



NO. 320

MasterFormat:  
03 15 00  
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AUGUST 2017  
(Supersedes June 2011)

## CONTROL JOINTS

EXPANSION ↔ CONTRACTION

### DESCRIPTION

**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.

**ASPHALT EXPANSION JOINT** 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.

**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 lb./ft.<sup>3</sup> (480.56 kg/m<sup>3</sup>).

**CORK EXPANSION JOINT** is produced from clean, selected, granulated cork bonded with a phenolic resin. It is highly resilient, will compress without extrusion, and recovers 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. Product may be cut on jobsite to exact size required.

### 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 predetermined 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 0.000055 per linear inch of concrete per degree Fahrenheit of temperature change, yielding approximately .66" of movement per 100' with a 100° F temperature range (approximately 1.7 cm of movement per 30.5 m with a temperature range of 38° C). To estimate expansion, multiply length in inches x number of degrees of anticipated temperature differential x 0.000055. 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") (6.35 mm, 9.53 mm, or 12.7 mm) 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.

*CONTINUED ON REVERSE SIDE...*

**USES**

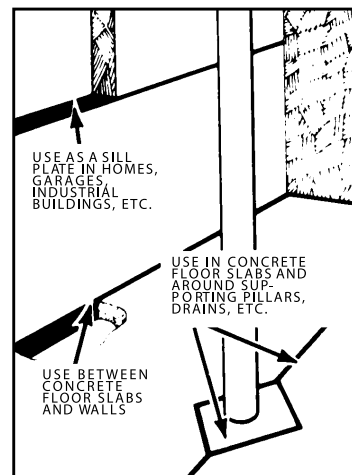
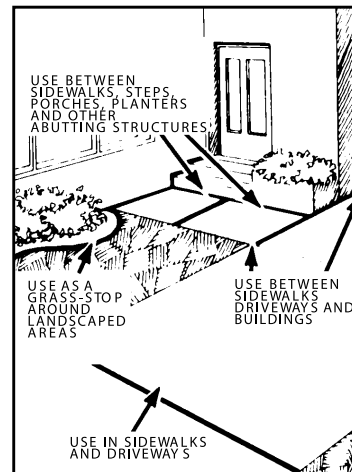
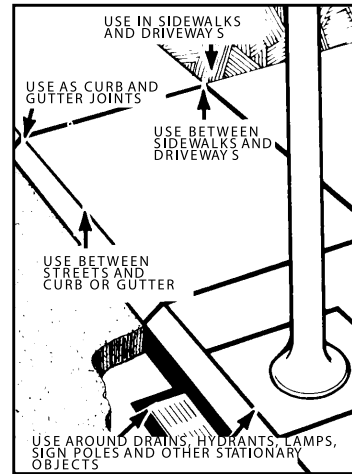
**FIBRE EXPANSION JOINT** is ideal for use on highways, streets, airport runways, sidewalks, driveways, flatwork, and scores of commercial and industrial applications. To isolate filler from sealant, use SNAP-CAP® from W. R. MEADOWS. Seal with POURTHANE® NS or POURTHANE SL from W. R. MEADOWS for maximum protection from water infiltration, weathering, and to assure proper performance.

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

**CERAMAR** flexible foam expansion joint is gray in color and provides an excellent joint filler and backup 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.

**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 EXPANSION JOINT is used around supporting pillars, drains, hydrants, and lamp and sign posts, as well as in isolation applications or between materials having dissimilar coefficients of expansion.

**CORK EXPANSION JOINT** and **SELF-EXPANDING CORK EXPANSION JOINT** are used where high resiliency is needed, such as in sewage plants, floodwalls, spillways, filtration plants, and numerous commercial and industrial applications. **SELF-EXPANDING CORK EXPANSION JOINT** is especially desirable where a constant friction-fit is required.



**FEATURES/BENEFITS**

**FIBRE EXPANSION JOINT**

- A tough, lightweight, easy-to-use, semi-rigid joint filler available in strips and shapes fabricated to most requirements.
- 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.

**ASPHALT EXPANSION JOINT**

- Non-absorbing.
- Used in 80% of all control joint situations.
- Protects against water infiltration.
- Self-sealing.
- Made in the U.S.A.

**CERAMAR**

- Gray color
- Lightweight, flexible foam ... forms or wraps around curved or circular surfaces.
- Cuts easily 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.
- Made in the USA

**SPONGE RUBBER EXPANSION JOINT, CORK EXPANSION JOINT and SELF-EXPANDING CORK EXPANSION JOINT**

- High resiliency with excellent recovery after compression.
- Protects against water infiltration when properly sealed.
- Easy to handle and install.
- Offers isolation capabilities.
- SPONGE RUBBER EXPANSION JOINT is made in the USA.

