

3M™ Dry Layup Adhesive, Red 09091, 09092, 09093, 09094

Product Description

3M™ Dry Layup Adhesive is a sprayable, synthetic elastomer based adhesive for bonding/holding glass fabrics and roving, other reinforcements and other materials (i.e. flow media) in place during the infusion process.

Features

- Fast tacking
- Work time range from 15 seconds to 15 minutes
- Red color allows control of the application level
- Robotic application possible

Typical Physical Properties

Properties	Aerosol	Bulk	Cylinder
Base	Synthetic elastomer	Synthetic elastomer	Synthetic elastomer
Solvent	Aliphatic hydrocarbons	Aliphatic hydrocarbons	Aliphatic hydrocarbons
Color (dry)	Red	Red	Red
Solids (by wt.)	24 – 26%	36 – 38%	25 – 30%
Specific Gravity (Ref std: water = 1)	0.697	0.777	0.736
Flash Point (TCC) (Test Method: Tagliabue Closed Cup)	-42.0°F (-41.1°C)	-0.2°F (-17.8°C)	-50°F (-46°C)
Hazardous Air Pollutants	<= 1% Weight	Approximately 0.03 lb HAPS/lb solids	4 – 5% by weight
VOC (Less H ₂ O & Exempt Solvents)	527 g/L (SCAQMD method 305)	493 g/L (SCAQMD method 443.1)	534 g/L
Coverage at 0.5 g/ft ² dry wt.	>220 ft ² /can (20.4 m ² /can)	2183 ft ² /gal (53.6 m ² /L)	7,290
Viscosity	N/A	150 – 1500 cps RVF #4 spindle @ 20 rpm, 80°F (27°C)	N/A

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

Read and follow the precautions on label and MSDS before using product.

Directions for Use

Surface Preparation

Adhesive and surfaces to be bonded should be at 65°F (18°C) or above. For best results all surfaces to be bonded must be clean, dry and free from dirt, dust, oil, wax or grease, etc.

Bonding Range

15 seconds to 15 minutes

Typical Application Level*

- 0.5 g/ft² (5.4 g/m²)
- Color target is very light pink
- Do not apply excess adhesive. (Higher amounts of adhesive could affect composite properties and infusion process.)

* Typical Application Level is provided for reference purposes only. Customer must define and control the proper amount for each specific application. See Caution statement.

Application – 16.5 oz. Aerosol (09091)

1. Shake can before using.
2. Turn spray tip so arrow points to dot on rim of can (always point spray tip away from yourself and others).
3. Hold can 8–10 inches from surface to be sprayed to obtain 4" spray pattern. Target color is very light pink.
4. Apply a light, uniform coat of adhesive to one surface to be bonded.
5. Make bond while adhesive is tacky.
6. Join surfaces with firm pressure.
7. After use, invert can and depress spray tip until spray is free of adhesive.

Application – Bulk 5 gallon (09092) and 55 gallon (09093)

1. Mix adhesive thoroughly before using by agitating adhesive container.
2. Using spray equipment, apply a light, uniform coat of adhesive to one surface to be bonded. Target color is very light pink. See options for bulk application listed below. **Brushing or rolling is not recommended.**
3. Make bond while adhesive is tacky.
4. Join surfaces with firm pressure.

Application Equipment Suggestions for Bulk (09092) and (09093)

Product Name	Quantity
3M™ PPS™ Paint Protection System with 3M Spray Gun**	1/case
Pressure Pot System with 3M Spray Gun**	1/case
Bulk Pumping System with 3M Spray Gun**	1/case

**3M™ Spray Gun Options	Air Cap	Fluid Nozzle in. (mm)	Inlet Air (psi)
Series 12S	7 or 9	.05 or .06 (1.3 or 1.5)	25
Series 19C	805 or 807	.04 or .05 (1.1 or 1.5)	25

** Spray gun properties are for reference purposes only. Customer must define and control the proper amount for each specific application. See caution statement.



Application – Cylinder

Equipment Set-up

1. Attach the large flare fitting end to the spray applicator and tighten the nut securely.
2. Ensure that the applicator gun trigger stop/adjusting nut is fully locked against the trigger.
3. Attach the other end of the hose, a smaller flare fitting, to the cylinder valve and tighten securely.

Directions for Use

1. Mix adhesive thoroughly before use by agitating cylinder.
2. Slowly open the cylinder valve and inspect the connections for any leaks. Tighten if needed.
3. Fully open the valve.
4. Unscrew the trigger stop/adjusting nut away from the trigger 3–4 turns and spray a test pattern. For more adhesive output, continue to screw the nut away from the trigger. For less adhesive output, screw the nut back towards the trigger.
5. Hold the applicator 12–18 inches away from the surface to be sprayed and apply a uniform coat of adhesive. Target color is very light pink.
6. Make bond while adhesive is tacky.
7. Join surfaces with firm pressure.

