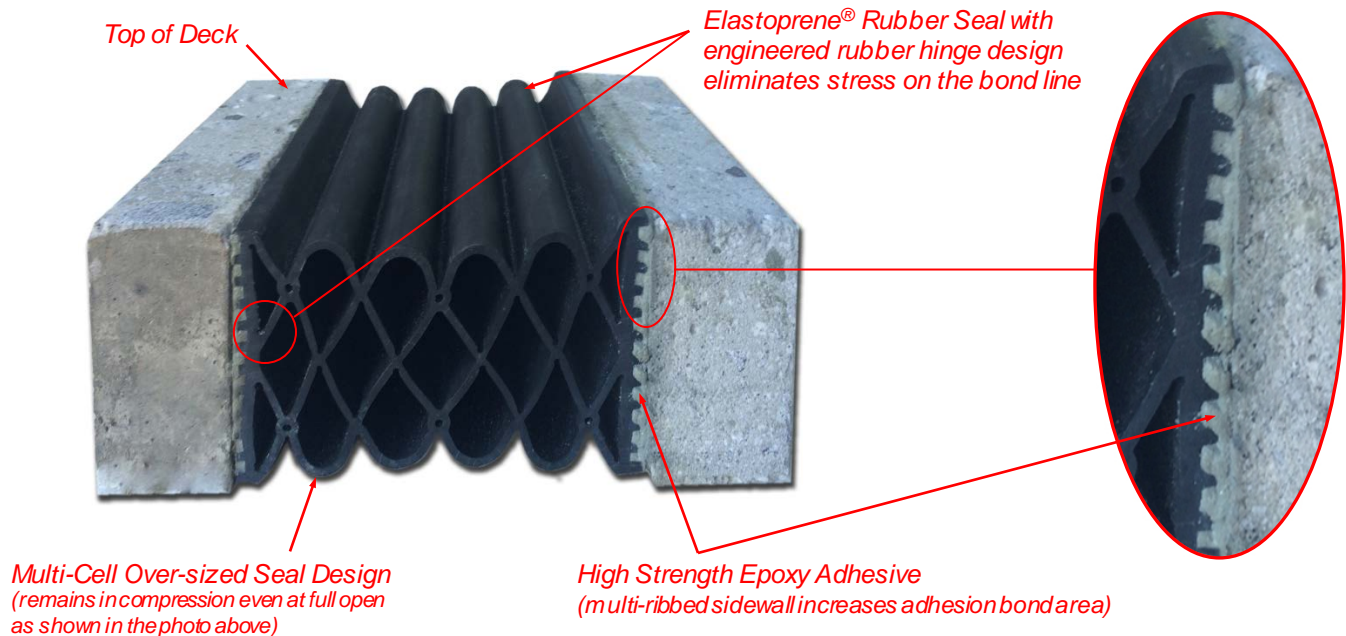




TECHNICAL BULLETIN 124

Subject: EBS Series Expansion Joint Performance Attributes



The **Epoxy Bonded Sealing System (EBS Series)** is a high performance waterproof expansion joint system with a continuous Elastoprene® rubber seal that is bonded in place with a thixotropic structural epoxy adhesive creating a watertight seal. The system is capable of multi-directional movement. The EBS Series Expansion Joint properties have been analyzed and certified by an independent Licensed Professional Engineer.

The EBS rubber seal is oversized beyond the maximum anticipated structural joint opening and then vacuum compressed into place during installation. The safety margin movement capability accommodates joint openings that become larger due to long-term shrinkage and creep in addition to vertical deflection that often occurs due to vehicular traffic loads between opposing decks. The oversize design principal allows the seal to remain in compression throughout the entire structural movement cycle. It is available in six sizes with each seal designed independently to accommodate expansion, contraction, shear, vertical and rotational movement requirements. Each seal has unique accordion style web wall designs that maximize movement characteristics while accommodating vertical displacement.

A key feature of the system is the **MM High Strength Epoxy Adhesive** specifically formulated to bond elastoprene rubber to concrete and other substrates. The tensile strength and elastic properties of the epoxy create a tenacious bond that remains pliable to avoid cracking associated with very hard and brittle epoxy formulations. Another key is the use of **Elastobond Activator** that is applied to the rubber sidewall prior to the application of MM High Strength Epoxy which facilitates a molecular cross-linking between the polymers in the rubber seal and the epoxy itself.

