



Concrete Repair

DP-600, Non-Sag, Gray

Technical Data

July, 2003

Product Description

3M™ Concrete Repair DP-600 is a non-sag, gray, rapid setting, two-component polyurethane. It is packaged as 1:1 ratio liquids in a duo-pak cartridge. With the squeeze of the trigger, the components are automatically mixed through a mixing tip and easily dispensed as a bubble-free non-sag paste.

Suggested Applications:

Building & Construction Maintenance & Repair

Pool Maintenance & Repair

Manufacturing & Assembly

- Rapid repair of spalled or cracked concrete walls and overheads
- Repairing leading edges of stairs
- Custom tapping of bolts and screws into wood, concrete and masonry
- Fixturing bolts to hold telephone cabling
- Replaces spot welding, screws and nails in fixtured assemblies
- Bonding of dissimilar substrates
- Non-brittle bonding to primed PVC and to ABS pipe
- Tough non-brittle bonding of wood, metal, glass and plastic

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
Appearance	Cured	PEC	Gray mass
Work Life	10 g, 1/4" thick @ 77°F (25°C)	PEC	50 seconds
Tack-free Time	10 g, 1/4" thick @ 77°F (25°C)	PEC	2 minutes
Full Cure Time	10 g, 1/4" thick @ 77°F (25°C)	PEC	1 hour
Hardness After Full Cure	1 hour at 77°F (25°C)	ASTM D2240-91	70 Shore D
Lap Shear Strength	7 days at 77°F (25°C)	ASTM D1002-72	3,580 psi
Temperature Range	Continuous	PEC	-60°F (-51°C) to 250°F (121°C)



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Installation

Section 1: Preparation

Prepare the Cartridge for Dispensing:

1. Select the desired dispenser (manual or pneumatic) and the desired mix tip.
2. Cut the blind-end off of the cartridge orifice and place the cartridge in the dispenser.
3. Dispense just enough material so that both components dispense equally.
4. Assemble the mix tip onto the cartridge with a half-twist.

Prepare the Concrete for the Vertical Repair and/or Custom Tap

1. Remove all loose aggregate, dust, old caulks, grease and waterproofing compounds from repair surface. (Grind away any absorbed oils to ensure a clean surface.)
2. Clean repair surface with a bristle brush and use moisture and oil-free compressed air to blow out debris.
3. Mask off area surrounding repair.

Section 2: Procedures

General Concrete Repair

1. Use a spreader to cover the repair and leave an excess of at least 1" around the repair edges.
2. Keep the end of the mix tip immersed in the product as the repair is being filled.
3. Place the spreader over the filled repair.
4. Press down and hold for about 30 seconds to spread the repair compound.
5. Let repair cure before removing the spreader.
6. **Note:** At 75°F (24°C), a 1/4" thick bead sets in 50 seconds and becomes tack-free in 4 minutes. Thinner masses take longer to cure. Subsequent applications can be made on the initial repair to build thickness.

Repairing Concrete Damage from Corrosion

1. Apply a pre-coat of cement corrosion inhibitor or protectant to excessively corroded areas.
2. Allow pre-coat to dry thoroughly.
3. Follow the procedure for general concrete repairs.

Repairing Leading Edges on Steps and Stairways

1. For sharp edges: Follow the procedure for general concrete repairs and shape edge by using two spreaders. Use one spreader to flatten the vertical edge of repair and the other spreader for the top of repair.
2. For round edges: Form round edges with a piece of 3M™ Plastic Contouring Sheet 4904 on small repairs (less than 3" x 3"). Plastic must be at least 1" larger around than the edges of the repair.



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Section 3: Repair Clean-up and Finishing

1. Remove masking tape from repair.
2. Shave or grind cured product with 36 grit sandpaper to achieve desired shape.
3. Sand with 80 grit sandpaper to remove any scratches.
4. If 3M™ Concrete Repair DP-600 is applied in a traffic area, apply sand or some type of grip to repaired surface area.

CUSTOM TAPPING AND FASTENING

Custom tapping is a form of chemical anchoring where cupboards, wall hangers or other heavy cabinetry can be secured in place. However, the bolts or screws holding heavy cantilevered items can be easily removed facilitating the re-location of the cabinetry. Custom tapping is done by molding the threads of bolts and screws into 3M concrete repair DP-600 rather than be mechanically anchored into lag shields. The tough molding properties of this product allow it to form and retain a high-strength, non-brittle interlock between holes cored into concrete, wood or masonry and the threads of the inserted bolt or screw. The release characteristics, upon removal, are achieved by simply spraying the bolt or screw with 3M™ 5-Way Penetrant, (or other release agent) before the bolt or screw is inserted into the liquid prior to its setting. To achieve a more permanent fixture, the bolts and screws simply are not lubricated before embedding into the liquid prior to curing.

Section 1: Preparation For Custom-tapping:

1. Drill holes into the concrete, wood or masonry to the specified depth using the chart below.

Bolt Width (in.)	Minimum Hole Diameter (in.)	Minimum Hole Depth (in.)
1/4	3/8	2
3/8	1/2	3-1/2
1/2	5/8	4-1/4
5/8	3/4	5
3/4	7/8	6-3/8
7/8	1	7-1/2
1	1-1/8	8-1/4
1-1/8	1-1/4	9
1-1/4	1-3/8	9-3/4
1-3/8	1-1/2	10-1/2
1-1/2	1-5/8	11-1/4

2. Use a round bristle brush to clean the cored holes if they have not been freshly drilled.
3. Use moisture-free and oil-free compressed air to blow out the debris.
4. Lightly coat the bolts or screws with 3M 5-Way Penetrant.

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Section 2: Procedures

Procedure for Custom Tapping Concrete:

1. Dispense 3M™ Concrete Repair DP-600 into the hole nearly halfway full. To obtain a consistent fill, judge for under-fill or overfill by counting the number of squeezes of the trigger.
2. Insert the bolt or screw within the first 20 seconds after dispensing. The paste characteristic of 3M concrete repair DP-600 will hold the bolt or screw in place until it cures. Once the work life has been exceeded, do not disturb the bolt.
3. Move to the next hole to keep 3M concrete repair DP-600 flowing in the mixer tip. If material sets in the mixer tip, replace the tip and start dispensing again.
4. 3M concrete repair DP-600 will become tack-free within 4 minutes and cure within one hour. Note: It is best to wait for one full hour before extracting the bolt or screw for securing the cupboards, wall hangers or other cabinetry in place.
5. Allow 3M concrete repair DP-600 to fully cure before applying a load. The maximum torque recommended is 9.5 pounds.

Procedures for Custom Tapping Hollow Concrete Blocks, Wood or Masonry:

1. Use 3M™ Reinforcement Patch 4903 to create a mesh net around the bolt. Leave at least a 1" excess of mesh around the diameter of the bolt. Push the bolt and mesh through the hole.
2. Remove the bolt and then fill the net 3/4-full with 3M concrete repair DP-600 while slowly backing the nozzle out of the hole.
3. Place the bolt in the hole and complete the fill, if necessary, to adjust for any under-fill.
4. Allow 3M concrete repair DP-600 to fully cure before removing the bolt and reinstalling it along with the supported load.



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Storage

Product has a shelf life of 6 months when properly stored in unopened packages at temperatures of 65° to 85°F (18° to 30°C). Do not expose to excessive cold or moisture.

Maintenance

No maintenance is required. However, if repairs become damaged, simply remove damaged area then clean and reapply 3M™ Concrete Repair DP-600.

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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