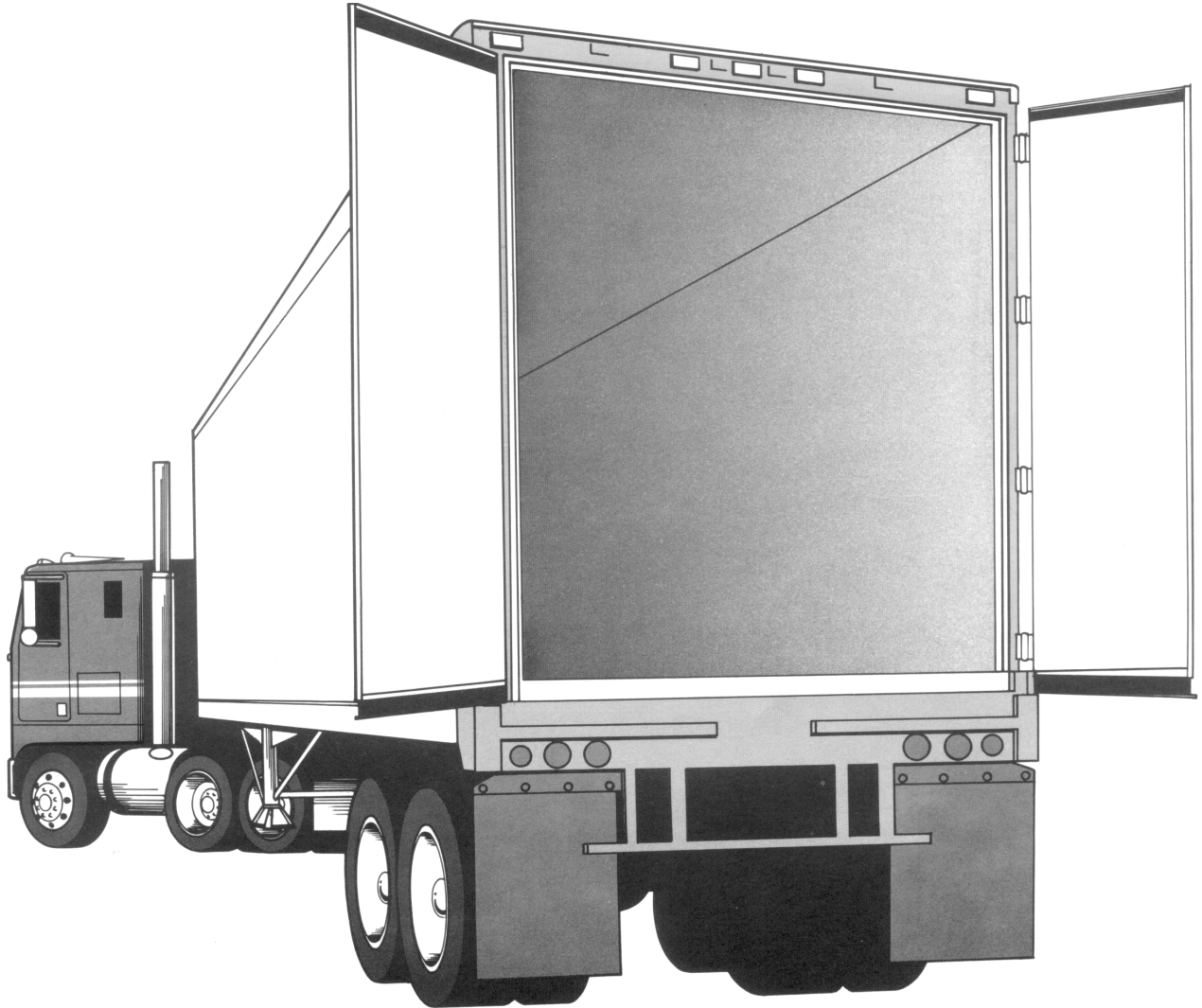


# FRP TRUCK/TRAILER MAINTENANCE AND REPAIR MANUAL



**FIBER-TECH INDUSTRIES, INC**

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***F**iber-Tech Industries is proud of the Fiberglass Reinforced Plywood products and service we provide to our customers. There are no shortcuts or compromises in the materials and methods we utilize — resulting in only top grade and eye appealing FRP panels for truck bodies and trailers.*

*However, the day-to-day wear and tear coupled with unforeseen mishaps can damage even the most durable FRP panels. We're providing this handy manual with easy to follow instructions, in the event your FRP equipment needs special maintenance and repair attention. Utilization of the tools and techniques discussed in this manual have been proven to provide the best results for repairing and maintaining the original good looks of your FRP equipment.*

This manual is intended to provide general instructions to the user on how to repair FRP panel damage. The instructions given herein are the cumulative result of experience and experiment with methods, procedures and materials that have proven to be most effective in performing these repairs. They are offered in good faith without guarantee. Fiber-Tech Industries, Inc. assumes no responsibility or liability to the user for the methods or materials suggested in this manual. All information contained herein, and its implementation, is for use at the discretion of the manual user. All responsibility and liability is assumed by the user.

