being supplied as a unit by the Manufacturer.

Provide materials that comply with the following minimum requirements at either 14 days or at the end of the specified curing time.

ELASTOMERIC CONCRETE PROPERTIES	TEST METHOD	MINIMUM REQUIREMENT
Compressive Strength, psi	ASTM D 695	2000
5% Deflection Resilience	ASTM D 695	95%
Splitting Tensile Strength, psi	ASTM D 3967	625
Bond Strength to Concrete, psi	ASTM C 882	450
Durometer Hardness	ASTM D 2240	50

BINDER PROPERTIES (without aggregate)	TEST METHOD	MINIMUM REQUIREMENT
Tensile Strength, psi	ASTM D 638	1000
Ultimate Elongation	ASTM D 638	150%
Tear Resistance, lb/in	ASTM D 624	200

In addition to the requirements above, provide elastomeric concrete that is resistant to water absorption, is resistant to chemical, UV, and ozone exposure, and is capable of withstanding temperature extremes.

Furnish a Manufacturer's certification verifying that the materials satisfy the above requirements. Provide samples of elastomeric concrete to the RCE, if requested, to independently verify conformance with the above requirements.

Provide material in packages clearly marked by the Manufacturer with the following information:

- Manufacturer's name and address
- Product Name
- Date of Manufacture
- Expiration Date
- Batch Number
- Mixing Instructions
- Storage and Handling Requirements
- Material Safety Data Sheets

1.3 Construction Requirements

1.3.1 Storage

Prior to beginning construction, deliver sufficient materials to the job-site to construct entirely the elastomeric concrete headers as detailed on the Plans. Store materials delivered to the job-site in the original unopened containers within an appropriate facility capable of maintaining storage conditions consistent with the requirements of the Manufacturer.

1.3.2 Installation

Provide a Manufacturer's representative on the job-site during the first installation of the elastomeric concrete to ensure that all aspects of the installation is in compliance with the Manufacturer's requirements. Do not proceed with installation until the weather conditions meet the requirements of the Manufacturer.

Place a bond breaker on the area where the elastomeric concrete headers are to be constructed before placing the asphaltic concrete overlay over the joints. After the overlay is placed, sawcut the overlay to the width shown on the plans, and remove the bond breaker and overlay material in the joint area.

Clean and dry the bonding surfaces and prepare joint surfaces according to the Manufacturer's instructions. Prepare and apply a primer to areas specified by the Manufacturer and in accordance with Manufacturer's instructions. Mix and place the elastomeric concrete, in accordance with the Manufacturer's instructions, into the prepared area on each side of the expansion joint.

Form and cast the elastomeric concrete headers to smoothly match the surface of the finished roadway. Finish the surface to a moderately rough texture such as that produced by a wood float. Protect the elastomeric concrete header material from damage, and allow the headers to cure properly prior to opening the work area to traffic. Do not open to traffic without the written approval of the Manufacturer. Provide a copy of this approval to the RCE.

1.3.3 Warranty

Provide a Manufacturer's warranty that the elastomeric concrete will not delaminate, debond, rut, or otherwise fail to perform for five years after the time the bridge is opened. Include in the warranty that the Manufacturer is required to repair or replace, at the discretion of SCDOT, all elastomeric joint headers that fail during the warranty period at no additional cost to the SCDOT and within three months of SCDOT's written request to do so. Also include the SCDOT file number and the estimated date the bridge will be opened. Do not include in the warranty acts of God or failures adjacent to the installation. If the joint needs to be repaired or replaced by the Manufacturer before the warranty expires, SCDOT will provide, with three weeks notice, traffic

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control for a time interval specified by the Manufacturer. Include in the warranty that if the replacement or repair affects the expansion joint material, the Manufacturer is required to install new expansion joint material. Replaced or prepared installations must use materials meeting the requirements of this Specification and the original Plans.

1.4 Measurement

No separate measurement for payment will be made for furnishing and installing of elastomeric concrete, providing the Manufacturer's representative, or for furnishing the warranty.

1.5 Payment

Include all costs of elastomeric concrete in the contract unit price bid for Expansion Joint System with Concrete Header.