

Operating Instructions

FOR PROFESSIONAL USE

SETTING UP YOUR SYSTEM

IMPORTANT

FOLLOW INSTRUCTIONS

GacoFlashFoam systems are factory tested to meet rigid performance standards. Proper function of the product is totally dependent upon strict adherence to the operating instructions included in this manual.

In all cases, kits should be operated in the upright position (with tank valves on top). Failure to do so will result in loss of pressure.

Operator should always wear proper personal protective equipment including safety goggles, protective clothing, gloves and proper respiratory equipment.



SETTING UP THE GACOFASHFOAM SYSTEM

COMPONENTS

Your system includes two chemical components (A-Component in the green tank and B-Component in the white tank), a gun attached to two ten-foot hoses, and a packet including 10 mixing nozzles, 3 fan tips, a pair of nitrile gloves, a wrench, and petroleum jelly.

TO PREPARE FOR OPERATION

Attach hose labeled 'A' to the A-Component green tank.

Hand-tighten the collar nut (on the end of the hose assembly) to the tank and secure with the wrench.

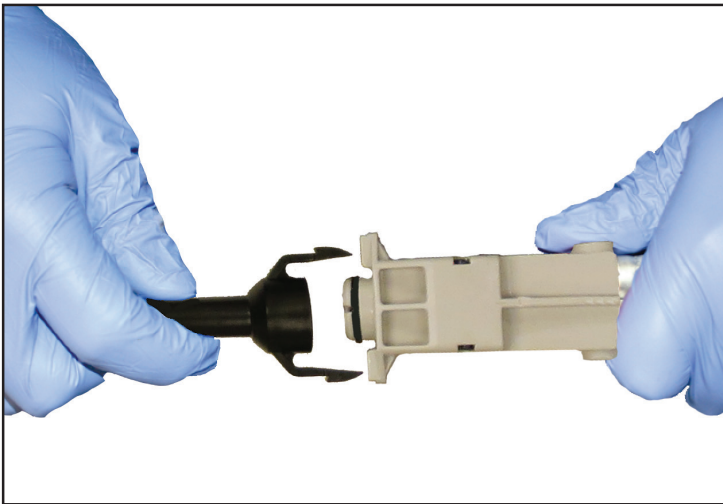
Do not over tighten. Over tightening could damage the valve threads or cause the valve stem to break.

Repeat these steps to attach hose 'B' to the B-Component white tank.



OPERATING YOUR SYSTEM

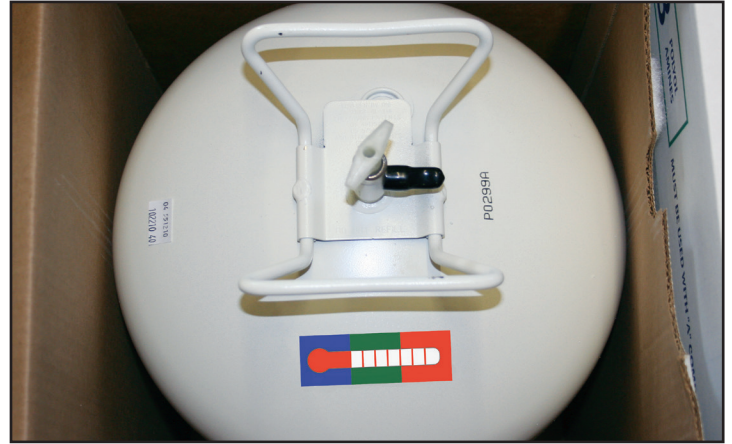
1. Shake each tank/box vigorously.
2. Check the temperature strip (on top of the white tank). Look to see which section is indicated. If the **blue** section is indicated, the chemical is too cold. Warm the kit prior to use. If the **red** section is indicated, the chemical is too warm. Cool the kit prior to use. If the **green** section is indicated, the kit is at the proper temperature and ready to use.
3. Open valves slightly. Make sure there are no leaks. If a leak is detected, tighten the nut. If there are no leaks, open the valves completely.
4. Before you begin, check operation of the kit by aiming the gun into a waste container. Disengage the safety. Dispense foam at full pressure to make sure chemical is feeding from both tanks and is reacting to make good quality foam.
5. Using a small amount of petroleum jelly, lubricate the O-ring that surrounds the face of the gun. Install a mixing nozzle by lining up the locking arms with the slots in the gun body. Push firmly until you hear a 'click' and the nozzle is firmly secured. To remove the nozzle, squeeze locking arms and pull the nozzle out.