**Basic Tools Required**

1. Dust mask
2. Safety goggles
3. Disposable gloves or hand cream
4. Wire brush
5. Sandpaper – coarse to medium
6. Clean rags
7. Putty knife (4" to 6" blade) or plastic spreader
8. Mixing Board
9. Poly repair film
10. Masking tape
11. Mixing buckets (disposable)
12. Stir sticks (wooden)
13. 2" paint brushes (disposable)
14. Marking pen
15. Screwdriver
16. Scissors

**Additional Tools Required for Major Repair**

1. Tape measure
2. Carpenter square
3. Drill motor 3/8"
4. Circular saw (portable)
5. 2" wood chisel
6. Grinder
7. Router

Note: All power tools to be equipped with carbide tipped blades.

**Basic Materials**

1. Glass filled Polyester body filler (repair putty) with catalyst (hardener)
2. Fiberglass cloth (4" – 6" wide)
3. Polyester (fiberglass) resin with catalyst (hardener)
4. Swiss Hair or Kitty Hair (optional)
5. Acetone

Note: All Basic Materials can be purchased locally at home centers, building materials & hardware retail stores, auto parts stores, or boat equipment, supply & repair centers.

All of the basic fiberglass repair materials can be purchased locally at home centers, building materials & hardware retail stores, auto parts stores or boat equipment, supply & repair centers. If you experience any difficulty in obtaining the necessary products, please contact Fiber-Tech's customer service at 1-800-879-4377.

To help provide you with a complete guide to FRP repair, Fiber-Tech is offering some general guidelines for mixing and using fiberglass repair materials. Fiber-Tech strongly recommends that all individual package label instructions and precautions be thoroughly read, understood and strictly followed. The following is being offered only as a general guideline to help you understand the overall process.

## GENERAL MIXING INSTRUCTIONS

### Glass Filled Polyester Body Filler (repair putty):

1. Protect hands with disposable plastic gloves or liberal coating of hand cream.
2. Use a mixing stick to agitate putty before removing from can as separation may occur. Then "scoop" putty (*Swiss Hair or equal*) from can on to mixing surface. Mix only an amount that can be used in 10 minutes as mix becomes unworkable after that time and hardens completely in 12-15 minutes at room temperature.
3. Add 1/4 tube of setting agent (catalyst) per 1/4 can of filler. (A good rule of thumb is: mix in a pea size "dab" of hardener for each golfball size "gob" of filler).
4. Mix thoroughly until no streaks are evident. Use immediately.



**Rule of Thumb:** Fiberglass resins and fillers cure or harden faster in warmer temperatures and slower at colder temperatures. Adjust catalyst accordingly.

### Fiberglass Resins:

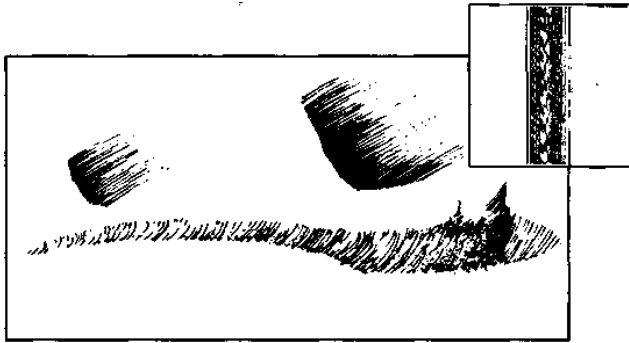
1. Protect hands with disposable plastic gloves or liberal coating of hand cream.
2. Shake or stir resin thoroughly before mixing.
3. Pour resin into mixing bucket. Use only enough resin to complete immediate repair. Surplus cannot be used later as resin hardens or cures in approximately 40 minutes. Safely dispose of unused portions. Do not return to container.
4. If desired add white pigment (coloring agent) to desired shade.
5. Add 10-13 drops of catalyst to each ounce of resin (10 cc. per quart of resin).