Equipment Storage

Screw the trigger stop/adjusting nut all the way to the trigger lock position. Turn the valve on the cylinder to the closed position. Take off nozzle and clean thoroughly. Replace nozzle.

Cylinder Application Equipment Suggestions:

Description	3M ID Number
3M™ Scotch-Weld™ Cylinder Adhesive Applicator (includes 9501 tip)	62-9880-9930-5
3M™ Scotch-Weld™ Cylinder Adhesive Applicator EX (with 18" Extension and 9501 Tip)	62-9880-9940-4
3M™ Scotch-Weld™ Cylinder Adhesive 12 Foot Hose	62-9880-0012-1
3M™ Scotch-Weld™ Cylinder Adhesive 25 Foot Hose	62-9880-0025-3
3M™ Scotch-Weld™ Cylinder Adhesive 50 Foot Hose	62-9880-0050-1
3M™ Scotch-Weld™ Cylinder Adhesive 4001 Spray Tip	62-9880-4001-0
3M™ Scotch-Weld™ Cylinder Adhesive 9501 Spray Tip	62-9880-9501-4

Storage

Cold weather can impact the application rate and pattern, as well as dry time, of the bulk adhesive when using a cylinder. To avoid cold weather issues, always:

1. Store the cylinders in a controlled environment with temperatures between 60°-80°F (16°-27°C).
2. Keep cylinders off of cold concrete floors and away from outside walls.

Applicator/Hose Clog – Troubleshooting Checklist

If the system sprays poorly or won't spray at all, the sequence below addresses a complete clog into the cylinder valve. If the problem is resolved at any time during the sequence, stop, clean all parts, and put the system back together. Further troubleshooting is not necessary.

1. Make sure the cylinder is not empty.
2. Make sure the cylinder valve is open.
3. Close the applicator trigger stop/adjusting nut and clean the nozzle tip. Check if it sprays.
4. Take off the nozzle and try spraying. Check if it sprays. If yes, clean the nozzle.
5. Shut off the cylinder valve, **carefully** and **slowly** loosen the applicator gun/hose connection and look for adhesive to squirt out. If adhesive leaks out, allow it to slowly continue until it stops. (This will be messy, but the pressurized adhesive must be bled off in order to clean the applicator gun.) The applicator gun has a clog at the valve. Clean the stem and inlet area.
6. If nothing leaks out after fully loosening the applicator gun, **carefully** remove applicator gun. **Note:** The hose may be clogged but could be full of adhesive and pressure depending on the location of the clog. Secure the open end of the hose in a bucket in case the clog releases and the system flushes.
7. **Carefully** and **slowly** loosen the hose connection at the cylinder valve. Look for adhesive to squirt out. If adhesive leaks out, allow it to slowly continue until it stops. (This will be messy, but the pressurized adhesive must be bled off in order to clean the applicator gun.) Clean or replace the hose.
8. With everything now isolated from the cylinder, place a bucket in front of the cylinder valve and slowly open it to see if any adhesive comes out. If it does, put the cleaned system parts back together. If it does not, there is something wrong with the cylinder or cylinder valve and it should be returned.

3M™ Adhesive Remover, Cyclohexane, Toluene, MEK¹ can be used for cleaning nozzle, applicator gun and inside of hose.

¹ Confirm that the cleaning agent meets local regulatory requirements before use. Extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

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Caution

3M Dry Layup Adhesive (DLUA) could impact the mechanical properties of a composite if used improperly. The customer is responsible for evaluating the impact of the DLUA on the mechanical properties of their blade to confirm it meets their performance requirements.

Applying the proper amount of Dry Layup Adhesive is important. **Do not apply excess adhesive – excess amounts could affect composite properties and infusion process.** Customers are responsible for implementing controls, such as visual standards or robotic application, to ensure the proper application level suitable to the customer's application.

Use Restrictions

Local air quality regulations may manage or prohibit the use of surface preparation and cleanup materials based on VOC content. Consult your local air quality rules before use.

Aerosol (09091): Not for sale in CA, CT, DE, IL, MA, MD, ME, MI, NH, NJ, NY, OH, PA, RI, VA and Washington, DC.

Bulk /Cylinder (09092, 09093 and 09094): Not for sale in CA, CT, DE, MD, ME, NJ, NY, PA, RI, VA and Washington, DC.

Packaging

Available Sizes
24 fl. oz. aerosol can (09091)
5 gallon pail (09092)
55 gallon pail (09093)
30 lb. Cylinder (09094)

Storage

Store product at 60-80°F (16-27°C) for maximum storage life. Higher temperatures can reduce normal storage life. Lower temperatures can cause increased viscosity of a temporary nature. Rotate stock on a "first in-first out" basis.

Shelf Life

When stored at the recommended conditions in the original, unopened container this product has a shelf life of 15 months from date of shipment.

For more information on our wind energy product line, contact 3M Renewable Energy at 800-755-2654 or visit us at www.3M.com/wind.

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