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Installation Instructions For The DD-HP Series Expansion Joint System

Materials

1) Aluminum edge rails are to be match drilled in the field to assure a tight and accurate fit with the seal wing and pre-drilled S.S covers. The "snap-in seal wings" align the seal for ease of installation.

2) The seal is made of an extruded thermoplastic material. The gland may be cut in the field and heat-welded to match directional changes such as curbs, stairs, columns, and dogleg conditions.

3) Pre-drilled and countersunk stainless steel covers are fastened into the heavy-duty aluminum edge rails with stainless steel machine screws.

4) The setting bed must be level prior to the installation of the edge rails. It is of vital importance that the edge rails be set flat and level to the deck surface elevation.

5) Either epoxy-set anchorage or drilled in anchors pre-secure the edge rails onto sound concrete. This is imperative for a successful installation. Polycrete bedding and elastomeric concrete header materials are also recognized methods of fastening the system to the concrete substrate.

Aluminum Edge Rails

1) The aluminum edge rails are made to meet ASTM B 221, 6063-T5 alloy. The top of the vertical leg of the extrusion has two channels into which temporary alignment pins are inserted to positively align consecutive lengths. After rails are secured to the deck recess, the pins should be removed to allow the seal lugs to be installed.

2) The edge rails are extruded to assure uniformity of the edge of the flange, which is to be fully supported on the deck substrate. The deck waterproofing should be laid so as to eliminate any abrupt angles. The deck-mounted flanges of the edge rails contain a recessed channel to receive the anchors and/or nuts, which will be subsequently filled and will serve to hold the nuts below the plane of the waterproofing materials above.

3) The top surface of each edge rail incorporates two locations for fastening of the waterproof membrane (if required). One location is the side reglet, which acts as a receiver for a sealing insert and side flashing sheets if required. The other location is the second channel extruded into the rails, which will accept the insertion of a sheet of PVC or other water-shedding material. After the seal is snapped into place, the stainless steel cover angles and stainless steel screws securely hold the sheeting in place.

DD-Series Sealing Element

1) The heart of the system is the DD-series seal. The seal is made from thermo-plastic material (trade name Santoprene), which enables the heat welding of various configurations at directional changes and transitions as mentioned above. These changes in plane or irregularities around columns, wall to floor, or up-and-over conditions such as stairs or curbs are a common occurrence. Thermo-plastic material lends itself very well to solving these difficult-to-seal conditions.

2) Factory-made directional changes and transitions may be made at EMS's fabrication plant, to drawings and dimensions provided by the field contractor. However, with minimal training, field crewmen will adapt quickly to create successful splices

Side Flashing Sheet

1) The side flashing sheets are optional. If required, the sheets are provided in rolls of 12" wide, 1/8" thick thermal-rubber sheeting. This material will allow heat-welding at all joints for continuous waterproofing at all transitions, corners, upturns, etc. The flashing sheet may be inserted into the top channel or into the side extruded reglet located on the vertical leg of the aluminum edge rail.

2) If required, flashing sheets should be "sandwiched" between two layers of the deck waterproofing system. The flashing materials must be made of similar material to ensure adhesion with deck waterproofing materials. Flashing sheets should have a short-term temperature resistance (350°F - 400°F) suitable for integration with the hot applied deck waterproofing membrane systems.

Stainless Steel Cover Angles

1) The formed Stainless steel cover angles comply with ASTM A167, Type 304 with mill finish. They are secured to the extrusion with stainless steel machine screws, 6" on center, which are seated into the countersunk seats in the stainless steel angles. These formed angle covers are removable to allow for expansion joint gland replacement. At locations where cover plates are required over top of the DD-series gland, a specially fabricated stainless steel cover plate can be made to extend across the sealing gland and rest on the top of the opposite side cover angle. Sizing of the plate is dependant on loading and width of the joint opening. The cover plate will be made from stainless steel plating.

Factory Fabrication of Transitions And Temperature Adjustments

1) In addition to factory-heat welded splices, EMS's fabrication plant will also fabricate the aluminum edge rails to match the field conditions.

2) At the time of installation, the engineer of record should be consulted for the temperature adjustment table. This will determine the joint opening "setting" at that given deck temperature. Preset the distance between the aluminum rail extrusions prior to anchoring the rails into place with the use of spacers. Keep in mind that the opening may be wider or narrower the next day. Adjustments must be made to remain in sync with the deck temperature

Surface Conditions

1) Joint surfaces to receive system should be sound, smooth, straight, parallel, and level from side to side.

Installation

1) Inspection: The manufacturer's technician should be on site at commencement of installation for inspection of substrate preparation and demonstration of installation procedures**.** Bids must include a specific line item for manufacturer's technical service, and will be considered incomplete and subject to disqualification if excluded. Technical service is defined as the paid, contracted service of a manufacturer's representative or factory technician.

2) The following is a general summary of installation requirements. In all cases the manufacturer's standard written instructions or specific instructions of the manufacturer's technician are to be followed.

Anchorage

1) Use epoxy anchoring devices and fasteners for securing expansion joint cover assemblies or concrete expansion anchors (It is the contractor's option to purchase from manufacturer). Fasteners should be 3/8-inch diameter x 4-inch long anchor, carbon-steel grade II, zinc-chromate yellow finish, UNC 16, threaded end- to-end, with nut of the same material.

2) Use a suitable epoxy sand mix to level the base of the expansion joint recess. Use a 100% solids epoxy.

Size Up-

1) Perform all cutting and fitting required for installation of expansion joint covers. Install joint cover assemblies in true alignment and proper relationship to expansion joints and adjoining finished surfaces measured from established lines and levels. Take into consideration movement table from engineer.

2) Allow adequate free movement for thermal expansion and contraction of metal to avoid buckling. Securely attach in place with all required accessories. Locate anchors at recommended intervals, not less than three inches from each end.

3) Maintain continuity of expansion joint cover assemblies with end joints held to a minimum and metal members aligned with metal guide pins

Seal Placement

1) Integrate flashing sheets with deck waterproofing system materials according to waterproofing manufacturer's instructions. Install seals in continuous lengths to comply to eliminate leakage opportunities. All transitions and terminations should be factory-welded wherever possible, according to field-measurements and drawings on centerline provided by the contractor. Site welding, when needed, should be carried out after suitable instruction by the expansion joint manufacturer and/or their representative.

Site Cleanup

1) Dispose of all waste materials from the site. Seal should be cleaned of all foreign matter, as recommended by the seal manufacturer