

SPE-D-PATCH

Revision: September 2011
Supersedes all previous publications



Product Description

LAMBCO® SPE-D-PATCH is a rapid setting concrete patching compound packaged as a dry powder requiring only the addition of clean potable water or **ACRYLBOND™** (Lambert's liquid acrylic resin concrete admixture). **LAMBCO® SPE-D-PATCH** is a blend of the following raw materials: portland cements for high early strengths, specially selected aggregates that increase hardness qualities, additives to control the rate of set, plus a dry form of acrylic resin modifier that increases the cohesiveness and bond strength. This unique blend of raw materials provides superior product workability, a fast set time, and eliminates shrinkage stress at the glue line of concrete repairs, which is one of the main reasons for failure of concrete repairs.

LAMBCO® SPE-D-PATCH is designed for quick patch and repair work having an initial set time of 12 minutes and a final set time of 45 minutes. After the initial set, it may be shaved or sculptured to conform to the contours of the surrounding surface. **LAMBCO® SPE-D-PATCH** is the ideal product for restoring disintegrated or broken concrete areas both old and new.

LAMBCO® SPE-D-PATCH is used to repair many types of construction faults in both precast and cast-in-place concrete construction. It is used where fast setting cement is required for quick repairs. The repairing of pre-stress panels, concrete pipe, culverts, beams and concrete planks/slabs are a few of the many uses for **LAMBCO® SPE-D-PATCH**.

Installation

Before using this product, please refer to the Material Safety Data Sheet for additional information. Proper handling precautions **MUST** be followed. The conditions of use, handling, and application of this product and information (whether verbal or written), including any suggested formulations and recommendations, are beyond Lambert Corporation's control. Therefore, it is imperative that testing be performed to determine satisfaction and suitability for intended use and health, safety, and environmental issues. The following information is meant as a guideline of best industry practices. While Lambert Corporation does suggest adherence to these guidelines, unforeseeable variables and/or developed successful installer practices may cause variation in methods and/or results.

Surface Preparation

Improper surface preparation can result in less than acceptable **LAMBCO® SPE-D-PATCH** performance. It is very easy to blame adhesion problems that occur on the patching material being applied when poor surface preparation is really where the fault lies. Concrete substrates should be cured properly and structurally sound. To ensure proper adhesion, the surface must be thoroughly cleaned of all dirt, dust, grease, oil, wax, release agents, curing and sealing compounds, loose, "punky" concrete or anything else that would interfere with the normal concrete bond or the chemical action bonding of cementitious products. Concrete removal and substrate preparation should provide a minimum depth of 1/4-inch (6.4mm) for best repairs.

Where hard trowelled, glassy smooth concrete is encountered, it is recommended that the surface be scarified, acid etched, or sandblasted, then thoroughly rinsed with clean water. Surface should have a profile of miniature ridges and valleys that give concrete "teeth" to form a successful bond. Concrete substrates to be repaired must be pre-dampened but no standing water should remain. Insufficient moisture at the bond or glue line can result in failure.

When bonding onto steel or other metal surfaces remove all scale, rust, and paint, then place wire lath around metal surface. Remove any loose or weak concrete. Lambert Corporation suggests using one of our compatible epoxy products to increase the bond to metal surfaces. Contact Lambert Corporation for installation instructions and/or any questions regarding compatible products.

Priming Concrete Surfaces

Moisten substrate with clean water using brush or fine spray. This procedure will prevent dry porous concrete from absorbing or wicking water out of the patch mixture prior to its final set thus causing bond failure, shrinkage cracking, or a soft punky **LAMBCO® SPE-D-PATCH**. The slurry coat is simply **LAMBCO® SPE-D-PATCH** with additional water added for a pancake batter like consistency. This is brush applied to the entire repair zone. It is important to apply the repair mortar before the slurry coat dries. The optimum time to apply a material to the slurry is when the slurry has a dull sheen. Do not apply the repair material when the slurry is glossy (wet) or when it has dried to a completely flat finish. The open time of a slurry coat is about 10-15 minutes. The application of Lambert's liquid acrylic resin compound as a coating to the substrate and in the mix in place of water will enhance bond and strength qualities while also reducing porosity at the glue line.

Mixing and Placement

Mix a 50 pounds (22.7kg) unit **LAMBCO® SPE-D-PATCH** with 4.5 quarts (4.3L) of potable water or Lambert's liquid acrylic resin compound. Always add dry powder to correct amount of liquid and mix to a smooth workable consistency. Care should be taken not to make mixture to "soupy". Mixing of several containers at one time is discouraged because of fast set time. Use only clean, potable water for mixing. Lambert's liquid acrylic resin concrete admixture is recommended with **LAMBCO® SPE-D-PATCH** to increase bond on thin applications of 1/4-inch (6.4mm) to 3/4-inch (19.1mm). Apply mixture to the prepared surface and trowel into place using enough pressure to force the **LAMBCO® SPE-D-PATCH** into the concrete substrate. Force material against edge of repair, working toward center. After filling repair, consolidate, then screed. Finish with trowel until smooth and level with surrounding surface. Do not over trowel before initial set or sprinkle water on surface to aid in finishing. Should mixture become stiff, dip trowel in Lambert's liquid acrylic resin concrete admixture for improved workability.

For repair depths greater than 2-inches (5.1 cm), **LAMBCO® SPE-D-PATCH** can be modified with the addition of clean pea gravel (3/8-inch – 9.5mm) to a maximum of 20 pounds (9.1kg) per 50 pound-unit (22.5 kg). Do not add additional water or use limestone aggregate. The pea gravel should be added only after the **LAMBCO® SPE-D-PATCH** and water are thoroughly mixed. For a smoother surface and higher strength, the upper layer of deep cavities should be filled with unextended **LAMBCO® SPE-D-PATCH**.