### Clean-up Procedure:

Remove freshly mixed filler and resin from skin, clothing, tools and other objects immediately with acetone. Once cured, filler and resin cannot be dissolved. After sanding FRP, dust off clothing and equipment to remove skin-irritating fiberglass particles. Safely dispose of used mixing buckets, mixing sticks, brushes, unused quantities of filler and resin after they have fully cured.

**SAFELY DISPOSE OF UNUSED PORTIONS OF MIXED RESINS AND BODY FILLERS AFTER THEY HAVE FULLY CURED AND COOLED. DO NOT FLUSH INTO DRAINS OR SEWERS. DO NOT INCINERATE.**

*CAUTION: Chemical vapors can be harmful. Use in well-ventilated area, and avoid prolonged breathing of vapors. Do not take internally, induce vomiting if ingested, and consult a physician. Avoid prolonged or repeated contact with skin. In case of contact, flush skin or eyes repeatedly with water. Keep away from heat or open flame. Keep out of reach of children.*



## Surface Scrapes and Scuffs

### Description:

Only outer surface of panel is affected, no exposure of fiberglass or plywood core. Panel performance not impaired. Repair is for cosmetic reasons and to prevent possible moisture penetration.

### How to Repair:

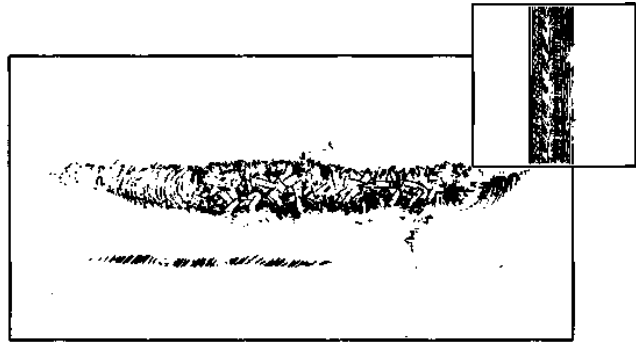
1. Clean affected area with wire brush to remove loose gel-coat or Tedlar. Lightly sand area around repair to remove gloss and promote adhesion of repair materials. Wipe with acetone-dampened cloth.
2. Mix small quantity of fiberglass repair putty or glass-filled polyester body filler (*Swiss Hair or equal*). Thoroughly read, understand and strictly follow all instructions and precautions associated with applicable product's label.
3. Use plastic spreader or putty knife to fill scrape or scuff.
4. Cover with poly film, tape one end, smooth out with plastic spreader or putty knife to remove air bubbles and insure proper filling and smooth finish. Tape as you work to insure film is held firmly against filler as this will reduce finish sanding.
5. Allow to fully cure at least 12-15 minutes or until film releases easily from repair material.
6. Lightly sand to feather edges and to promote adhesion of paint or Tedlar repair tape, if applicable.
7. Painting or covering repair with Tedlar tape is definitely recommended on exterior surfaces. Painting is not essential on interior surfaces.



**Rule of Thumb:** After applying Tedlar repair tape, wipe completed repair with acetone to remove adhesive from edge of tape as this will eliminate tendency to pick up dirt. When working with fiberglass, be sure to sand surfaces to remove gloss as this will aid in bonding of repair materials.



**Rule of Thumb:** When sanding for application of paint, resin or Tedlar tape, sand a minimum of 2 inches around perimeter of the area to be repaired. Failure to do so can result in a lack of adhesion and failure of repair.



## Narrow Gouges Exposing Fiberglass or Plywood Core (less than 2" wide)

### Description:

Fiberglass or plywood core is visible. Moisture can be absorbed into core and eventually cause further damage. **Repair should not be delayed.**

