

DESCRIPTION

Thiokol 2235M is a high performance, non-sag, NSF approved chemical resistant elastomeric joint sealant. Due to its high polysulfide polymer content, it is resistant to many chemicals, shrinkage, aging, thermal stress and the effects of outdoor exposure.

TYPICAL APPLICATION

• Primer	Thiokol 415 @ 3–5 mils (concrete) / 2–3 mils (steel) <i>For fuel storage applications, use PolySpec 300EX Primer</i>
• Backer Rod	Customer supplied
• Sealant	Thiokol 2235M
• Options	Thiokol CR Chemical Resistant Joint Sealant System adds PolySpec 196BA and PolySpec 196SL Thiokol DC Dual Containment Joint Sealant System adds Thiokol RLP 2378+ and Engineering Fabric

PERFORMANCE DATA

Tensile Strength (ASTM D-412)	150–200 psi
Elongation (ASTM D-412)	500–550%
Hardness, Shore A (ASTM D-2240)	25–30
Joint Movement	± 25%
VOC	0.00 lb/gal; 0.00 gm/L
Volume Solids	100%

STORAGE & INSTALLATION

Storage Environment	Dry area, 65–80°F
Application Temperature, ambient	50–95°F
Application Temperature, substrate	Minimum 5°F above dew point
Shelf Life	1 year
Pot Life, @ 77°F	1 hour
Tack Free, @ 77°F	6 hours
Full Cure, @ 77°F	7 days

Material cures more slowly at cooler temperatures, and working time will be substantially reduced at higher temperatures. In hot weather, material should be cooled to 65°F to 80°F prior to mixing and application to improve workability and avoid shortened pot life. The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result.

CONSIDERATIONS & LIMITATIONS

1. Do not thin with solvents unless advised to do so by PolySpec.
2. Confirm product performance in specific chemical environment prior to use.
3. Prepare substrate according to “Surface Preparation” portion of this document.
4. Always use protective clothing, gloves and goggles consistent with OSHA regulations during use. Avoid eye and skin contact. Do not ingest or inhale. Refer to Material Safety Data Sheet for detailed safety precautions.
5. For industrial/commercial use. Installation by trained personnel only.

THIOKOL
2235M 

TECHNICAL DATA SHEET

Industrial Polysulfide Joint Sealant, Non Sag

BENEFITS

- Retains elasticity even as concrete moves; maintains flexibility over time
- Resists mild acids, alkalies and petroleum products
- Resists effects of sunlight, rain, snow, ozone, aging, shrinkage and cyclic temperature changes, even after years of service
- Contains no volatile solvents

RECOMMENDED USES

Concrete expansion joints:

- Water treatment & storage facilities
- Bridges
- Roadways
- Warehouse floors
- Secondary containment dike walls & floors
- Tank chine seals
- Concrete panels

APPROVALS

- Certified NSF Standard 61, Sec. 6
- MIL TT-S-00227, Type II, non-sag
- ASTM C-920, Type M, Grade NS, Class 25, Use NT, M, G, A and O
- ANSI A116.1

GENERIC DESCRIPTION

Polysulfide Sealant

STANDARD COLORS

Bronze Gray

PACKAGING

1.5-Gallon Unit

COVERAGE

JOINT SIZE	COVERAGE PER UNIT
1/2" W x 1/4" D	220 linear ft
1/2" W x 3/8" D	140 linear ft
3/4" W x 3/8" D	95 linear ft
3/4" W x 1/2" D	70 linear ft
1" W x 1/2" D	52 linear ft
1" W x 3/4" D	48 linear ft

Coverages are theoretical only.

SURFACE PREPARATION

Concrete: Apply only to clean, dry and sound concrete substrates that are free of all coatings, sealers, curing compounds, oils, greases or any other contaminants.

- *New concrete should be cured a minimum of 28 days.*
- *Concrete that has been contaminated with chemicals or other foreign matter must be neutralized or removed.*
- *Remove any laitance or weak surface layers.*
- *Concrete should have a minimum surface tensile strength of at least 300 PSI per ASTM D-4541.*
- *Surface profile shall be CSP-3 to CSP-5 meeting ICRI (International Concrete Repair Institute) standard guideline #03732 for coating concrete, producing a profile equal to 60-grit sandpaper or coarser. Prepare surface by mechanical means to achieve this desired profile.*
- *Blow joint with compressed air to remove dust, standing water and other potential contaminants.*

Steel: For immersion service, "White Metal" abrasive blast with an anchor profile of 2–4 mils in accordance with Steel Structures Painting Council Specification SP-5-63 or NACE No. 1 is required. For splash and spillage exposure, "Near White" SP-10-63 or NACE No. 2 is required.

Refer to PolySpec Surface Preparation Guidelines for more details.