**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 D994</li> <li>•FEDERAL SPECIFICATION HH-F-341 F</li> <li>•AASHTO M 33</li> <li>•FAA SPECIFICATION Item P-610-2.7</li> </ul>	1/4" (6.35 mm) 3/8" (9.53 mm) 1/2" (12.7 mm) 3/4" (19.05 mm) 1" (25.4 mm)	36" (914.4mm)	5' (1.52 m) 6' (1.83 m) 10' (3.05 m)
FIBRE	<ul style="list-style-type: none"> <li>•ASTM D1751</li> <li>•AASHTO M 213</li> <li>•FAA SPECIFICATION Item P-610-2.7</li> <li>•Corps of Engineers CRD-C</li> <li>•FEDERAL SPECIFICATION HH-F-341 F, Type I</li> </ul>	3/8" (9.53 mm) 1/2" (12.7 mm) 3/4" (19.05 mm) 1" (25.4 mm)	36", 48" (914.4 mm, 1.22 m)	10' (3.05 m) Also available 5', 6', 12' (1.5, 1.83, 3.66 m)
CERAMAR	<ul style="list-style-type: none"> <li>•ASTM D1752, Sections 5.1 through 5.4 with the compression requirement modified to 10 psi (7.03 g/mm<sup>2</sup>) minimum and 25 psi (17.58 g/mm<sup>2</sup>) maximum</li> <li>•ASTM D5249, Type 2</li> <li>•ASTM D7174-05</li> </ul>	1/4" (6.35 mm) 3/8" (9.53 mm) 1/2" (12.7 mm) 3/4" (19.05 mm) 1" (25.4 mm)	48" (1.22 m)	10' (3.05 m)
SPONGE RUBBER	<ul style="list-style-type: none"> <li>•ASTM D1752, 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" (6.35 mm) 3/8" (9.53 mm) 1/2" (12.7 mm) 3/4" (19.05 mm) 1" (25.4 mm)	36" (914.4 mm)	10' (3.05 m)
CORK	<ul style="list-style-type: none"> <li>•ASTM D1752, Type II</li> <li>•FEDERAL SPECIFICATION HH-F-341 F, TYPE II, Class B</li> <li>•AASHTO M 153, 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" (6.35 mm) 3/8" (9.53 mm) 1/2" (12.7 mm) 3/4" (19.05 mm) 1" (25.4 mm)	36" (914.4 mm)	10' (3.05 m)
SELF-EXPANDING CORK	<ul style="list-style-type: none"> <li>•ASTM D1752, 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" (12.7 mm) 3/4" (19.05 mm) 1" (25.4 mm)	24" (610 mm)	3' (.91 m)

\*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" (6.35 mm), 3/8" (9.53 mm), or 1/2" (12.7 mm), 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" (6.35 mm) below the concrete surface. A sealant is not required. FIBRE EXPANSION JOINT, CERAMAR, SPONGE RUBBER EXPANSION JOINT, CORK EXPANSION JOINT, and SELF-EXPANDING CORK EXPANSION JOINT should be recessed 1/2" (12.7 mm) below the concrete surface to accept the joint sealant. To isolate filler from sealant, use SNAP-CAP. SELF-EXPANDING CORK EXPANSION JOINT should be installed in a concrete joint within 24 hours of pouring. The moisture present in the concrete and the heat of hydration is typically sufficient to cause the product to fully expand. NOTE: When installed in existing concrete, it will be necessary to apply clean, hot water [ $>180^{\circ}$  F ( $82.2^{\circ}$  C)] to the exposed edges of the cork to facilitate expansion. A pressure washer capable of producing hot water or a steam cleaner may be used to produce the hot water.

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

Recommended sealant for horizontal applications of FIBRE EXPANSION JOINT, SPONGE RUBBER EXPANSION JOINT, CORK EXPANSION JOINT and SELF-EXPANDING CORK EXPANSION JOINT is POURTHANE SL. POURTHANE NS is recommended for use with SPONGE RUBBER EXPANSION JOINT and all vertical applications.

## PRECAUTIONS

Sheets and cut strips of ASPHALT EXPANSION JOINT should be stored on a flat surface. Silicone sealants are not recommended for use with SPONGE RUBBER EXPANSION JOINT. SELF-EXPANDING CORK EXPANSION JOINT is shipped wrapped in moisture-proof paper and placed in cardboard cartons. The moisture-proof paper should not be opened until cutting and/or installation. Cartons should not be exposed to excessive/constant 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 Safety Data Sheet information.

## LEED INFORMATION

May help contribute to LEED credits:

- MRc9: Construction and Demolition Waste Management

**For most recent data sheet, further LEED information, and SDS, visit [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.