TECHNICAL DATA SHEET – THIOKOL® 2235M

DESCRIPTION
THIOKOL 2235M is a high performance, non-sag, certified per NSF/ANSI Standard 61, 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 5050 Primer @ 3-5 mils (concrete)
THIOKOL 5050 Primer @ 2-3 mils (steel)

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

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TENSIILE STRENGTH (ASTM D - 412)</td>
<td>150-200 psi</td>
</tr>
<tr>
<td>ELOATION (ASTM D - 412)</td>
<td>500-550%</td>
</tr>
<tr>
<td>HARDNESS, SHORE A (ASTM D - 2240)</td>
<td>25-30</td>
</tr>
<tr>
<td>JOINT MOVEMENT</td>
<td>±25%</td>
</tr>
<tr>
<td>VOC</td>
<td>0.0 lb/gal; 0.0 gm/L</td>
</tr>
<tr>
<td>VOLUME SOLIDS</td>
<td>100%</td>
</tr>
<tr>
<td>VOC EMISSIONS (TVOC, CDPH V1.1-2010)</td>
<td>&lt;0.5 mg/m²</td>
</tr>
</tbody>
</table>

APPROVALS
- Certified per NSF/ANSI Standard 61
- MIL TT-S-00227, Type II, non-sag
- ASTM C-920, Type M, Grade NS, Class 25, Use NT, M, G, A and O
- Meets IAQ emission requirements for California’s Sec. 01350 and Appendix B

BENEFITS
- Retains elasticity even as concrete moves; maintains flexibility over time
- Resists mild acids, alkalis 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

GENERAL DESCRIPTION: Polysulfide Sealant

STANDARD COLORS: Gray

PACKAGING: 1.5-Gallon Unit

COVERAGE:

<table>
<thead>
<tr>
<th>JOINT SIZE</th>
<th>COVERAGE PER GALLON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot; W x 1/4&quot; D</td>
<td>154 linear ft</td>
</tr>
<tr>
<td>1/2&quot; W x 1/2&quot; D</td>
<td>77 linear ft</td>
</tr>
<tr>
<td>3/4&quot; W x 1/2&quot; D</td>
<td>51 linear ft</td>
</tr>
<tr>
<td>1&quot; W x 1/2&quot; D</td>
<td>38 linear ft</td>
</tr>
<tr>
<td>1&quot; W x 3/4&quot; D</td>
<td>25 linear ft</td>
</tr>
</tbody>
</table>

Coverages are theoretical only.


**TECHNICAL DATA SHEET – THIOKOL® 2235M**

**STORAGE & INSTALLATION**

<table>
<thead>
<tr>
<th>STORAGE ENVIRONMENT</th>
<th>APPLICATION TEMPERATURE, AMBIENT</th>
<th>APPLICATION TEMPERATURE, SUBSTRATE</th>
<th>SHELF LIFE</th>
<th>POT LIFE, @ 77ºF</th>
<th>TACK FREE, @ 77ºF</th>
<th>FULL CURE, @ 77ºF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry area, 65-80ºF</td>
<td>50-95ºF</td>
<td>Minimum 5º above dew point</td>
<td>18 month</td>
<td>1 hour</td>
<td>6 hours</td>
<td>7 days</td>
</tr>
</tbody>
</table>

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 65ºF to 80ºF 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 ITW Polymers Sealants North America, Inc.
2. Confirm product performance in specific chemical environment prior to use.
3. Prepare substrate according to “Surface Preparation” portion of this document.
4. For joint widths and depths greater than 2 inches please contact ITW Polymers Sealants North America, Inc. for technical assistance and application recommendations.
5. Always use protective clothing, gloves and goggles during use. Avoid eye and skin contact. Do not ingest or inhale. Refer to Safety Data Sheet for detailed safety precautions.
6. For industrial/commercial use. Installation by trained personnel 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 latex 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.**

**STEEL:**

**Prime System #1:**

1. Abrasive blast concrete surface 4" on each side of the expansion joint.
2. Using duct tape, mask off the concrete 3" on both sides of the expansion joint.
3. Saturate the fabric with an additional 20 mil coat of THIOKOL 2235M CR Chemical Resistant Joint Sealant System

**Prime System #2:**

1. Perform steps 1–5 of THIOKOL 2235M HP System, above.
2. Apply PolySpec 196BA Bonding Agent. Must be left open for chemical reaction for 16 hours. See data sheet for application details.
3. Apply two coats of PolySpec 196SL. See data sheet for application details.
4. Pull masking tape 10–15 minutes after the second coat is applied.
5. Before the coating cures, pull all tape.

For best results, clean tools and equipment with MEK or xylene. Always wear gloves when using this product.

**APPLICATION STEPS**

**BASE SYSTEM: THIOKOL 2235M HP High Performance Joint Sealant System**

1. Prime surface with THIOKOL 5050 Primer. See data sheet for application details.
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 2 part sealant 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. The best installation is done with a bulk caulking gun such as an Albion model #DL-45-T13 or suitable equal.

**NOTE:** Proper width to depth ratios must be maintained.

5. Immediately after application, dry tool the sealant using a spatula. Use light pressure to ensure positive and complete contact of the sealant to the joint surfaces. Non-sag sealants should be tooled with a suitable sealant spatula with a rounded tip similar to the 258 series by Albion to provide a proper tool finish thereby creating the desired hour glass configuration. Spatulas should be slightly wider than the width of the expansion joint.

**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. Must be left open for chemical reaction for 16 hours. 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.
5. The second coat can be applied 20 to 30 minutes after the first coat.
6. 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 the concrete 3" on both sides of the expansion joint.
4. Prime the prepared concrete surface with Thikol 5050 Primer.
5. Prepare and apply one 20 mil coat of THIOKOL RLP 2378+ by roller. See data sheet for application details.
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 MEK or xylene. Always wear gloves when using this product.

NOTE:

- THIOKOL is a Registered Trademark of ITW Polymers Sealants North America, Inc.
- PolySpec is a Registered Trademark of ITW Polymers Sealants North America, Inc.
- DOC 2235M-TDS
- 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 ITW Polymers Sealants North America, Inc. representative for current technical data and instructions.

Any recommendation or suggestion relating to the use of the products made by ITW Polymers Sealants North America, Inc. whether in its technical literature, or in response to specific inquiry, or otherwise, is based on data referred to as reliable; however, the products and information are intended for use by buyers having requisite skill and knowledge, or for the buyer to satisfy itself of the suitability of the products for its own particular use, and shall be deemed that Buyer has done so, at its sole discretion and risk. Variation in environmental changes in procedures of use, or extrapolation of data may cause unsatisfactory results. ITW Polymers Sealants North America, Inc. cannot guarantee that color will conform to sample, if provided.

ITW Polymers Sealants North America, Inc.
111 S. Nursery Road • Irving, TX 75060
Phone: +1 972 438-9111 • Fax: +1 972-554-3939 • www.polyspec.com

Registered Trademark of ITW Polymers Sealants North America, Inc.