INSTALLATION STEPS

BASE SYSTEM: Thiokol 2235M HP High Performance Joint Sealant System

1. Prime surface with Thiokol 415 Primer. See data sheet for application details.
NOTE: For primary fuel containment (concrete), use PolySpec 300EX Primer.
2. Install a backer rod into the joint; the backer rod should be compressed 25%. When a backer rod is not feasible, bond breaker tape is acceptable.
NOTE: Ideally, the joint depth should be one half the joint width.
3. Add Component B to Component A and mix at slow speed (250–300 RPM) with a 1/2" drill and jiffy-mixing paddle until material is completely blended. Scrape down sides of container and mixing paddle periodically during mixing; thorough blending of the components is essential for maximum performance of the sealant.
NOTE: Typical mixing time is 3–5 minutes.
4. Thiokol 2235M is supplied in a non-sag consistency that will gun easily with conventional caulking equipment. Fill joint completely.
NOTE: Proper width to depth ratios must be maintained.
5. Immediately after application, dry tool the sealant using a tooling stick or finger. Use light pressure to ensure positive and complete contact of the sealant to the joint surfaces. Tooling the bead in a concave shape helps achieve the desired hour glass shape of the finished bead.
NOTE: Care must be taken to avoid contamination of open joints. Blocking may be required.

OPTIONAL UPGRADE: Thiokol 2235M CR Chemical Resistant Joint Sealant System

1. Perform steps 1–5 of Thiokol 2235M HP System, above.
2. Apply PolySpec 196BA Bonding Agent. See data sheet for application details.
3. Using masking or duct tape, mask off edges of the expansion joint, leaving 1/4" to 1/2" of the concrete exposed.
4. Apply two coats of PolySpec 196SL. See data sheet for application details.
NOTE: The second coat can be applied 20 to 30 minutes after the first coat.
5. Pull masking tape 10–15 minutes after the second coat is applied.

OPTIONAL UPGRADE: Thiokol 2235M DC Dual Containment Joint Sealant System

1. Perform steps 1–5 of Thiokol 2235M HP System, above.
2. Abrasive blast concrete surface 4" on each side of the expansion joint.
3. Using duct tape, mask off edges of the expansion joint, leaving 3-1/2" to 4" of the concrete exposed.
4. Prime the prepared concrete surface with Thiokol 415 Primer.
5. Prepare and apply one 20 mil coat of Thiokol RLP 2378+ by roller. See data sheet for application details.
6. Immediately lay engineering fabric into coating. Press it in with a dry roller.
7. Saturate the fabric with an additional 20 mil coat of Thiokol RLP 2378+.
8. Before the coating cures, pull all tape.

For best results, clean tools and equipment with PolySpec® All Purpose Cleaner, a nonflammable and non-evaporating cleaner. Always wear gloves when using this product.

C-12R:1H / DOC 2235M-TDS

PolySpec is a ® Registered Trademark of PolySpec L.P.

Thiokol is a ® Registered Trademark of Toray Fine Chemicals Co., Ltd.

Rev 03/05

PolySpec, L.P. warrants its products to be free from defects in material and workmanship. PolySpec's sole obligation and Buyer's exclusive remedy in connection with the products shall be limited, at PolySpec's option, to either replacement of products not conforming to this warranty or credit to Buyer's account in the invoiced amount of the nonconforming products. Any claim under this Warranty must be made by Buyer to PolySpec in writing within five days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify PolySpec of such nonconformance as required herein shall bar Buyer from recovery under this warranty.

PolySpec makes no other warranties concerning this product. No other warranties, either expressed or implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply. In no event shall PolySpec be liable for consequential or incidental damages.

Any recommendation or suggestion relating to the use of the products made by PolySpec, whether in its technical literature, or in response to specific inquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyers having requisite skill and know-how in the industry, and therefore it is for the Buyer to satisfy itself of the suitability of the products for its own particular use, and it shall be deemed that Buyer has done so, at its sole discretion and risk. Variation in environment changes in procedures of use, or extrapolation of data may cause unsatisfactory results. PolySpec cannot guarantee that color will conform to sample, if provided.

© Copyright 2005 PolySpec L.P. All rights reserved. Published technical data and instructions are subject to change without notice. Please visit the online catalog at www.polyspec.com for the most current technical data and instructions. Or, you may contact your PolySpec representative for current technical data and instructions.

PolySpec, L.P. warrants its products to be free from defects in material and workmanship. PolySpec's sole obligation and Buyer's exclusive remedy in connection with the products shall be limited, at PolySpec's option, to either replacement of products not conforming to this warranty or credit to Buyer's account in the invoiced amount of the nonconforming products. Any claim under this Warranty must be made by Buyer to PolySpec in writing within five days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify PolySpec of such nonconformance as required herein shall bar Buyer from recovery under this warranty.

PolySpec makes no other warranties concerning this product. No other warranties, either expressed or implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply. In no event shall PolySpec be liable for consequential or incidental damages.

Any recommendation or suggestion relating to the use of the products made by PolySpec, whether in its technical literature, or in response to specific inquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyers having requisite skill and know-how in the industry, and therefore it is for the Buyer to satisfy itself of the suitability of the products for its own particular use, and it shall be deemed that Buyer has done so, at its sole discretion and risk. Variation in environment changes in procedures of use, or extrapolation of data may cause unsatisfactory results. PolySpec cannot guarantee that color will conform to sample, if provided.