



CSI Code: 03150

NO. 320

JULY 2004  
(Supersedes August 2003)

## CONTROL JOINTS EXPANSION ↔ CONTRACTION

### DESCRIPTION

**ASPHALT** Expansion Joint Filler is composed of a blend of asphalts, vegetable fibers and mineral fillers formed under heat and pressure between two asphalt-saturated liners. It is waterproof, permanent, flexible and self-sealing.

**FIBRE** Expansion Joint is composed of cellular fibers securely bonded together and uniformly saturated with asphalt to assure longevity. Fibre Expansion Joint is versatile, resilient, flexible and non-extruding. When compressed to half of its original thickness, it will recover to a minimum of 70% of its original thickness.

**CERAMAR®** Flexible Foam Expansion Joint Filler is composed of a unique blend of isomeric polymers in a very small, closed-cell structure. Gray in color, CERAMAR is a lightweight, highly flexible and resilient material offering recovery qualities of over 99%. This mini closed-cell structure is virtually non-absorbent. It can be wrapped or formed around curved or circular surfaces.

**SPONGE RUBBER** Expansion Joint is produced to a uniform thickness and density from gray-colored, top-quality, blown sponge rubber. It is easily compressed and has a recovery of 95% or more of the original thickness and a density of not less than 30 pounds per cubic foot (480.56 kg per cubic meter).

**STANDARD CORK** Expansion Joint Filler is produced from clean, selected, granulated cork bonded with a phenolic resin. It is highly resilient, will compress without extrusion and recover to 95% of its original thickness after 50% compression.

**SELF-EXPANDING CORK** Expansion Joint is formed and compressed under heat and pressure to permit expansion up to 140% of original thickness after installation which permits the filler to compensate for concrete shrinkage. Normal humidity conditions after installation activate the self-expanding properties of the cork.

### PACKAGING

See Specification Data and Size Information Chart on page 2 for details.

### MINIMIZE STRESS DAMAGE AND ENHANCE THE PERFORMANCE CAPABILITIES OF CONCRETE WITH PROPER JOINTING TECHNIQUES TO ACCOMMODATE EXPANSION-CONTRACTION CYCLES.

Concrete expands and contracts with temperature and moisture changes...as the temperature rises or the moisture content of the concrete increases, expansion takes place...as the temperature drops, the concrete will contract. The provision to accommodate movement at pre-determined locations with proper joint applications, prevents the development of stresses that could rupture the concrete.

Joint type and spacing will vary with each project according to the type of structure, climatic conditions and anticipated stresses in the concrete. The coefficient of thermal expansion in concrete is 0.0000055 per linear inch of concrete per degree Fahrenheit of temperature change, yielding approximately .66 inch of movement per 100 feet with a 100°F (38°C) temperature range.

To estimate expansion, multiply length in inches x number of degrees of anticipated temperature differential x 0.0000055. Use the resulting anticipated movement to determine correct thickness of the control joint and proper spacing for placement of the joint. Thinner joints (1/4", 3/8" or 1/2") (6.35mm, 9.53mm or 12.7mm) spaced at frequent intervals offer greater control than thicker joints spaced at greater intervals. The basic concept is to provide ample room for the concrete to expand and contract without creating damaging stresses and resultant cracking.

**ADDITIONAL EXPANSION JOINTS FROM W. R. MEADOWS CAN BE FOUND BY VISITING OUR WEBSITE: [www.wrmeadows.com](http://www.wrmeadows.com)**

*CONTINUED ON REVERSE SIDE...*

**USES**

**ASPHALT Expansion Joint** can be used in 80% of all control joint applications. It is ideally suited for joints in sidewalks, driveways, streets, single and multi-level floor slabs. Due to its unique self-sealing characteristic, no subsequent joint sealing is required.

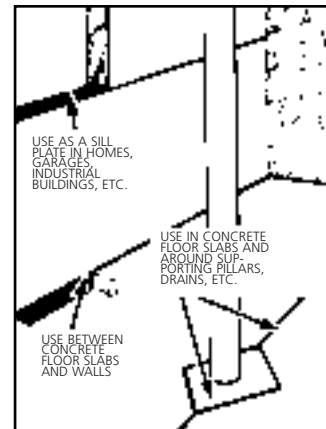
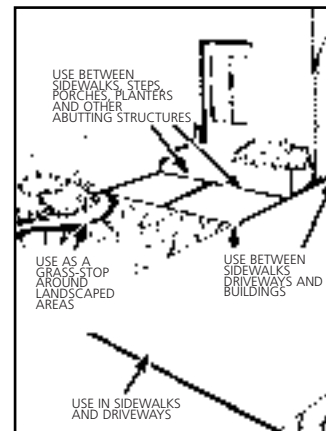
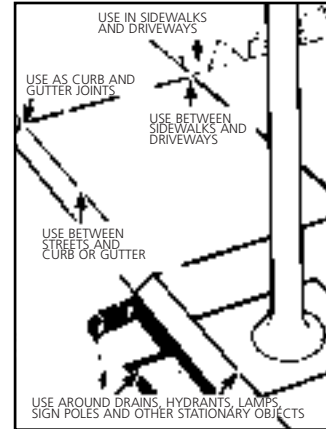
**FIBRE Expansion Joint** is ideal for use on highways, streets, airport runways, sidewalks, driveways, flatwork and scores of commercial and industrial applications. Refer to Data Sheet No. 320-F. To isolate filler from sealant, use SNAP-CAP® (Refer to Data Sheet No. 324). Seal with #164, HI-SPEC® or Cold-Applied SOF-SEAL® from W. R. MEADOWS for maximum protection from water infiltration, weathering and to assure proper performance. Refer to Data Sheet Nos. 220, 221, and 224.

