

ITEM 567.3971--25 - STRIP SEAL JOINT SYSTEM

1. DESCRIPTION:

- 1.01 Under this item the Contractor shall furnish and install a Strip Seal Joint System consisting of steel extrusion, strip seal gland, and rigid anchorage, at the locations indicated on the Contract Plans and in accordance with this specification.

2. MATERIALS:

- 2.01 **Steel Extrusion:** All steel extrusions shall be extruded from steel conforming to ASTM A-588 or ASTM A-709, Grade 50W.
- 2.02 **Structural Steel:** All structural steel supports shall be fabricated from steel conforming to ASTM A-588 or ASTM A-709, Grade 50W.
- 2.03 **Bolts, Nuts, and Washers:** The steel used for fasteners shall conform to the requirements of ASTM A325.
- 2.04 **Headed Concrete Anchor Studs:** The requirements of NYSDOT Material Specification 709-05 – Stud Shear Connectors shall apply. Studs shall be furnished in the dimensions shown on the Contract Plans.
- 2.05 The type of seal shall be compatible with the dimensions shown on the Contract Plans.
- 2.06 All Neoprene Glands shall be double wall where available by size. Single wall glands will be acceptable for smaller opening joints of 1 ½” or less at 68°F. Gland at each location shall be supplied as a single continuous piece with no splices allowed.
- 2.07 **Strip Seal Gland and Extrusion:** All strip seal gland and extrusion material for this work shall be supplied by:

D.S. Brown, Co.
P.O. Box 158
300 E. Cherry Street
North Baltimore, OH 45872

Approved extrusions: SSA2, SSE2, SSCM2 and SSPA.

Approved Strip Seal Gland: As recommended by Manufacturer. See 2.06 above.

OR

Watson, Bowman Acme Corp.
95 Pineview Drive
Amherst, NY 14228

ITEM 567.3971--25 - STRIP SEAL JOINT SYSTEM

2. MATERIALS: (cont'd)

2.07 Strip Seal Gland and Extrusion: (cont'd)

Approved Extrusions: A, E, R, or P

Approved Strip Seal Glands: As recommended by Manufacturer. See 2.06 above.

No other glands or extrusions will be considered.

- 2.08 Shop Drawings:** Shall be required for the steel extrusions, all structural steel, fasteners, and neoprene glands. All shop drawings shall be in conformance with the requirements of the New York State Steel Construction Manual and applicable provisions of this contract.

3. CONSTRUCTION DETAILS:

- 3.01 Strip Seal Expansion Joint System:** The joint system shall be installed in accordance with the manufacturer's instructions and this section.

- 3.02 Field Drilling Holes:** All holes required to attach the brackets to the existing structural steel shall be done in accordance with Section 586-3.04 – Field Drill Holes in Existing Structural Steel.

- 3.03 Welding:** Weld Procedure Specifications shall be submitted for approval for any welding required, shop or field. All welding shall be in conformance with the New York State Steel Construction Manual. Extrusion splices shall be accomplished with full penetration welded splices only. Field splice welding of extrusions will be allowed only where indicated on the plans. Shop welded splices will be allowed at slope changes and horizontal angles. Splices within a straight line will only be permitted for lengths longer than 18 feet. No more than one (1) piece less than 18 feet will be permitted within a single straight run.

- 3.04 Inspection and Handling:** The joint system shall be stored, inspected, and handled in accordance with the following:

A. **Handling and Storing:** All material shall be handled and stored in a manner approved by the Engineer, and consistent with the requirements of the New York State Steel Construction Manual (NYSSCM). No material shall be dropped, thrown, or dragged upon the ground. All material shall be kept clean, properly drained, and stored on proper supports above the ground. All material shall be adequately shored, braced, or clamped to resist lateral forces which might occur. Permanent distortion will be cause for rejection of material.

B. **Field Inspection:** All installation work shall be subject to the Engineer's inspection three (3) working days before any material is to be placed. The Engineer shall be given all facilities required for a thorough inspection. Materials and workmanship subject to shop inspection shall be identified by the acceptance stamp of the Shop Inspector. The Engineer must also approve any hardware, materials, and workmanship prior to installation. Certified copies of the results of tests conducted by the manufacturer shall be furnished to the Engineer in accordance with the requirements of Section 715-01.