FOAM SET-UP TIMES

GacoFlashFoam sets up tack-free or dry to the touch in less than one minute in temperatures between 70°F and 80°F (21°C and 27°C). Higher temperatures will result in faster setup times.

The mixing nozzle is where the two chemicals are actually mixed and become foam. If dispensing is interrupted for 30 seconds or more, the nozzle must be removed and changed prior to the next shot.



TEMPERATURE

Temperature is important in producing good quality foam, cure time, density and physical properties.

Kits should be stored at temperatures between 40°F and 120°F (5°C and 48°C).

For the best performance, chemical temperature must be between 65°F and 90°F (18°C and 32°C). The temperature strip found on the B-Component (white) tank reflects the chemical temperature. When the **green** section is indicated, the chemicals are at the proper temperature for use.

If the **blue** section is indicated, the chemicals are too cold for proper use. Dispensing when the chemicals are too cold will result in foam that is darker in color and will have a crunchy surface. Place the tanks in a warmer area until the temperature strip indicates the **green** section and the chemicals are at the proper temperature for use.

If the **red** section is indicated, the chemicals are too warm for proper use. Dispensing at this temperature will result in foam that is lighter in color and has a soft and spongy surface.

Place the tanks in a cooler area until the temperature strip indicates the green section and the chemicals are at the proper temperature for use. Remember, cooler or warmer ambient temperatures will affect the chemical temperatures as the kit is being used.

Always monitor the temperature strip to ensure the chemicals are at the proper temperature.

Surface temperature will affect the expansion, cure time and possibly also the adhesion of the foam.

Ideally, the best results are obtained when the surface temperature is between 65°F and 90°F (18°C and 32°C). Cooler temperatures will result in less expansion and slower cure times.

Temperatures below 50°F may result in adhesion problems due to condensation. It is recommended that the surface temperature be raised artificially or that the project be delayed until a time when the sun or interior temperatures can warm the surface.

Higher temperatures will result in faster cure times, less expansion and in some instances, adhesion problems.

SPRAY TECHNIQUE

The gun permits the user to meter the flow of material, dispensing only the amount of foam needed for the job at a convenient speed. Hold the gun like a pistol, pull the trigger all the way back, and then ease it forward until you find the position that gives you the best results.

For spray application, it is recommended that the gun be held 9 to 18 inches away from the surface to be foamed. If you wish to move closer to avoid splatter, adjust the pressure applied to the trigger.

Even coverage is obtained by moving the gun steadily back and forth and applying a constant trigger pressure. Attaching the fan tip (by screwing on to the threaded end of the mixing nozzle) will result in a wide, flat, fan pattern.

GacoFlashFoam expands six (6) times its original liquid volume when it cures—important to remember this when applying a spray pattern or filling a cavity.

When estimating the amount of foam for a specific project, remember that published yields are theoretical, based on foam density and the weight of the chemicals packaged in this kit.

Allow for variations in material requirements. There are many factors that affect foam yield.

Chemical temperature and surface temperature cause variations. Other factors are surface irregularities, the number of layers needed to achieve the desired thickness, and free-rise, or enclosed, cavities. It is recommended to estimate that 10% to 25% more foam will be required than exact measurements indicate.

SURFACE PREPARATION/PRIMING

The substrate must be clean and dry prior to GacoFlashFoam application; cover or mask off any areas subject to over-spray.

PVC pipes and metal should be primed with GacoFlex E5320 2-Part Epoxy Primer/Filler according to label directions.

For rusted metal, remove any loose or scaling rust, and apply two coats GacoFlex E5320 2-Part Epoxy Primer/Filler.

APPLICATION INSTRUCTIONS

To make repairs to existing foam roofs:

- Remove any wet, damaged, delaminated or blistered foam.
- Foam that is “burned” (brown in color) from UV exposure should be removed by sanding or grinding.
- Cut the edges of the repair area at 45 degrees, outward, to provide a good tie-in.
- Sand or grind off any existing coating 6" beyond the cut.*
- Ensure surface is clean and dry.
- Apply GacoFlashFoam to desired thickness and then grind or sand the foam to shape it as needed.
- GacoFlashFoam should be top coated with a GacoFlex Coating immediately to avoid damage from sun exposure.