**CERAMAR Flexible Foam Expansion Joint** is gray in color and provides an excellent joint filler and back-up material for use in either horizontal or vertical applications where expansion and contraction movements must be accommodated. CERAMAR is compatible with all currently popular cold-applied sealants, caulks and hot-pour joint sealing compounds. It is lightweight, highly flexible and easy to cut or form in the field without waste. CERAMAR compresses easily for use with shrinkage-compensating concrete and it may be used to relieve stress and pressure in concrete pavements. Refer to CERAMAR Data Sheet No. 323.

**HIGHLY FUNCTIONAL JOINTING AND SEALING SYSTEM:** Two excellent products, CERAMAR and GARDOX® Horizontal Sealant, may be used together to provide an excellent horizontal sealing system for plaza decks, sidewalks, driveways, commercial and industrial floors. Refer to GARDOX Data Sheet No. 226.

**SPONGE RUBBER Expansion Joint** is frequently used on bridge structures and sewage treatment plants that undergo rapid changes in temperature. Because of its excellent recovery capability, during wide temperature variations, SPONGE RUBBER is used around supporting pillars, drains, hydrants, lamp and sign posts, as well as in isolation applications or between materials having dissimilar coefficients of expansion.

**STANDARD AND SELF-EXPANDING CORK Expansion Joints** are used where high resiliency is needed, such as in sewage plants, flood walls, spillways, filtration plants and in numerous commercial and industrial applications. SELF-EXPANDING CORK is especially desirable where a constant friction-fit is required.





**FEATURES AND BENEFITS**

**ASPHALT**

- Non-absorbing
- Used in 80% of all control joint situations
- Protects against water infiltration
- Self sealing
- Permanent

**FIBRE**

- Non-extruding...versatile...offers a minimum of 70% recovery after compression
- A tough, lightweight, easy-to- use, semi-rigid joint filler available in strips and shapes fabricated to most requirements
- Easy to cut...dimensionally stable...not sticky in summer, or brittle in winter
- Manufactured in the U.S.A.
- Proven field performance

**CERAMAR**

- Gray color
- Lightweight, flexible foam...forms or wraps around curved or circular surfaces
- Cuts easily on the job with a razor knife...no breakage or waste
- Offers high resiliency and 99% recovery qualities...low compression values...non-extruding...virtually non-absorbent
- Resists ultraviolet degradation
- Non-impregnated...no staining or bleeding
- Bonds easily with common cartridge adhesives
- Non-gassing
- Compatible with all hot-or cold- applied sealants

**SPONGE RUBBER, STANDARD CORK and SELF-EXPANDING CORK**

- High resiliency with excellent recovery after compression
- Protects against water infiltration when properly sealed
- Easy to handle and install
- Offers isolation capabilities

