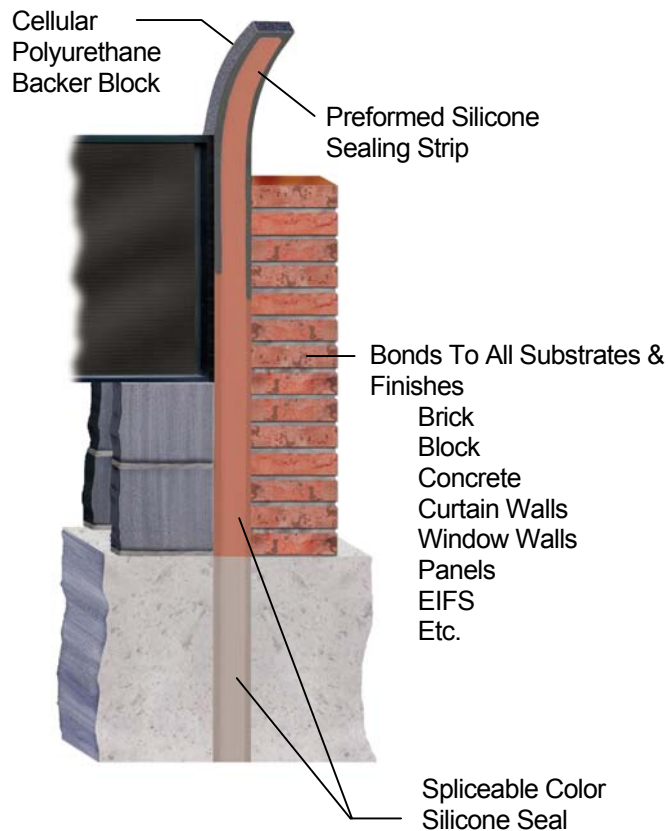




TECHNICAL BULLETIN 104

Subject: Engineered Silicone System Performance Features

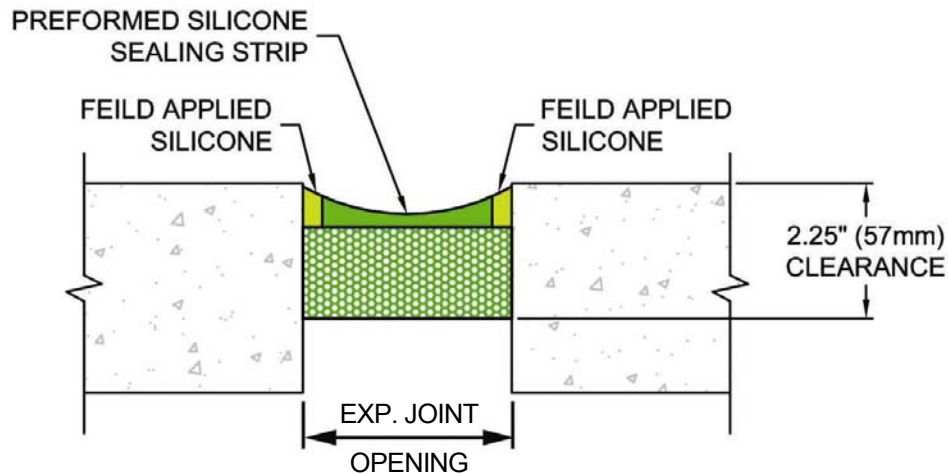
ColorJoint ESS Series is manufactured by MM Systems Corporation. ColorJoint is a high performance engineered silicone sealing system that combines a factory cured silicone seal fused to a cellular polyurethane / polyester backer block creating a binary monolithic seal. Listed below are the engineered advantages creating a waterproof sealing system.



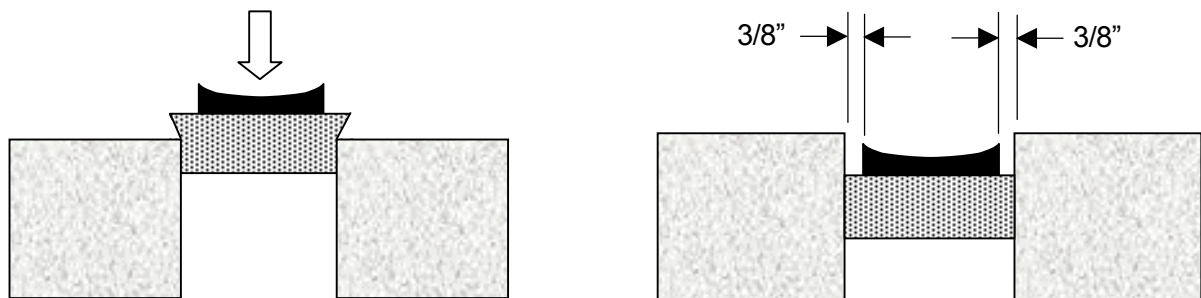
PRODUCT FEATURES

- Conforms to irregular openings.
- 3-sided bonding on each side of seal with a primerless one-part silicone sealant.
- Extra thick ($\frac{1}{2}$ " at bond line) factory engineered silicone seal nearly eliminates possibility of punctures.
- Watertight, dust-proof, airtight, soundproof.
- Resistant to UV, ozone, acid rain, wind driven rain and extreme temperatures.
- Easy to install, no fasteners or anchors.
- Non flammable.
- $\pm 50\%$ movement capability.
- Near zero tensile stress at bond line.
- Available in a wide range of colors.

