

SEALANT JOINTS

The decision to use mortar with tooled joints or sealant joints between stones is common. To ensure performance, a professional designer or engineer should be consulted for proper joint design. In general, all cast stone sections with projecting profiles, exposed top joints or rigid suspension connections to the supporting structure should be "soft" sealant joints. Furthermore, "soft" sealant joints are recommended for conventional masonry units, all head joints at coping stones, column covers, cornices, platforms, soffits, window sills and larger than conventional masonry units (1ft. 6 in. tall by 2ft. 6 in. in length) for vertical applications.



Mortar Joint

Tooled mortar joints are best suited for masonry-bound trim items such as belt courses, lintels, window surrounds, date stones, inscription blocks, quoins, keystones and similar applications. Rake and point the mortar joints rather than full-bed setting and finishing in one operation. See Technical Bulletin #44 on Pointing.

Sealant joints allow for movement at the vertical joints. Leave head joints dry when setting. An allowance for expansion and contraction is required for the system to be effective. After setting, prime the ends of the stones (if necessary), insert properly sized foam backup rod and gun in sealant. If a mortared appearance is desired, a sanded sealant may be used.



Sanded Caulked Sealant Joint

Sealant systems are not intended to bear weight, so plastic setting pads or lead shims are required when setting the cast stones. The sealant is not intended to adhere to the foam backer rod. The sealant should adhere to the parallel surfaces only. The foam rod should be placed to a depth approximately equal to the width of the joint.

The most common types of sealants are one-part "moisture cure" or "air cure." Two part systems are also available which require the mixing of materials together to allow chemically induced curing.

The inherent properties of silicone products make them excellent sealant materials. Silicones provide superior weathering resistance and perform over a wide range of service temperatures. They are easy to apply, have low shrinkage rates, and can accommodate high movement. While organic materials tend to crack, dry up, and become brittle or even revert with age, silicones remain flexible and durable. Silicone sealants allow for elongation and compression up to 50% of the joint width.

Two-component, polyurethane sealants are tough and elastic, allowing for movement of up to 50% of the joint width. They are also durable, flexible and form a watertight bond with most building materials. Polyurethane sealants may not be suitable for all geographic locations.

The sealant manufacturer should be consulted to ensure the proper sealant is used for each application.

Minimum required allowance for thermal and other movement should be provided in the specification for the project or specified by the design engineer.

This Technical Bulletin addresses generally accepted practices, methods and general details for the use of Architectural Cast Stone. This document is designed **only as a guide** and is **not** intended for any specific application or project. It is the responsibility of design and construction professionals to determine the applicability and appropriate application of any detail to a specific project based on professional judgment, specific project conditions, manufacturer's recommendations and solid understanding of product characteristics. The Cast Stone Institute makes no express or implied warranty or guarantee of the techniques or construction methods identified herein. Technical references shall be made to the edition of the International Building Codes for the location of the structure, the latest edition of the TMS 402/406 Masonry Standards document and TMS 404, 504, 604 Standards for Design, Fabrication and Installation of Architectural Cast Stone.

The Cast Stone Institute (CSI) is a not-for-profit organization created to advance the design, manufacture and use of Architectural Cast Stone. To further this goal, the CSI continually disseminates information to targeted construction industry audiences through presentations, programs and technical publications.