**CONTROL JOINT SPECIFICATION DATA AND SIZE INFORMATION**

TYPE	CONFORMS TO OR MEETS SPECIFICATIONS	THICKNESS WIDTHS*	SLAB WIDTHS	STANDARD LENGTHS
ASPHALT	<ul style="list-style-type: none"> <li>•ASTM D 994</li> <li>•FEDERAL SPECIFICATION HH-F-341 F, TYPE III</li> <li>•AASHTO M 33</li> <li>•FAA SPECIFICATION Item P-610-2.7</li> </ul>	1/4"(6.35mm) 3/8"(9.53mm) 1/2"(12.7mm) 3/4"(19.05mm) 1"(25.4mm)	36" (914.4mm)	5' (1.52m) 6' (1.83m) 10' (3.05m)
FIBRE	<ul style="list-style-type: none"> <li>•ASTM D 1751</li> <li>•AASHTO M 213</li> <li>•FAA SPECIFICATION Item P-610-2.7</li> <li>•Corps of Engineers CRD-C 508</li> <li>•FEDERAL SPECIFICATION HH-F-341 F, Type I</li> </ul>	1/4"(6.35mm) 3/8"(9.53mm) 1/2"(12.7mm) 3/4"(19.05mm) 1"(25.4mm)	36", 48" (914.4mm, 1.22m)	10' (3.05m) Also available 5', 6', 12' (1.5, 1.83, 3.66m)
CERAMAR	<ul style="list-style-type: none"> <li>•ASTM D 1752, Sections 5.1 through 5.4 with the compression requirement &amp; modified to 10psi (.069 MPa) minimum and 25psi (.173 MPa) maximum</li> </ul>	1/4"(6.35mm) 3/8"(9.53mm) 1/2"(12.7mm) 3/4"(19.05mm) 1"(25.4mm)	48" (1.22m)	10' (3.05m)
SPONGE RUBBER	<ul style="list-style-type: none"> <li>•ASTM D 1752, Type I</li> <li>•FEDERAL SPECIFICATION HH-F-341 F, TYPE II, Class A</li> <li>•AASHTO M 153, Type I</li> <li>•FAA SPECIFICATION Item P-610-2.7</li> <li>•Corps of Engineers CRD-C 509, Type I</li> </ul>	1/4"(6.35mm) 3/8"(9.53mm) 1/2"(12.7mm) 3/4"(19.05mm) 1" (25.4mm)	36" (914.4mm)	10' (3.05m)
CORK	<ul style="list-style-type: none"> <li>•ASTM D 1752, Type II</li> <li>•FEDERAL SPECIFICATION HH-F-341 F, TYPE II, Class B</li> <li>•AASHTO M 15.3, Type II</li> <li>•FAA SPECIFICATION Item P-610-2.7</li> <li>•Corps of Engineers CRD-C 509, Type II</li> </ul>	1/4"(6.35mm) 3/8"(9.53mm) 1/2"(12.7mm) 3/4"(19.05mm) 1"(25.4mm)	36" (914.4mm)	10' (3.05m)
SELF-EXPANDING CORK	<ul style="list-style-type: none"> <li>•ASTM D 1752, TYPE III</li> <li>•FEDERAL SPECIFICATION HH-F-341 F, TYPE II, CLASS C</li> <li>•AASHTO M 153, TYPE III</li> <li>•FAA SPECIFICATION ITEM P-610-2.7</li> <li>•CORPS OF ENGINEERS CRD-C 509, TYPE III</li> </ul>	1/2"(12.7mm) 3/4"(19.05mm) 1" (25.4mm)	24" (610mm)	3' (.91m)

\*Pre-cut joint furnished in any desired width

## APPLICATION

The type of control joint and spacing used will vary with each project according to the type of structure, climatic conditions and anticipated stresses in the concrete. Thinner joints of 1/4" (6.35mm), 3/8" (9.53mm) or 1/2" (12.7mm) spaced at frequent intervals offer greater control than thicker joints spaced at greater intervals. The basic objective is to provide ample room for the concrete to expand or contract without creating damaging stresses. Expansion Joints should be positioned against forms at interrupting objects or columns, and against abutting structures prior to the placement of the concrete. ASPHALT Expansion Joint should be recessed 1/4" (6.35mm) below the concrete surface. A sealant is not required. FIBRE, CERAMAR, SPONGE RUBBER, CORK and SELF- EXPANDING CORK Expansion Joints should be recessed 1/2" (12.7mm) below the concrete surface to accept the joint sealant. To isolate filler from sealant, use SNAP CAP (Refer to Data Sheet No. 324).

SNAP CAP should be installed flush with the surface. After removal of the top section of the SNAP CAP, the joint opening is ready for sealing with a suitable sealant from W. R. MEADOWS. NOTE: A joint sealer is not required for ASPHALT Expansion Joint.

Suitable sealants for horizontal applications of CORK and SELF-EXPANDING CORK Expansion Joints are #164, HI-SPEC, POLY-JET®, SOF-SEAL, GARDOX, POURTHANE®, DECK-O-SEAL® and SAFE-SEAL® 3405. POURTHANE, GARDOX and DECK-O-SEAL are recommended for use with Sponge Rubber Expansion Joint. The recommended sealant for vertical applications is DECK-O-SEAL Gun Grade (formerly CM-60).

## Application Tools



Utility Knife



Roofer's Knife

## PRECAUTIONS

Sheets and cut strips of ASPHALT Expansion Joint Fillers should be stored on a flat surface. Silicone Sealants are not recommended for use with SPONGE RUBBER Expansion Joint. NOTE: SELF-EXPANDING CORK is shipped in cardboard cartons. This packaging should not be damaged or opened until time of installation. Cartons should not be exposed to weathering, heat or moisture.

Due to its light weight, CERAMAR may float and should be held in place by compression or with a mechanical attachment. Read and follow application information, precautions and Material Safety Data information.

**TO VERIFY MOST RECENT TECHNICAL DATA SHEET IS BEING USED, VISIT OUR WEBSITE: [www.wrmeadows.com](http://www.wrmeadows.com)**



## LIMITED WARRANTY

"W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order." Read complete warranty. Copy furnished upon request.

## Disclaimer

The information contained herein is included for illustrative purposes only, and to the best of our knowledge, is accurate and reliable. W. R. MEADOWS, INC. cannot however under any circumstances make any guarantee of results or assume any obligation or liability in connection with the use of this information. As W. R. MEADOWS, INC. has no control over the use to which others may put its product, it is recommended that the products be tested to determine if suitable for specific application and/or our information is valid in a particular circumstance. Responsibility remains with the architect or engineer, contractor and owner for the design, application and proper installation of each product. Specifier and user shall determine the suitability of products for specific application and assume all responsibilities in connection therewith.