

Make this Section a part of the Standard Specifications:

“SECTION 515 - DECK EXPANSION JOINT

515.01 Description. This work shall consist of furnishing and installing all materials for a deck expansion joint system, in accordance with the contract plans and as specified herein. The Contractor shall provide all the necessary hardware including epoxies and sealants, neoprene seal, and other accessories and all necessary tools for the proper installation of the joint. All work and materials for the installation of the joint are to comply with the written instructions of the joint manufacturer.

515.02 Materials. The structural sealing joint system shall be designed to withstand structural movement and harsh environmental conditions and provide a leak proof seal across the joint. The system shall consist of a preformed neoprene profile, bonded with a lubricant adhesive. The system shall meet the requirements for installation width as shown on the plans. Provide seal profile that satisfies project requirements including movement and water tightness. Install all components utilizing a lubricant adhesive as recommended by the manufacturer. The neoprene seal shall be continuous over the full length of the joint.

The Contractor shall guarantee the transverse joint seal with a twelve (12) month warranty that covers the performance of the system. The Contractor shall submit to the Engineer within ten (10) days after the award, a written statement from the manufacturer certifying that the joint seal method and materials to be employed in this repair work have been successfully used for a minimum of two thousand (2,000) linear feet of the bridge joints and that such repair work has not failed within a period of five (5) years.

(A) Adhesive. Elastomeric seal shall be installed utilizing a lubricant adhesive meeting ASTM D2835. The lubricant-adhesive must contain a minimum of 22% solids, be uniform, contain no lumps, have the correct viscosity, and have a drying time between 8 and 20 minutes. The Contractor shall submit a detailed report of the joint being proposed to use, its performance at prior installations, its advantages and disadvantages and any other requirements deemed necessary by the Engineer. The Engineer is the sole authority for the determination of whether or not a proposed joint meets the requirements of the plans and specification.

515.03 Construction Requirements.

(A) General. The joint shall maintain complete water tightness even at the railings. Recess the seal gland in such a manner that no wheel or tire traffic shall make contact with it. The seal gland shall be continuous over the full length of the joint, including at locations where the width of the seal changes, and shall be done according to the manufacturer's recommendations and upon approval of the Engineer. The seal gland shall be readily replaceable if damaged. The

expansion system shall be installed to provide a smooth riding surface over the joint with minimal noise.

Prior to manufacture of the joint, the Contractor shall submit to the Engineer for approval shop drawings showing complete details of the type of joint, materials and equipment which are to be used, and the manufacturer's installation instructions. The drawings shall conform to the details shown on the contract plans. Any variations, suggested by the manufacturer or the Contractor shall be submitted to the Engineer for approval.

At the discretion of the Engineer, the manufacturer may be required to furnish a representative sample of material to be supplied in accordance with the project specifications.

Where indicated and noted on the contract plans, install structural sealing joint system in a neat and workmanlike manner. All foreign materials and debris which may be detrimental to effectively sealing the joint shall be totally removed from the gap. The joint interfaces shall first be cleaned according to the manufacturer's recommendations before the adhesive is mixed and applied.

Structural sealing joint system shall be set to the proper width for ambient temperature at the time of installation and shall be installed in strict accordance with the manufacturer's written instructions along with the advice of their qualified representative.

Existing steel surfaces shall comply with the Society of Protective Coatings (SSPC) SP-10 standard of surface cleaning, near white, immediately prior to installing the joint seal. This is a requirement in new or existing construction. All oxidation must be removed and "white steel" revealed. Steel surfaces will be aggressively disc ground to roughen and abrade the surface to achieve the "white steel" condition.

Hybrid polymer concrete surfaces shall be clean and free of any dirt, debris, oils, etc. Material shall have cured for a minimum of 3 hours prior to installation of the compression sealant. Prior to the installation, the joint seal shall be uncoiled from shipment packaging and allowed to reach a relaxed condition. The joint seal shall be cut to the correct length of the appropriate gap for installation, without pulling or exerting excess tension.

Clean and abrade sides of joint seal per the manufacturer's instructions. The serrated sidewalls, if applicable, should be cleaned with a conditioning agent recommended by the manufacturer. Apply the lubricant adhesive to the inside of the joint gap to a sufficient depth; so that when the joint seal is installed, the adhesive is in contact with the serrated sidewalls of the seal. The adhesive should then be applied to the joint seal so that it covers the entire serrated sidewall of the joint seal. Use a clean rag dampened with concrete

cleaner or as recommended by the manufacturer to remove excess adhesive from the joint seal.

Repair the damaged galvanized surfaces as specified in the Standard Specifications.

515.04 Measurement. Deck expansion joints will be measured by the actual linear feet installed in place complete, measured at the top surface of the joint, including the vertical bridge railing surfaces. The diagonal joint repair at the Hanamaulu Viaduct will be measured by the linear foot. The deck repair at the Lihue Abutment, adjacent to the diagonal joint will not be measured.

515.05 Payment. The accepted quantities of the deck expansion joints will be paid for at the respective contract unit price per linear foot in the proposal, which price and payment shall be full compensation for furnishing and installing all materials, including, but not limited to, neoprene seal glands, epoxies, anchorage devices, all necessary tools and equipment and all labor and incidentals necessary to complete the work.

At the Hanamaulu Viaduct, the payment below includes the removal and replacement of the sealant, backer rod, and filler of the diagonal joint at the Lihue Abutment, and as shown in the contract plans.

At the Hanamaulu Viaduct, all costs associated with the deck repair adjacent to the diagonal joint at the Lihue Abutment, and as described above shall be incidental to the Deck Expansion Joint pay item below.

The Engineer will pay for the following pay item when included in the proposal schedule:

| Pay Item | Pay Unit |
|-------------------------------|--------------|
| Deck Expansion Joint at _____ | Linear Foot" |

END OF SECTION 515