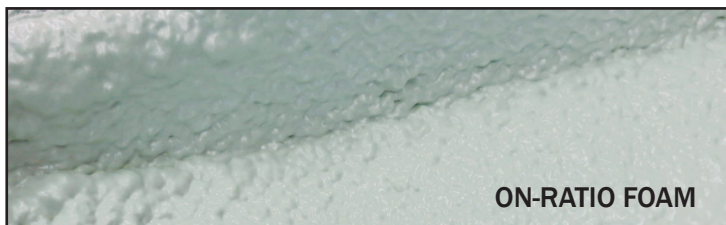
For installing curbs, flashings or roof penetrations:

- Remove existing foam as needed.
- Follow the same instructions as for repairs.

For Technical Assistance: Please contact Gaco Western at 800-456-4226.

*GacoFlashFoam will not adhere to silicone coatings.

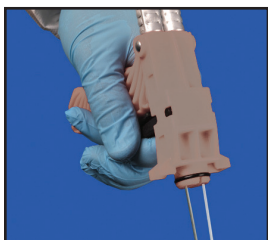
TROUBLESHOOTING



The foam you produce from your GacoFlashFoam kit should be dispensed at a 1:1 mix ratio of the two chemical components. The color of the foam and its texture will help you to determine if the foam you dispense is of good quality.

Good quality foam (on-ratio foam) is light green in color. Foam that is dispensed with a 1:1 mix ratio will have a set up and tack free time of 30 to 40 seconds. After 20 minutes, the foam will be firm to the touch with consistent skin.

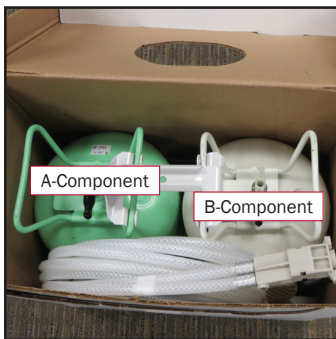
Poor quality foam (off-ratio foam) is not dispensed at a 1:1 ratio. Foam that is dispensed with too much A-Component will be cream colored and will have a crunchy, glassy surface. Foam dispensed with too much B-Component will be brighter green and have a spongy surface.



The first step in diagnosing an off-ratio foam situation is to remove the mixing nozzle from the gun. After the mixing nozzle is removed, point the gun into a waste container and pull the trigger completely back

for several seconds. Observe the chemical flow. You should see two chemical streams of equal velocity.

If you see more B than A chemical, the foam you are

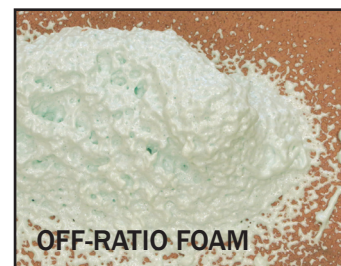


dispensing is probably greener in color and spongy to the touch. First, check the temperature strip to be sure that the indicator is in the green section. Chemical temperatures that are too warm will create additional pressure on the B side,

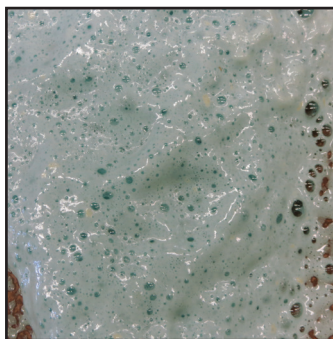
causing it to dispense with more pressure than it should. If the temperature strip is in the red section, the chemicals are too warm and you will need to cool them down. Place the tanks in an air conditioned environment or in a cold water bath until the temperature strip indicator is in the green section. Shake vigorously prior to use and perform another test shot.

If the chemicals were NOT too warm, then check the valve on the A tank. Is it completely open? Is there chemical in the tank? Be sure you didn't empty the A tank last time you used the kit.

If the valve is completely open, and there is chemical in the tank, the problem may be in the gun. Did you use the kit before? How long ago? Moisture can cause small crystals to form in the A-Component hoses. If crystals have formed, they are loosened when you pull the trigger and can clog the A-Component half of the gun, decreasing or completely blocking the flow. If the system is used a MINIMUM of once a week, crystals do not have a chance to form. The kit should not be allowed to sit unused for more than seven (7) days at a time, otherwise crystallization will occur. If the A-Component half of the gun becomes blocked, it will be necessary to purchase another gun/hose assembly to continue to use the kit.



