

## DESCRIPTION

Thiokol LPE 5020 is a high solids, two-component, fast setting elastomeric coating suited for direct exterior application to previously coated structures and for corrosion protection of steel and concrete substrates. Developed as part of the Federal Government's Small Business Innovative Research (SBIR) Program, Thiokol LPE 5020's unique chemistry combines the durability and toughness of an epoxy resin with the adhesion and flexibility benefits of liquid polysulfide.

## TYPICAL APPLICATION

|            |                                    |
|------------|------------------------------------|
| • Basecoat | Thiokol LPE 5020 @ 10–20 mils      |
| • Topcoat  | Thiokol LPE 5020 @ 16–20 mils      |
| • Options  | TuffRez 236 topcoat @ 3-5 mils WFT |

## PERFORMANCE DATA

|   |                       |
|---|-----------------------|
| Tensile Strength (ASTM D-412)                                 | 260–280 psi           |
| Elongation (ASTM D-412)                                       | 100–120%              |
| Conical Mandrel Bend, @ -20°F (ASTM D-522)                    | PASS                  |
| Hardness, Shore A (ASTM D-2240)                               | 60–65                 |
| Bond Strength (ASTM D-4541)                                   | 728 psi               |
| Moisture Vapor Transmission, g/m <sup>2</sup> /hr (ASTM E-96) | 0.53                  |
| Permeance, perms  | 0.875                 |
| VOC   | 0.08 lb/gal; 9.6 gm/L |
| Volume Solids @ 220°F (EPA Method 24): 99% / @ 95°F: 100%     |                       |

## STORAGE & INSTALLATION

|                                    |                             |
|------------------------------------|-----------------------------|
| Storage Environment                | Dry area, 65–85°F           |
| Application Temperature, ambient   | 50–95°F                     |
| Application Temperature, substrate | Minimum 5°F above dew point |
| Operation Temperature, maximum     | 170°F                       |
| Shelf Life                         | 6 months                    |
| Pot Life, @ 77°F                   | 15–20 minutes               |
| Full Service, @ 77°F               | 4 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. In time, color may lose some luster; some chalking may also occur. These events will not adversely affect the coating system's overall performance.
2. This coating is not intended for the following applications: wearing surfaces, including concrete slabs on grade (decks, walkways, floors); surfaces subjected to cycled immersion (splash zone); buried pipe; surfaces exposed to temperatures above 170°F; surfaces below grade; surfaces requiring waterproofing; vehicles or aircraft.
3. Do not thin with solvents unless advised to do so by PolySpec.
4. Confirm product performance in specific chemical environment prior to use.
5. Prepare substrate according to "Surface Preparation" portion of this document.
6. Do not apply to slabs on grade unless a heavy unruptured vapor barrier has been installed under the slab.
7. 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.
8. For industrial/commercial use. Installation by trained personnel only.

# THIOKOL<sup>®</sup> LPE<sup>™</sup> 5020

## TECHNICAL DATA SHEET

### Concrete & Steel Coating, Elastomeric Polysulfide, Fast Set

## BENEFITS

- Very fast set time
- Low stress cure
- Easy mix and application
- Flexibility beyond conventional tank linings
- High impact resistance
- 100% solids at application temperatures

## RECOMMENDED USES

- Overcoat marginally sound coating systems and/or provide corrosion protection:
  - Bridges
  - Fuel tanks
  - Water tanks
  - Offshore structures
  - Structural steel
  - Antenna towers
  - Concrete structures
- Roof coating for tanks & buildings exposed to atmospheric corrosion

## APPROVALS

- MPI #213 Barrier Coating, Two Coat, Low VOC for Industrial Maintenance
- Meets GPS-1 and GPS-2 Standards

## GENERIC DESCRIPTION

Novolac Epoxy-Modified Polysulfide

## STANDARD COLORS

Black, Gray

Contrasting colors should be used for basecoat and topcoat to ensure complete coverage.

## PACKAGING

4.5-Gallon Unit

## COVERAGE

80 ft<sup>2</sup> / gallon @ 20 mils

## 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 3 pounds 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 steel surfaces, a “Near White Metal”** ultra high-pressure wash or abrasive blast with anchor profile of 2–4 mils in accordance with Steel Structures Painting Council Specification SP-10 or NACE No. 2 is required.

**Marginally Sound Substrates:** Thiokol LPE 5020 can be applied over marginally sound substrates to encapsulate the substrate. Please contact your PolySpec representative for specific surface preparation guidelines.

**Refer to PolySpec Surface Preparation Guidelines for more details.**

## INSTALLATION STEPS

1. Apply PolySpec 300EX (concrete substrates) or for steel optional spot priming use. See data sheet for application details.
2. Independently premix each component prior to using in order to disperse any possible settling that may occur during transportation and storage.
3. Prepare and apply LPE 5020 according to one of the methods outlined below:
  - a. **Plural Component Airless Spray Equipment** (recommended)  
Plural component airless spray equipment must be capable of heating both LPE 5020 components to 90–140°F (to improve atomization properties).
  - b. **Batch Mixing for Roller, Squeegee, Brush, Airless Spray**  
Pour Component B Hardener into Component A Resin pail. Mix well using a mechanical jiffy-type mixer operated at low speed until a consistent color is attained. Scrape container sides to ensure a proper blend.  
Apply by roller, squeegee, brush or airless spray.  
*NOTE: Work very quickly due to the product's short pot life.*
4. Minimum recoat time is 2–4 hours; maximum recoat time is 72 hours at normal temperatures.  
*NOTE: If more than 72 hours have passed since installation of the first coat, contact PolySpec for assistance.*
5. 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.

## CHEMICAL RESISTANCE GUIDE

| CONTACT MATERIAL         | RATING         | KEY:   |
|--------------------------|----------------|--|
| Distilled Water          | R              | R = Recommend                                      |
| Ethanol                  | C              | R <sup>1</sup> = Slight discoloration              |
| Glacial Acetic Acid, 20% | R <sup>1</sup> | C = Conditional<br>(some discoloration, softening) |
| Hexanes                  | R <sup>1</sup> | NR = Not recommended                               |
| Hydrochloric Acid, 10%   | R              |  |
| Hydrochloric Acid, 37%   | NR             |  |
| Kerosene                 | R              |  |
| Methanol                 | C              |  |
| Methyl Ethyl Ketone      | C              |  |
| NaCl (5%) in Water       | R              |  |
| Sodium Hydroxide, 15%    | R <sup>1</sup> |  |
| Sodium Hydroxide, 50%    | R <sup>1</sup> |  |
| Sulfuric Acid, 20%       | R              |  |
| Sulfuric Acid, 50%       | NR             |  |
| Sulfuric Acid, 98%       | NR             |  |
| Toluene                  | C              |  |
| Unleaded Gasoline        | R <sup>1</sup> |  |

1R:2H / DOC LPE5020-TDS

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