### How to Repair:

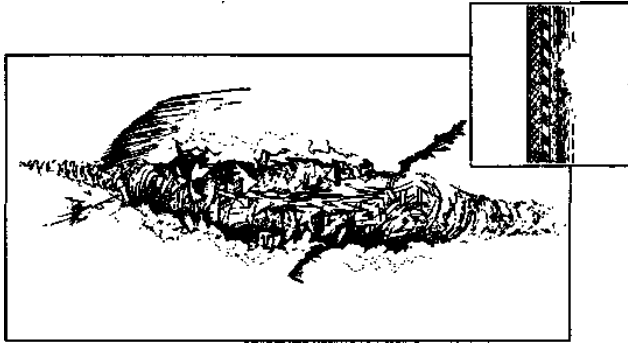
1. Clean affected area with wire brush and tap with metallic object (such as a coin) to determine full extent of damage. (See Rule of Thumb below). Be sure to remove all loose laminate, discolored wood and delaminated fiberglass. Lightly sand area surrounding repair to insure adhesion. (For removal of fiberglass where necessary, see Rule of Thumb below.)
2. Mix sufficient quantity of glass filled polyester body filler (*Swiss Hair or equal*). (Thoroughly read, understand and strictly follow all instructions and precautions associated with applicable product's label.)
3. Use plastic spreader or putty knife to fill gouge.
4. Cover with poly film, tape one end, smooth out with plastic spreader or putty knife to remove air bubbles and insure proper filling and smooth finish. Tape as you work to insure film is held firmly against filler as this will reduce finish sanding.
5. Allow to fully cure at least 12-15 minutes or until film releases easily from repair material.
6. Lightly sand to feather edges and to promote adhesion of paint or Tedlar repair tape, if applicable.
7. Painting or covering repair with Tedlar tape is definitely recommended on exterior surfaces. Painting is not essential on interior surfaces.



**Rule of Thumb:** Since it is not always possible to determine the extent of damage within the panel by visual examination, use a metallic object (such as a coin) to "tap out" panel. A solid crisp sound indicates no hidden panel damage. A dull muffled sound is an indication of delamination and the need for further examination.



**Rule of Thumb:** When it is necessary to remove fiberglass laminate, simply mark off area to be removed with a straight edge and using circular saw, set blade for approximately 1/8" deep cut. Cut through laminate and pry away from core with screwdriver. Damaged laminate can now be peeled from core, thus eliminating need to grind fiberglass.



## Wide Gouges (2 inches or wider) Exposing Fiberglass or Plywood Core

### Description:

Fiberglass or plywood core is visible. Moisture can be absorbed into core and eventually cause further damage. **Repair should not be delayed.**

### How to Repair:

1. Clean affected area with wire brush and tap with metallic object (such as a coin) to determine full extent of damage. Be sure to remove all loose laminate, discolored wood and delaminated fiberglass. Lightly sand area surrounding repair to insure adhesion. (For removal of fiberglass where necessary, see note at end of this section.)
2. Mix enough glass filled polyester body filler (*Swiss Hair or equal*) to fill gouge to surface level of core material (Thoroughly read, understand and strictly follow all instructions and precautions associated with applicable product's label).
3. Use plastic spreader or putty knife to fill gouge, working putty firmly into place.
4. Fresh filler in a large mass tends to sag. To prevent sag, and to achieve a smooth surface, place poly repair film over repair and tape on one end. Using plastic spreader, work to other end of repair and tape film to panel as you go to insure film is held firmly against filler. This will aid in filling repair, removing air bubbles and reducing filler sag.
5. Allow to fully cure at least 12-15 minutes or until film releases easily from repair material. Remove film and lightly sand to promote adhesion. Be sure to sand surrounding area (minimum 2") as resin to be applied later will not bond to glossy surfaces. Wipe surface clean with acetone saturated rag.
6. Cut 2 strips of 8 oz. glass cloth the length of the gouge (Allow for a 2" overlap onto surrounding panel.)



**Rule of Thumb:** When sanding for application of paint, resin or Tedlar tape, sand a minimum of 2 inches around perimeter of repair. Failure to do so can result in a lack of adhesion and failure of repair.

7. Mix enough polyester resin and catalyst to apply three

coats over the repair. Add white pigment to desired color.

8. Use disposable paintbrush to apply generous coat of resin over filled and touch sanded gouge.
9. Apply a strip of glass cloth into wet resin and press into place removing wrinkles. Resin should thoroughly soak glass cloth.
10. Apply coat of resin over glass cloth. The first coat should not be allowed to cure as this will give layered effect.
11. Apply second layer of cloth and final coat of resin. **Be sure glass cloth is thoroughly saturated with resin.**
12. Cover immediately with poly film. Tape one end and work to opposite end using plastic spreader or putty knife to remove air bubbles and insure proper wetting of glass cloth. Tape film in place as you work to insure film is held firmly against work surface. This will insure a smooth finish and reduce amount of sanding necessary to complete repair.
13. Remove film when resin is cured. Allow to fully cure approximately 45 minutes or until film releases easily from repair material.
14. Lightly sand repair to remove gloss for final painting or application of Tedlar repair tape. Wipe surface with acetone saturated rag.
15. Painting or covering repair with Tedlar tape is definitely recommended on exterior surfaces. Painting is not essential on interior surfaces.