If you see more A chemical than B chemical (more cream color than green), the foam dispensed is probably light cream in color and crunchy to the touch. First check the temperature strip. If the indicator is near to the blue section, or fully in the blue section, the chemicals are too cold. Place the tanks in a heated area or in a warm water bath until the temperature strip indicates green. Shake vigorously prior to use and perform another test shot.



If the temperature strip indicates that the chemicals are at the right temperature, then check the valve on the B tank to be sure it is completely open. Also check to make sure there is chemical in the tank.

If the product is liquified, melted or foamed up, you are probably dispensing only one of the chemicals, most likely the green B chemical, due to blockage in the A-Component side. Re-read and follow the instructions on this page.

SHUTDOWN, STORAGE, MAINTENANCE & REUSE

Unopened systems are guaranteed up to the expiration date stamped on the carton (13 months from the date of manufacture). Once the kit is opened, it is recommended that the kit be used within 30 days, and it is required that the kit is used a minimum of once per week to keep fresh chemicals in the lines.

Store the kits in an environment of 40°F to 120°F (5°C and 48°C), whether opened or unopened. Do not store in direct sun or near hot water pipes, furnaces, chimneys or heat ducts. If they have been stored in cool temperatures, it is important that they are relocated in a warmer place until the chemicals reach a temperature between 65°F and 90°F (18°C and 32°C). The temperature strip located on the B-Component tank will indicate when the chemical temperature is at the correct level to dispense good quality foam (See “Operating Your System”, Section 2).

SHUTDOWN/STORAGE

1. Make sure to remove the used nozzle and discard it. Coat the face of the gun with a **GENEROUS** amount of petroleum jelly.
2. Apply petroleum jelly to the valve stems and close the valves.
3. Keep the cartons in their upright position. Store in temperatures of 40°F to 120°F (5°C and 48°C).

MAINTENANCE

1. In cases where the kit is used infrequently, it is required that the gun is used briefly a minimum of once per week to ensure that fresh chemical is in the lines. This helps to prevent gun blockage. Simply aim the gun—without a nozzle—into a waste container and spray for several seconds. Make sure there are streams of equal velocity from both chemical tanks. Agitate the two chemicals in the waste container to ensure they form a solid industrial waste.
2. Reapply a **GENEROUS** amount of petroleum jelly to the face of the gun. The kit can be stored for another week

REUSE

1. Open the valves, making sure fittings are still secure and there are no leaks.
2. Aim the gun—without a nozzle—into a waste container and make sure there are two streams of chemical of equal velocity. Agitate the two chemicals in the waste container to form a solid industrial waste. Make sure the chemical is feeding from both tanks and is reacting properly to make good quality foam.
3. Attach a new nozzle and dispense foam.

PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR LOW-PRESSURE FOAM SYSTEMS

The GacoFlashFoam two-component spray foam systems is a professional system that should be used under proper health and safety conditions. GacoFlashFoam is a low-pressure product with a dispensed pressure of below 250/psi.

The suggested Personal Protective Equipment (PPE) for the GacoFlashFoam System is as follows:

- Chemical resistant safety goggles
- Chemical resistant protective clothing to ensure there is no exposed skin
- Nitrile gloves (provided in the GacoFlashFoam Kit)
- A NIOSH (National Institute of Safety and Health) approved respirator



There are many respirator options and the correct respirator may be determined based on the project conditions (e.g. ventilation) and/or the applicator preference. Several options include:

- Half-mask respirators with organic vapor cartridges and particulate filters (P100). Half-mask respirators require a fit test and cartridges/filters should be changed in accordance to a regular schedule.
- Full-mask respirators with organic vapor cartridges and particulate filters provide more protection than half-mask respirators. The face-shield protects face and eyes from irritants and contaminants. Full-mask respirators require a fit test and cartridges/filters should be changed in accordance to a regular schedule.
- Powered Air Purifying Respirator (PAPR) with an organic vapor cartridge. This type of respirator offers breathing comfort from a battery-powered fan which pulls air through filters and circulates air throughout helmet/hood.

For more respirator information, please visit www.osha.gov OSHA Regulation 29CFR 1910.134 Personal Protective Equipment.

FIRST AID FOR LOW-PRESSURE SPRAY FOAM SYSTEMS

For any first aid case, consult a physician.

EYES

Flush with water for at least 15 minutes.
Seek medical attention.

