



TECHNICAL DATA SHEET - THIOKOL® 2235M

INDUSTRIAL POLYSULFIDE JOINT SEALANT, NON-SAG

Rev: 1/2023

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

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	0.0 lb/gal; 0.0 gm/L
VOLUME SOLIDS	100%
VOC EMISSIONS (TVOC, CDPH V1.1-2010)	<0.5 mg/m ²

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

GENERIC DESCRIPTION: Polysulfide Sealant

STANDARD COLORS: Gray

PACKAGING: 1.5-Gallon Unit

COVERAGE:

JOINT SIZE	COVERAGE PER GALLON
1/2" W x 1/4" D	154 linear ft
1/2" W x 1/2" D	77 linear ft
3/4" W x 1/2" D	51 linear ft
1" W x 1/2" D	38 linear ft
1" W x 3/4" D	25 linear ft

Coverages are theoretical only.

STORAGE & INSTALLATION

STORAGE ENVIRONMENT	Dry area, 65-80°F
APPLICATION TEMPERATURE, AMBIENT	50-95°F
APPLICATION TEMPERATURE, SUBSTRATE	Minimum 5° above dew point
MAX OPERATING TEMPERATURE	150°F
SHELF LIFE	18 months
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 Holcim Solutions and Products US, LLC.
2. Confirm product performance in specific chemical environment prior to use.
3. Prepare substrate according to "Surface Preparation" portion of this document.
4. Due to the elongation and flexibility of the sealant, top coating with a more rigid coating or sealant is not recommended.

5. For joint widths and depths greater than 2 inches please contact Holcim Solutions and Products US, LLC., for technical assistance and application recommendations.
6. 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.
7. 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 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.

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 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 caulk 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 concave 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.
4. Apply two coats of PolySpec 196SL. See data sheet for application details.
5. **NOTE:** 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 Thiokol 5050 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.

MIX RATIO - 15:1.2vol

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.

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THIOKOL® 5050 PRIMER FOR POLYSULFIDE SEALANTS “THIOKOL® 2235M”

Low viscosity primer used to prime concrete and steel surfaces for THIOKOL polysulfide sealants.

PACKAGING: 0.25-Gallon Unit

THIOKOL® 5050

THIOKOL® 2235M ポリサルファイドジョイントシーラント用、コンクリートや鉄表面の下塗りに使用する低粘度プライマー

PACKAGING: 0.25-Gallon Unit



TECHNICAL DATA SHEET - THIOKOL® 5050 PRIMER FOR POLYSULFIDE SEALANTS

Rev: 4/2023

DESCRIPTION

THIOKOL® 5050 primer is a low viscosity primer used to prime concrete and steel surfaces for THIOKOL polysulfide sealants.

TYPICAL APPLICATION

PRIMER	THIOKOL® 5050 Primer @ 700-800 linear ft/unit (concrete) – 2-3 mils (steel)
SEALANT	THIOKOL® polysulfide sealant system

PERFORMANCE DATA

VOC	0.0 gm/L
VOLUME SOLIDS	65%

BENEFITS

- Low viscosity formulation penetrates and seals concrete pores
- Easy 1:1 volume mixing
- Easy to apply
- Fast recoat time

RECOMMENDED USES

- Concrete and steel primer as part of a complete THIOKOL® Sealant System

GENERIC DESCRIPTION: Epoxy/Polysulfide Primer

STANDARD COLORS: Clear Amber

PACKAGING: 0.25-Gallon Unit

MIX RATIO: 1R: 1H

COVERAGE:

½" – 960 linear ft/unit
1" – 480 linear ft/unit

700–800 linear ft/unit (concrete)
1100-1300 linear ft/unit (steel)

May vary depending on concrete porosity.

STORAGE & INSTALLATION

STORAGE ENVIRONMENT	Dry area, 65-80°F
APPLICATION TEMPERATURE, AMBIENT	50°-95°F
APPLICATION TEMPERATURE, SUBSTRATE	Minimum 5° above dew point
SHELF LIFE	1 year
POT LIFE, @ 77°F	3 hours
RECOAT TIME FOR CONCRETE, @ 77°F	min 2 hours / max 36 hours
RECOAT TIME FOR STEEL, @ 77°F	min 4 hours / max 36 hours

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 Holcim Solutions and Products US, LLC.
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 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.

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.
- Moisture vapor transmission should be 3pounds or less per 1,000 square feet over a 24-hour time period, as confirmed through a calcium chloride test, as per ASTM E-1907. Quantitative relative humidity (RH) testing, ASTM F-2170, should confirm concrete RH results <75%.
- All surface irregularities, cracks, expansion joints and control joints should be properly addressed prior to application.
- Outgassing may occur due to the porosity of some concrete surfaces. To reduce the effect of outgassing, the primer and coating should be applied when the temperature of the concrete substrate is dropping. This usually occurs in the evening; however, the concrete substrate temperature should be measured with a surface thermometer for verification. Double priming will greatly reduce the effects of outgassing by additionally filling the pores in the concrete.

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.

INSTALLATION STEPS

1. Component A Resin should be premixed prior to using due to possible additive separation.
2. Pour Component B Hardener into the Component A Resin pail and mix by hand for a minimum of two minutes. Scrape the side of the pail to ensure the entire product has been properly mixed; any unmixed material left on the side of the pail will not cure.
3. THIOKOL 5050 Primer can be applied by brush.
4. Allow primer to cure within recommended recoat time before proceeding to application of THIOKOL sealant.
5. For best results, clean tools and equipment with MEK or xylene. Always wear gloves when using this product.

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