**Rule of Thumb:** When it is necessary to remove fiberglass laminate, simply mark off area to be removed with straight edge and using circular saw, set blade for approximately 1/8" deep cut. Cut through laminate and pry away from core with screwdriver. Damaged laminate can now be peeled from core, thus eliminating need to grind fiberglass.



**Rule of Thumb:** After applying Tedlar tape and working with plastic spreader or squeegee, wipe perimeter of repair to remove excess adhesive. This will prevent dirt pick-up and keep repair "invisible".



## Minor Core Penetration Damage (Less than 2 inches)

### Description:

Panel is totally penetrated with hole large enough to insert up to four (4) fingers. (If larger see Severe Core Penetration). Panel is not structurally impaired, but water can enter. Repair immediately to prevent further damage.

### How to Repair:

1. Clean affected area with wire brush and tap with metallic object (such as a coin) to determine full extent of damage. (See Rule of Thumb at end of this section). Be sure to remove all loose laminate, discolored wood and delaminated fiberglass. Lightly sand area surrounding repair to insure adhesion. (For removal of fiberglass where necessary, see Rule of Thumb at end of this section.)
2. It may be necessary to fill the hole in several stages, as unsupported, freshly mixed filler (*Swiss Hair or equal*) tends to sag. Mix a small quantity. Fill edge of hole, pushing filler firmly into edges. Allow to cure 12-15 minutes. **Note:** Applying duct tape or masking tape to opposite side of panel will provide back-up and make filling easier.
3. Mix additional small quantity of filler and fill out repair. If filler oozes out of hole, remove the surplus and allow remainder to cure.
4. Repeat mixing/filling until hole is completely filled.
5. Lightly sand to promote adhesion. Be sure to sand surrounding area (minimum 2") as resin to be applied later will not bond to glossy surfaces. Wipe surface clean with acetone saturated rag.
6. Cut 2 strips of 8 oz. glass cloth the length of the gouge (Allow for 2" overlap onto surrounding panel.)
7. Mix enough polyester resin and catalyst to apply three coats over the repair. Add white pigment as desired.
8. Use disposable paintbrush to apply generous coat of resin over filled gouge.

9. Apply a strip of glass cloth into wet resin and press into place, removing wrinkles. Resin should thoroughly soak glass cloth.
10. Apply coat of resin over glass cloth. The first coat should not be allowed to cure as this will give layered effect.
11. Apply second layer of cloth and final coat of resin. **Be sure glass cloth is thoroughly saturated with resin.**
12. Cover immediately with poly film. Tape one end and work to opposite end using plastic spreader or roller to remove air bubbles and insure proper wetting of glass cloth and surface. Tape film as you work to insure film is held firmly against work surface. This will insure a smooth finish and reduce amount of sanding necessary to complete repair.

**NOTE:** *Fiberglass must be applied to both surfaces (interior and exterior) to restore structural integrity of panel. Repeat steps 5 thru 12 on both sides of panel. Steps 13 and 14 must be completed on exterior surface; interior optional.*

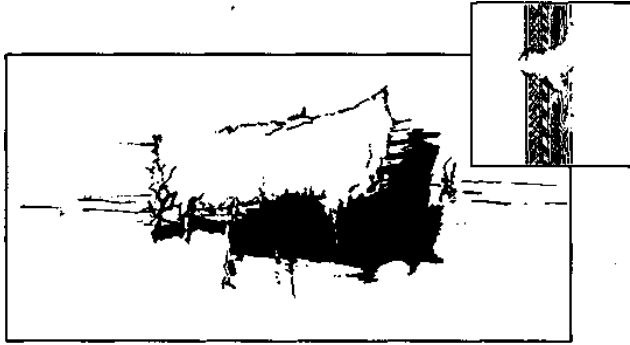
13. Lightly sand repair to remove gloss for final painting or application of Tedlar tape. Wipe surface with acetone saturated rag.
14. Apply finish paint or Tedlar repair tape.



**Rule of Thumb:** Since it is not always possible to determine the extent of damage within the panel by visual examination, use a metallic object (such as a coin) to "tap out" panel. A solid crisp sound indicates no hidden panel damage. A dull muffled sound is an indication of delamination and the need for further examination.



**Rule of Thumb:** When it is necessary to remove fiberglass laminate, simply mark off area to be removed with straight edge and using circular saw, set blade for approximately 1/8" deep cut. Cut through laminate and pry away from core with screwdriver. Damaged laminate can now be peeled from core, thus eliminating need to grind fiberglass.