Care should be exercised in finishing very thin toppings. It is impossible to produce a highly polished, finished surface without jeopardizing the strength of the bond or glue line in thin topping repairs. Excessive steel trowelling will cause more than normal surface bleeding and shrinkage. This surface bleed water is usually drawn from the glue line causing a dehydration of the glue line resulting in possible bond failure. In thin toppings, wood floating only, immediately after screeding will produce maximum bond and minimum shrinkage. Resort to steel trowelling only when absolutely necessary. Any steel trowelling should be very light with a minimum number of passes.

	Packaging:
	50-lb (22.7kg) Bag
	50-lb (22.7kg) Pail



In hot weather applications, substrates should be protected from direct sunlight and wind. Frequent misting of the substrate with water will significantly lower its temperature prior to application. Temperature will affect working time. After installation of LAMBCO® SPE-D-PATCH apply Lambert's water based dissipating cure or mist with water for 12-24 hours to make sure proper cement hydration is achieved. This is especially important with applications less than 1/2-inch (13 mm). Cracks in the material may reappear due to prior structural faults in the construction itself.

Do not retemper or add other cement or additives. Do not use LAMBCO® SPE-D-PATCH on an area where the temperature is or will be below 50°F (10C°). During cold weather, it is suggested to store product at room temperature for 24 hours before application.

Limitations

During periods where the temperature is or will be above 100°F (37.8°C) within 24 hours of application, patching repairs should be undertaken with caution because of potential rapid water loss in the LAMBCO® SPE-D-PATCH material creating a bond failure. In general, LAMBCO® SPE-D-PATCH should not be applied to a hot substrate, in direct sunlight, or in high wind areas without paying addressing the problem of rapid mixing water loss.

Concrete removal and substrate preparation should provide a minimum depth of 1/4-inch (6.4mm) for best repairs. LAMBCO® SPE-D-PATCH can be used in thin applications when Lambert's liquid acrylic resin concrete admixture is added to the mix in place of water. It is recommended that feathered-edges be avoided and saw cutting or chipping to a minimum depth of 1/4-inch (6.4mm) be done. In high traffic and heavy loading repair areas, the sides of the repair cavity should be squared or undercut to a minimum depth of 2-inches (5.1cm).

Never apply where efflorescence is present on the concrete surface. Efflorescence is a white soluble surface salt that breaks down the bond of any cement-based product. Lambert Corporation strongly suggests applying test samples under job conditions to be sure you get the results your job requires.

Crack Repair

Cracks should be dug out or saw cut and widened for best results (minimum 1/4-inch (6.4mm) wide and 1-inch (2.5cm) deep). If this is impossible or undesirable, fill the depths with a flowable consistency of LAMBCO® SPE-D-PATCH. Top the surface of the crack with a compacted layer of no slump LAMBCO® SPE-D-PATCH mixed with Lambert's liquid acrylic resin compound.

Curing

Curing is essential to achieve maximum strength. Fog or damp cure with water in hot and windy weather. Do not allow water to pond. After final set has taken place, one of Lambert's membrane cures may be applied.

Technical Data

Water Ratio: 4.5 qt (4.3L) per 50 lb (22.7kg) unit

Material Properties

Compressive Strength		ASTM C-109	Set Time (Gillmore Needle)		ASTM C-266
1 Day		3100 PSI (21.4 MPa)	Initial Set		20 Minutes
7 Days		5200 PSI (35.9 MPa)	Final Set		85 Minutes
28 Days		7300 PSI (50.3 MPa)			

Length Change (Percentage Avg. Length)		ASTM C-157		Bond Strength		ASTM C-882
	Air Storage	Water Storage		7 Days	1376 PSI (9.5 MPa)	
1 Day	(-)0.01%	(+)0.002%		28 Days	1660 PSI (11.4 MPa)	
28 Days	(-)0.04%	(+)0.01%				

Flexural Properties (55% Rel. Humidity)		ASTM C-78	Splitting Tensile		ASTM C-496
28 Days		790 PSI (5.4 MPa)	28 Days		990 PSI (6.8 MPa)

Scaling Resistance		ASTM C-672
50 Cycles		Maximum Visual Rating 3

Coverage

50 pound (22.5 kg) unit will cover (approx):
 25.0 ft² (2.3 m²) @ 1/4" (6.4mm)
 12.5 ft² (1.2 m²) @ 1/2" (12.7mm)
 6.25 ft² (0.6 m²) @ 1" (25.4mm)

- 50 pound (22.7kg) unit will yield 0.5 ft³ (0.014 m³) mixed material.
- With the addition of 25 lbs (11.3kg), pea gravel yield is 0.6 ft³ (0.017m³) mixed material.

Clean-Up

Cement powder or freshly mixed concrete, may cause skin injury. Avoid contact with skin and wash exposed skin areas promptly with water. If any cement powder or mixture gets into eyes, rinse immediately and repeatedly with water and get prompt medical attention. DO NOT RUB EYES. Product contains some silica sand that can cause silicosis. Avoid over-exposure to the airborne dust. Practice good housekeeping. Any food, drink or chewing product should be protected from the dust.

First Aid

Avoid skin and eye contact. Safety goggles, rubber gloves, and the use of a NIOSH/MSA approved dust respirator is recommended. In case of skin contact, flush with water. For eyes, flush immediately with plenty of water for 15 minutes, and contact a physician. Wash clothing before re-use.

KEEP OUT OF REACH OF CHILDREN. FOR INDUSTRIAL USE ONLY.