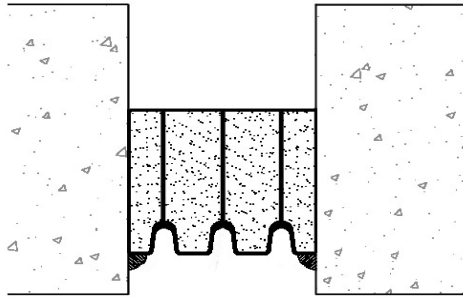
ColorJoint is designed for sealing vertical and horizontal (non-traffic) expansion joints that measure 1" or larger. The outstanding physical properties of the ColorJoint Systems allows for a watertight seal in a wide variety of architectural applications – brick, block, concrete, EFIS, window-walls, metal panels and the like.



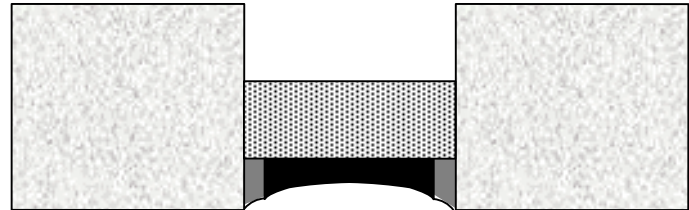
One of the key features of the ESS System is the preformed silicone-sealing strip. The ½ inch thick silicone-sealing strip eliminates all concerns related to waterproofing and puncture resistance. The preformed strip is the primary functioning element as compared to other products that only provide a very thin decorative layer of silicone. The polyester/polyurethane backer block acts as a binary sealing element and is impervious to water. The backer block is oversized compared to the expansion joint opening to insure proper engagement and to avoid separation in the event that the joint opens beyond its published movement range.



The ESS System incorporates 3/8-inch wide reveals on each side of the 1/2-inch thick preformed silicone-sealing strip. These reveals provide an engineered cavity to receive field-applied silicone. This provides a 3-sided bond line to adhere to the surrounding substrate. This quality assurance measure allows the ESS System to go into tension without any concerns of delamination. Most other products have added a bead of silicone due to separation failure at the bond line. We believe the 3/8-inch x 1/2-inch engineered reveal provides the best waterproofing capability in the market.



Laminated and impregnated foams exhibit poor elongation and memory properties.

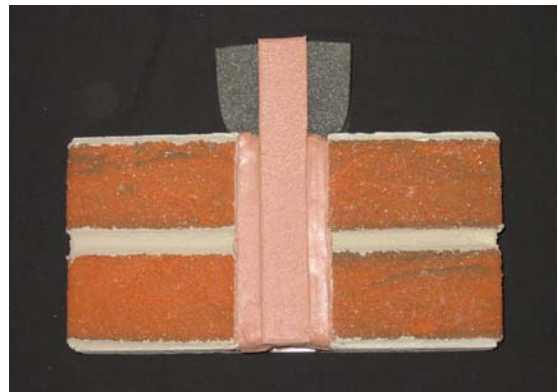


Binary silicone strip and polyester backer block exhibit superior elongation and memory properties.

Traditional compression seals and other extruded expansion joints seals utilize bellows or “V-Grooves” to accommodate expansion and contraction of the product. Closed cell expanded rubber and polyurethane products do not function in the same manner. Contraction is accomplished through compression of the foam-like composition of the product. Expansion is accomplished through the tensile and elongation properties of the product. The reason MM Systems selected the silicone strip, as the primary sealing element, is due to silicones superior memory properties through a wide range of temperature conditions. Therefore, the addition or elimination of bellows and “V” grooves with this type of material has little effect on the product’s performance.

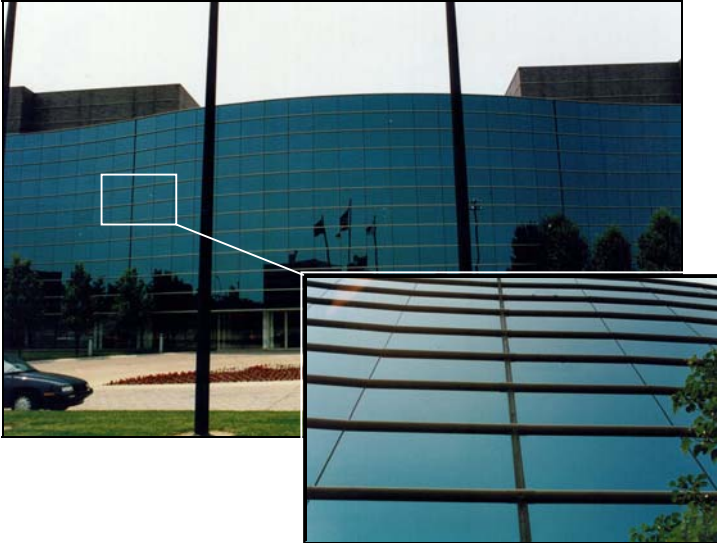


ColorJoint ESS-150 shown being tested for expansion – well beyond the published 2.25-inch capability.



ColorJoint System shown with oversized backer block, preformed silicone strip and 3/8-inch engineered reveals that provide a waterproof monolithic seal.

The superior expansion and contraction principals are the main reasons why the ColorJoint EES System was designed with a 1/2-inch thick silicone-sealing strip. This unique design allows for significant expansion and contraction characteristics well beyond our published +/- 50% movement. The additional movement capability provides for an added level of insurance when expansion joint openings open beyond the published movement range.



ColorJoint ESS installed in glass and curtain wall projects.



ColorJoint ESS installed in brick, concrete and EIFS applications – ideal for accommodating complex changes in direction.



The photos above demonstrate quality installations available through the MM Systems Certified Contractor Network.

MM Systems offers a comprehensive field-support program available to troubleshoot field problems, recommend remedial solutions and provide on site expansion joint analysis. Our team includes: Field Application Engineers, Engineering Manger, Product Development Engineer and Parking Division General Manager.

For additional information or to schedule an AIA accredited continuing education seminar, contact MM Systems at 866-506-6929 for the nearest local representative.