## Severe Core Penetration (Over 2 inches)

### Description:

Large area of panel is penetrated or destroyed (large enough to insert four (4) fingers or more). Repair immediately. It is necessary to remove entire damaged area and fit a replacement plug of FRP or plain plywood in its place. (See page 10 for additional instructions).

### How to Repair:

1. Carefully examine damaged area and determine extent of damage (fiberglass separated from core). Add 2"- 6" beyond visible damage. (Use metallic object to tap panel. A solid crisp sound indicates good adhesion; a dull muffled sound is an indication of delamination).
  2. Plot, measure and mark the damaged area using a carpenter's square. Include punctured and delaminated areas. (Refer to page 10, illustration 1).
  3. Set the blade of a circular saw to a depth sufficient to cut through panel. Remove damaged area previously marked. Visually inspect cut out area, making additional cuts if necessary to remove all damaged wood. (Refer to page 10, illustration 2).
  4. Working from inside of trailer, shiplap panel 2" on all sides of cut out to a depth approximately 1/32" greater than one half of the total thickness of the plywood core. This will allow sufficient material to remain in joint when plug is installed. (Refer to page 10, illustration 3).
  5. Measure a piece of FRP or plain plywood large enough to cover the area to be repaired and add 2" around all sides to allow for shiplap repair method. (Be sure plug is the same core thickness as the panel). (Refer to page 10, illustrations 4 and 5).
  6. Use a wire brush to remove sawdust and other loose material from edge of opening and plug.
  7. Insert replacement plug into opening to be sure it matches and fits. Fit should be a little sloppy (approx. 1/8" gap around perimeter). Remove plug. (Refer to page 10, illustration 6).
  8. Apply masking tape around outer edges of cutout. Lap 1/2" of tape over panel edge. This is to prevent filler from dripping.
  9. Mix enough glass filled polyester body filler (*Swiss Hair or equal*) to generously coat the edges of replacement plug. (Thoroughly read, understand and strictly follow all instructions and precautions associated with applicable product's label).
  10. With plastic spreader or putty knife, apply filler to all edges of plug, working quickly as filler cures in 12 to 15 minutes (Cure time varies with room temperature). (Refer to page 10, illustration 7).
  11. Push plug firmly into opening until filler oozes out of seams and face of plug is flush with panel surface.
  12. Install stainless steel flathead sheet metal screws on 8" to 10" centers. This will draw plug tight to panel. Check exterior of panel to be sure there is no step down or excessive gapping. (Refer to page 10, illustration 8).
  13. Remove surplus filler immediately.
  14. After filler has cured, touch sand area 2" wide at all seams and wipe down with acetone-dampened cloth. (Refer to page 10, illustration 9).
- IF FRP REPLACEMENT PLUG IS USED:** Follow these instructions to 'bandage' interior seams with fiberglass cloth. No additional fiberglass reinforcing should be required. (See page 10 for illustration).
15. While waiting for filler to cure, measure and cut enough strips of 8 oz. glass cloth to cover all 4 seams with two layers (8 strips). Strips should be about 2" longer than seams.
  16. Mix enough polyester resin and catalyst to apply three coats to glassed seams with paintbrush. Add white pigment to mixed resin to achieve desired color.
  17. Paint a generous coat of mixed resin along all seams, slightly wider than cloth strips.
  18. Apply one strip of glass cloth over wet resin, centered over each seam. Press and smooth cloth firmly into place. Resin should thoroughly soak cloth. Smooth wrinkles. (Refer to page 10, illustration 10).
  19. Paint a generous second coat of resin over cloth on each seam. Resin should not be allowed to cure between coats.
  20. Apply second layer of cloth in same manner as first layer to all remaining seams.
  21. Apply final coat of resin to glass cloth. **Be sure to apply sufficient resin to thoroughly saturate fiberglass cloth.**
  22. Apply poly film to surface, taping one end and working to other end. Smooth surface with plastic spreader or roller removing air bubbles. Tape as you go to be sure poly film is in contact with panel as this reduces finish sanding. (Refer to page 10, illustration 11).
  23. When resin is fully cured (45 to 60 minutes) remove film and sand any rough spots or edges (interior surfaces do not need to be finished further unless desired). (Refer to page 10, illustration 12).

**Helpful Hint:** When installing plug into panel using flathead stainless steel sheet metal screws, pre-drill holes on 8" to 10" centers (carriage bolts (1/4") with large can washers on 8" to 10" centers can be used in place of screws) to insure ease and speed of installation. Remember, you are working with catalyzed products that harden rapidly.