Laboratory Test Results:

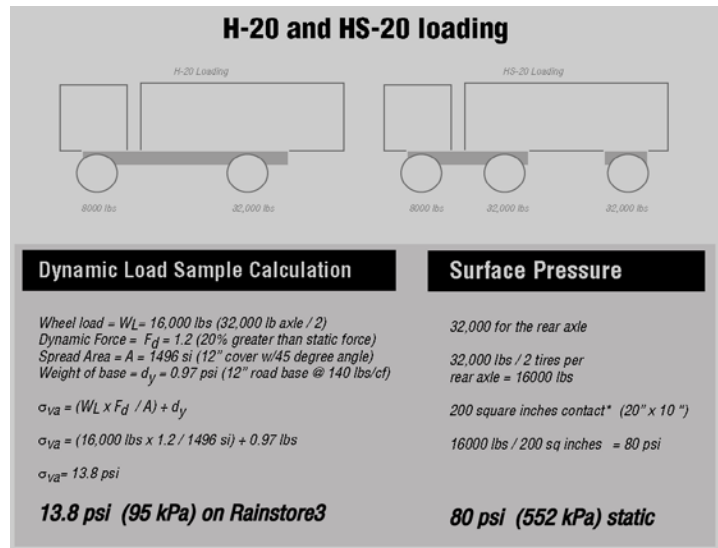
MM High Strength Epoxy Thixotropic Paste Adhesive was mixed per instructions and applied to the sidewalls of an elastoprene rubber seal immediately after application of Elastobond Activator. The specimen was cycled 500 times then placed and held at the maximum tension for 75 hours at 77°F. Zero defects and zero separation were recorded. The same results were achieved at both 0°F and at 120°F. The specimens were then taken to failure mode resulting in delamination of concrete and of the rubber seal.

ASTM Compliance:

For more than 30 years, high endurance elastoprene rubber has been used in the parking, highway and construction markets. The EBS Series elastoprene rubber is specifically formulated to endure the rigors of vehicular impact loads (ASTM D2240), extreme temperatures (ASTM D746), ozone resistance (ASTM D1149) and ultra violet exposure (ASTM D695).

AASHTO Load Bearing Compliance:

The EBS Series expansion joint system complies with AASHTO HS20 vehicular traffic loading guidelines. The Federal-Aid Highway Act Amendments of 1974 established the bridge formula as law, along with the gross weight limit of 80,000 pounds (36,000 kg). Current applications of the formula allow for up to 7 axles and 86 feet or more length between axle sets, and a maximum load of 105,500 lbs. AASHTO Loading of either H20 (14' between front to rear tires) or HS20-44 (14' minimum between successive axles) is based on an axle load of 32 kips. This load is divided into two tires; that is a load at each end of the axle. The tire area contact is defined in AASHTO 3.30 Tire Contact Area.



ADA Compliance

EBS Series Expansion Joint conforms to the Americans with Disabilities Guidelines for Buildings and Facilities, as published by the U.S. Architectural & Transportation Barriers Compliance Board. An independent analysis confirmed the EBS design also accommodates pedestrian foot traffic for both the maximum slope and the static coefficient of friction. The EBS Series provides a slip resistant walking surface and is in full compliance with the ADA Guideline and the ASTM-F1637 Standard Practice for Safe Walking Surfaces.

Project Support

The MM Systems Service Group offers a comprehensive field-support program to assist with project related challenges and to provide ongoing technical support to insure proper installation of the EBS Expansion Joint System. In addition, our team is available to troubleshoot field problems, recommend remedial solutions and provide project specific expansion joint analysis.

Certified Contractor Installer Network

MM Systems provides a Contractor Certification Program accredited by the Sealant Waterproofing and Restoration Institute which includes classroom and hands-on training related to the proper installation of the EBS Series Expansion Joint System. The MM Systems Field Service Group supervises the first project installed by each Certified Contractor.

Quality Assurance

The best performance indicators rest with the tens of thousands of feet installed as documented in the EBS Series extensive project reference list on our web site.