SKIN

Remove contaminated clothing.
Wash skin with plenty of soap and water.
Cured foam must be removed mechanically.
Seek medical attention if irritation develops or persists.

INHALATION

Move to fresh air. If breathing is difficult, give oxygen.
If breathing has stopped, administer CPR.
Seek immediate medical attention.

INGESTION

Drink large quantities of water.
Do not induce vomiting.
Contact a physician immediately in any first aid situation.

For more information about the health and safety considerations when using spray polyurethane foams, visit www.spraypolyurethane.org or refer to the Safety Data Sheet.

SAFETY PRECAUTIONS

Please refer to the Safety Data Sheet accompanying this shipment for safe use and handling of the individual components.

1. Operator should always wear proper personal protective equipment. In case of skin contact, flush with water.

For eyes, flush with water for 15 minutes and get immediate medical attention.

2. Use only with adequate ventilation and respiratory protection.

3. Smoking must not be allowed during application. Open flame and/or the use of welding or electrical equipment in the vicinity of the application should also be prohibited.

4. Do not store in temperatures above 120°F (48°C). Do not store in direct sun, near hot water pipes, furnaces, chimneys or heat ducts.

5. Keep out of the reach of children. Do not apply to materials or objects that children would touch.

CHEMICAL SPILLS

A-COMPONENT (Isocyanate):

Provide adequate ventilation. Wear suitable personal protective clothing and equipment.

Contain spill and collect using suitable absorbent material, such as sawdust. Shovel into waste container adding 10% to 20% decontaminate solution (90% water, 7% ammonia and 3% liquid detergent). Leave uncovered for 24 hours prior to disposal.

Dispose of as ordinary industrial waste in compliance with pertinent regulations.

B-COMPONENT (Polyols):

Provide adequate ventilation. Wear suitable protective clothing and equipment.

Contain spill and collect using a suitable absorbent material such as sawdust.

Dispose of as ordinary industrial waste in compliance with pertinent regulations. Wash areas containing residue with warm water and soap.

TANK DISPOSAL

DO NOT PUNCTURE OR INCINERATE TANKS. Drain any remaining chemical into a waste container. It is preferred that both chemicals are drained into a waste container, mixed to create a solid, then disposed of as ordinary industrial waste. If only one chemical remains, it must be absorbed (A-Component must also be neutralized) and disposed of. When the tanks are empty, they must be vented prior to disposal. To vent, turn the tanks upside down (valves down). Open the valves slowly, and let the pressure escape. Let the tanks vent for a minimum of 24 hours. Puncture the burst plug to prevent reuse.

Chemical tanks are disposed of as ordinary industrial waste (sanitary land fill recommended) in compliance with pertinent regulations.

24 HOUR SPILL-EMERGENCY CONTACT:

CHEMTREC 800-424-9300

For medical emergencies, contact your local emergency service.

WARNINGS: Individuals with chronic respiratory diseases, asthma, or bronchial disorders should not work with these materials, nor should those with allergic diseases. The user is responsible for verifying that this material meets local building codes and/or any restrictions. It is also the user's responsibility to determine the fitness of this product for any intended application.

When this product is to be used in interior construction or in any confined area, it should be covered with another material to provide a fire rating of at least 15 minutes. A covering of a minimum of 1/2 inch cement, plaster or fire-rated gypsum wallboard or an equivalent fire barrier is advised. Do not use this urethane foam where it will come in contact with steam pipes, heat vents, or areas where surface temperature might exceed 250°F (121°C). No flame cutting or hot work should be conducted nearby. Where urethane foam is continually exposed to sun or water, it is recommended that a protective coating be applied over the foam to retard possible deterioration.

The aforementioned information on this product is to be used as a guide and is subject to change without notice. These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods and use of our products are beyond our control. Any obligation of the seller or manufacturer shall have no force or effect unless it is in writing and signed by officers of the manufacturer.

The information herein is believed to be reliable but unknown risks may be present. ALL WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND THAT GOODS ARE OF MERCHANTABLE QUALITY, ARE SPECIFICALLY DISCLAIMED. See Gaco Western for information concerning its limited warranty and its availability.

For specific Safety and Health information please refer to Safety Data Sheet.

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Gaco Western is a recognized leader in innovative silicone roofing systems, and offers best-of-class waterproofing and insulation solutions for a variety of commercial, industrial and residential applications. Founded in 1955, Gaco Western remains today a family-owned business with its roots in technology and product innovation.