*Continued on page 8*



## EXTERIOR FINISHING (FRP or plain plywood)

24. Repeat steps 15 through 23 on exterior.
25. Remove poly film.
26. If any gaps or blemishes remain, fill with freshly mixed FTI gel coat repair paste and allow to cure (12 to 15 minutes).
27. Lightly sand to eliminate gloss and remove high spots.
28. Spray paint to match exterior of unit or apply Tedlar tape as required.

IF (PLAIN) PLYWOOD PLUG IS USED: Follow these instructions for Fiberglass reinforcing of interior and exterior surface repair areas.

1. Remove laminate from panel surface approximately 2" back from all seams. (See note on page 5 for further help in removing laminate.) Lightly sand adjoining panel surface to remove gloss approximately 2" on all sides of repair. (Refer to page 7, steps 1-13).
2. Cut two (2) pieces of 18 oz. glass cloth large enough to overlap all seams by about 2"; one piece of cloth to be applied to the exterior, one piece to the interior.
3. Mix enough polyester resin and catalyst to apply two coats to entire plug plus overlap.
4. Apply a generous coat of mixed resin to plug and overlap seam 2" onto sanded surface.
5. Position and press glass cloth firmly into place. Smooth to be sure there are no air bubbles or wrinkles underneath. (Refer to page 10, illustration 11).
6. Apply second coat of mixed resin to glass cloth; be sure to fully saturate glass.
7. Apply poly film over repair, taping one end and working to other end with plastic spreader to remove excess resin and air bubbles. Tape as you hold film firmly in place. Allow to cure (approximately 45-60 minutes).
8. Interior surface need not be finished further, unless desired.

## EXTERIOR FINISHING (FRP or plain plywood)

9. Remove poly film.
10. If any gaps or blemishes remain, fill with freshly mixed FTI gel coat repair paste and feather sand.
11. Lightly sand to eliminate gloss and remove high spots.
12. Spray paint to match exterior of unit or apply Tedlar tape as required.



**Rule of Thumb:** Always remove gloss from gel coat or resin surfaces before attempting to bond to or paint over FRP. (**Do NOT sand Tedlar surface.**)

Fiberglass must be thoroughly saturated with polyester resin to insure maximum strength of repair and proper bond.

Always radius corners of cut outs to eliminate stress points.

**Major Panel Destruction****Description:**

Extensive damage, requiring replacement of large panel section between top and bottom rails.

**How to Repair:**

1. Clean affected area with wire brush and tap with metallic object (such as a coin) to determine full extent of damage. (See Rule of Thumb at end of this section). Using a straight edge or chalk line, mark and cut a straight vertical line from top to bottom of panel and to left and right of damaged area. Lightly sand area surrounding repair to insure adhesion. (For removal of fiberglass where necessary, see Rule of Thumb at end of this section.)
2. Remove fasteners from top and bottom rails (approximately 12" to 14" on either side of repair) to provide free access to top and bottom edges of panel. Also remove fasteners from corner post if necessary.
3. Working from inside of unit, vertical edges should be ship-lapped 2" to a depth approximately 1/32" greater than one half of the total thickness of the plywood core.
4. Measure distance between vertical lines and height of panel.
5. Transfer measurements and mark them onto the matched FRP replacement plug.
6. Cut top and bottom edges of replacement plug square (saw blade set at normal 90° angle).
7. Clean all loose material from all cut edges with wire brush.
8. Put replacement section in place to be sure it fits. Fit should be slightly sloppy (approx. 1/8"). Pre-drill for screws on 8" to 10" centers. Remove plug.
9. Mix quantity of body filler (Thoroughly read, understand and strictly follow all instructions and precautions associated with applicable product's label) and work rapidly to trowel filler onto ship-lapped edges of plug.
10. Push the replacement plug immediately and firmly into place. Be sure it is flush at top and bottom.
11. Firmly position four 2x4 braces or cargo load locks against opposite interior wall to the replacement panel, two feet from the top and bottom and approximately 6" inside seams at all four corners.

*Continued on page 9*

12. Insert stainless steel flathead sheet metal screws on 8" to 10" centers, pulling panel and plug together.
13. Inspect seams to be sure surfaces of original and replacement panels are flush.
14. With putty knife, immediately remove filler that oozes out of seams inside and outside.
15. Cut two strips of glass cloth 2" longer than length of each seam.
16. Apply glass cloth and resin following repair instructions on page 7 & 8, numbers 16 through 28.



**Rule of Thumb:** Pre-drilling for screws will reduce working time and make installation of replacement section easier. Remember you are working with a catalyzed material that will cure in approximately 15 minutes.