Immediately prior to installation, the extrusions and brackets shall be inspected by the Engineer for proper alignment, and proper stud placement and effectiveness. No bends or kinks in the steel shall be allowed, nor shall straightening of such bends or kinks be allowed. Extrusions exhibiting bends or kinks shall be removed from the work site, and replaced with new extrusions at the Contractor's expense.

ITEM 567.3971--25 - STRIP SEAL JOINT SYSTEM

3. CONSTRUCTION DETAILS: (cont'd)

3.04 Inspection and Handling: (cont'd)

B. Field Inspection: (cont'd)

Studs shall be inspected visually and shall be given a light blow with a hammer. Any stud which does not have a complete end weld or does not emit a ringing sound when struck a light blow with a hammer shall be replaced. Studs located more than one (1) inch from the location shown on the shop drawings shall be carefully removed and a new stud placed in the proper location.

- 3.05 Three (3) days prior to placing any header material the Engineer shall inspect the extrusions and any forms for the header material and certify in writing that the expansion gap between the extrusions has been set to the recommended width. No deviation greater than 1/8" shall be allowed from the specified opening.

The Contractor must also take the necessary precautions to insure that while placing the header material the recommended width (as indicated on the Contract Plans) does not deviate greater than 1/8". If the recommended opening is deemed unacceptable by the Engineer due to failure to maintain the recommended width, the Contractor shall remove and replace **ALL** of the header and extrusion at no additional cost to the Authority.

- 3.06 Prior to the placement of concrete, an epoxy grout meeting the specifications of Section 721-03 shall be applied to all surfaces of the extrusion which will come in contact with the concrete to be placed. The surface of the extrusion shall be clean and free of any loose material prior to the application of the grout.

- 3.07 **Mechanical Devices:** In order for the joint extrusions to be installed properly, they must be set at a width which is directly dependent upon the ambient temperature at the start of installation, as shown on the shop drawings. The width setting shall be accomplished through the use of brackets bolted to the structural steel. After the extrusions have been set to proper line and grade, the bracket adjustment bolts shall be properly torqued.

3.08 Watertight Integrity Test:

- A. At least five (5) working days after the joint system has been fully installed the Contractor shall test the entire (full length) joint system for watertight integrity. He shall employ a method satisfactory to the Engineer. The entire joint system shall be covered with water, either ponded or flowing, for a minimum duration of 15 minutes. The concrete surfaces under the joint shall be inspected, during this 15 minute period and also for a minimum of 45 minutes after the supply of water has stopped, for evidence of dripping water or moisture.

Water tightness shall be interpreted to be no free dripping water on any surface on the underside of the joint. Patches of moisture shall not be cause for non-acceptance.

- B. Should the joint system exhibit evidence of water leakage at any place whatsoever, the Contractor shall locate the place(s) of leakage and he shall take any and all measures necessary to stop the leakage. This work shall be done at the Contractor's expense.
- C. In the event that measures to eliminate leakage have to be taken, a subsequent water integrity test shall be performed subject to the same conditions as the original test.

ITEM 567.3971--25 - STRIP SEAL JOINT SYSTEM

3. CONSTRUCTION DETAILS: (cont'd)

3.08 Watertight Integrity Test: (cont'd)

- D. Any water integrity test performed subsequent to the Contractor's previously described corrective measures shall carry the same responsibility of the original test at no additional cost to the Authority.

4. METHOD OF MEASUREMENT:

4.01 Measurement will be made as the number of linear feet of joint system completely installed, measured horizontally, and vertically along the centerline of joint system between the outer limits as indicated on the Contract Plans. The words "completely installed" shall be interpreted to mean the joint system in place with the following operations completed where applicable:

- A. All brackets bolted to the structural steel.
- B. All nuts tightened or re-tightened as required.
- C. All brackets welded as indicated.
- D. Concrete placed and finished.
- E. Watertight integrity tests.

5. BASIS OF PAYMENT:

5.01 The unit price bid per foot shall include all labor, materials, and equipment necessary to complete the work.

5.02 Payment schedule shall be as follows:

- A. 75% of the quantity at each joint location will be paid for after the joint is installed.
- B. The remainder of the quantity at each joint location will be paid for after the entire length of that joint has satisfactorily met the requirements of Section 3.08.

5.03 **Non-Payment:** Payment will not be made for the following conditions as described:

- A. Work done by the Contractor to stop water leakage evidenced by any watertight integrity test.
- B. Water-tight integrity tests done subsequent to the first test.
- C. All re-alignment or re-fastening of joint components to obtain correct alignment.