

3M

Scotch-Seal™

Polyurethane Sealant

DP-5001, Black

Technical Data

June, 2003

Product Description

3M™ Scotch-Seal™ Polyurethane Sealant DP-5001 is a black, fast-setting, two-component polyurethane. It is packaged as 1:1 ratio liquids in duo-pak cartridges. With the squeeze of the trigger, the components are automatically mixed through a mixing tip and easily dispensed.

Suggested Applications

- Repairing tears and worn spots
- Protection of belt fasteners to prevent wear of splices
- Repair of conveyor belts in mines

Features

- Fast-setting to reduce downtime
- Abrasion resistant
- Remains flexible at low temperature
- Automatic one-step mixing and dispensing decreases waste
- Balanced, low-viscosity, liquid components form an easy-to-use paste
- Withstands a wide range of temperatures
- 100% urethane
- Odorless application

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Typical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Test	Conditions	Test Method	Properties
Viscosity Mixture	68°F (20°C)	Brookfield HBDVI* CP	100,000 cps
Work Life	10 g, 1/6" thick @ 77°F (25°C)	PEC	60 seconds
Tack-Free Time	10 g, 1/6" thick @ 77°F (25°C)	PEC	15 minutes
Full Cure Time	10 g, 1/6" thick @ 77°F (25°C)	PEC	12 hours
Hardness	24 hours @ 77°F (25°C)	ASTM D2240-91	72 Shore A
Lapshear	24 hours @ 77°F (25°C)	ASTM D1002-72	600 psi
Temperature Range	Continuous	PEC	-60°F (-51°C) to 250°F (121°C)

Conveyor Belt Repair

Section 1: Preparation

General Preparation of the Dual Cartridge/Dispenser/Mixer Tip Assembly:

1. Select the desired dispenser (manual or pneumatic) and the mix tip.
2. Cut the blind-end off of the cartridge orifice, or remove the cap.
3. Place the cartridge in the dispenser.
4. Dispense just enough material so that both components dispense equally.
5. Assemble the mix tip onto the cartridge.

Preparation of Repair Area

Note: 3M™ Scotch-Seal™ Polyurethane Sealant DP-5001 is a primerless system which cures at room temperature. For optimum results, it is recommended that cure be accelerated with heat.

Preparation of Repair Area For Splicing

1. Clean repair area thoroughly with acetone* at least 6 inches beyond the repair area to remove any contaminants from the area to be repaired. Allow to dry.
2. After cutting the belt for the splice, use normal skiving procedures to skive the belt 5-6 inches on both sides of the cut.
3. Use a template to mark holes for the clips.
4. Punch the holes out manually or use an impact wrench.
5. Bevel both sides of the splice.
6. Use a coarse sanding disk to grind 2-3 inches beyond the repair.
7. Remove all grinding debris with compressed air. Make sure air lines are dry.
8. Clean thoroughly about 2 inches beyond the ground area with acetone*. Allow to dry 20-30 minutes at room temperature.
9. Attach clips to all holes.
10. Use duct tape to keep Scotch-Seal sealant DP-5001 off of the clip hinges.
11. Use duct tape to dam both sides of the belt area to be filled.

***Note: When using solvents, be sure to extinguish all ignition sources and follow the manufacturer's precautions and directions for use.**

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Conveyor Belt Repair (continued)

Section 2: Application

1. Fill the cut out section and be sure to apply material to ground sections on the surface. Use a spreader to spread 3M™ Scotch-Seal™ Polyurethane Sealant DP-5001 into ground areas. Do not apply or spread beyond the scuffed areas. Use masking tape to keep Scotch-Seal sealant DP-5001 off of the non-scuffed areas. **Note:** When applying Scotch-Seal sealant DP-5001 on a tilted or non-horizontal surface, use a spreader to keep working the Scotch-Seal sealant DP-5001 into the void.
2. Allow to cure at room temperature for 2 hours or use heat cure to accelerate the cure.

Heat Cure

1. Apply heat (heat gun or preferably a heat tunnel) to the area of belt that was repaired, including the 2-3 inches ground on both sides. In a heat tunnel, temperature should be 170°F (76°C) for 20 minutes or 250°F (121°C) for 5 minutes. (A heat tunnel can be easily made with air conditioning duct.) If a heat gun is used, heat on HIGH for 20 minutes. Hold the gun 6-8 inches above the belt and use a constant back-and-forth motion to distribute the heat evenly.
2. Let the repair cool to room temperature and remove all damming duct tape.

Preparation of Repair Area For Gouges And Holes

Note: Repairing gouges and holes are done in the same manner with the exception that repairing holes requires the extra step of damming the bottom of the belt as stated in Step 4 below. When repairing gouges, skip the following Step 4.

1. Clean with acetone* to remove any contaminants from the area to be repaired. Thoroughly dry the surface.
2. Bevel all around the gouge or hole. Use a coarse grinding disk to grind 2-3 inches beyond the edges of the gouge or hole. Use compressed air to remove all grinding debris. Make sure air lines are completely free of moisture.
3. Clean thoroughly about 2 inches beyond the ground area with acetone* to remove any contaminants from the area to be repaired. Allow to dry 20-30 minutes at room temperature.
4. When Scotch-Seal sealant DP-5001 is to be used on a hole in a belt, bevel both the top and bottom of the hole and use duct tape to dam the bottom of the belt.

***Note: When using solvents, be sure to extinguish all ignition sources and follow the manufacturer's precautions and directions for use.**

Application To Gouge/Hole Repair Area

1. Fill the gouge or hole with Scotch-Seal sealant DP-5001 and also apply Scotch-Seal sealant DP-5001 to the ground edges.
2. Use a spreader to spread the Scotch-Seal sealant DP-5001 into the ground edges. Use masking tape to keep Scotch-Seal sealant DP-5001 off of the non-ground areas of the belt.
3. Allow to cure at room temperature for two hours or use the heat-cure method previously described to accelerate the cure.
4. Let the repair cool to room temperature and remove all damming duct tape.

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Storage	This product has a shelf life of 6 months when properly stored in unopened packages at temperatures of 65°F to 85°F (18°C to 30°C). Do not expose to excessive cold or moisture.
Maintenance	No maintenance is required; however, if the product repair becomes damaged, simply reapply 3M™ Scotch-Seal™ Polyurethane Sealant DP-5001.
Precautionary Information	Refer to Product Label and Material Safety Data Sheet (MSDS) for health and safety information before using this product. For environmental information, refer to MSDS. Always wear gloves, eye protection, appropriate respiratory protection, and work in a well-ventilated area. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.
For Additional Information	To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit www.3M.com/adhesives . Address correspondence to: 3M Industrial Adhesives and Tapes Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.
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ISO 9002

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Industrial Business Industrial Adhesives and Tapes Division

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