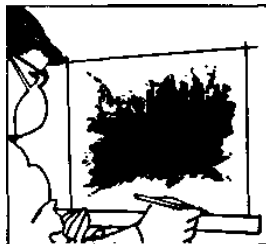
**Rule of Thumb:** When working with fiberglass products be sure to use carbide tipped saw blades and router bits only.



**Rule of Thumb:** Since it is not always possible to determine the extent of damage within the panel by visual examination, use a metallic object (such as a coin) to "tap out" panel. A solid crisp sound indicates no hidden panel damage. A dull muffled sound is an indication of delamination and the need for further examination.



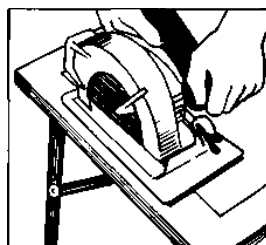
**Rule of Thumb:** When it is necessary to remove fiberglass laminate, simply mark off area to be removed with a straight edge and using circular saw, set blade for approximately 1/8" deep cut. Cut through laminate and pry away from core with screwdriver. Damaged laminate can now be peeled from core, thus eliminating need to grind fiberglass.



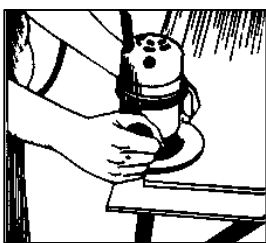
**1** The Ship-Lap method of repair is recommended for structural damage or punctures completely through the FRP panel. Tap surrounding area to determine the full extent of the damage. Draw a square or rectangle approximately 4" larger than the damaged area.



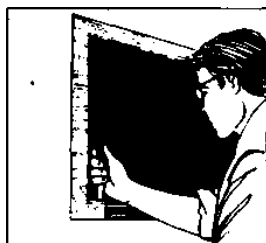
**2** Using a circular saw, cut out the 2" marked section. Inspect for any wetness. A larger hole may have to be cut to remove wetness or delamination.



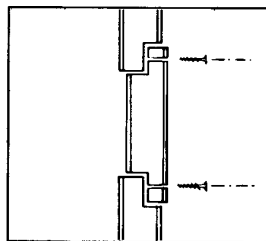
**3** From the inside of the trailer, draw a 2" line from each edge of the opening. Set your saw to cut half of the thickness of the panel (as shown on the plug). Make the cut, peel away the 2" of fiberglass, and chisel or route out the plywood. Sand smooth and clean the area.



**4** Cut an FRP plug from a panel of the same thickness, 2" larger on all sides than your cut opening. Draw a line 2" from each edge of the plug. Set your saw to a depth of half the thickness of the panel and cut along the marked line.

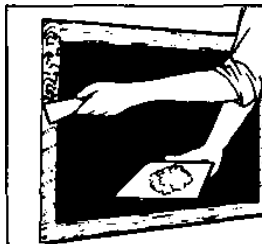


**5** Remove the 2" of fiberglass and chisel or route out the plywood. Sand smooth and clean the area.

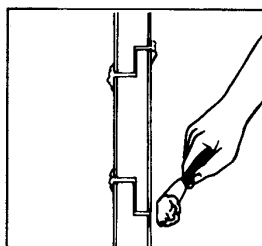


**6** Check the fit and make any necessary adjustments. Pre-drill plug for insertion of flathead sheet metal screws (stainless steel) on 8" to 10" centers for large repairs, 4" to 6" on smaller repairs.

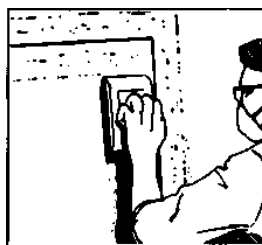
NOTE: Always radius corners of cutouts to eliminate stress points.



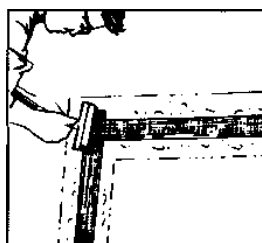
**7** Generously apply glass filled polyester body filler (*Swiss Hair or equal*) to cover sanded areas and fill all voids.



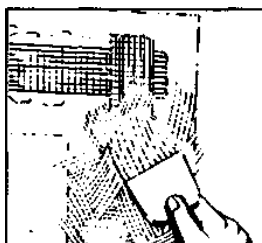
**8** Insert plug. Place bolts or screws around the perimeter to secure plug in place until body filler cures. Remove excess filler which has been forced out before curing.



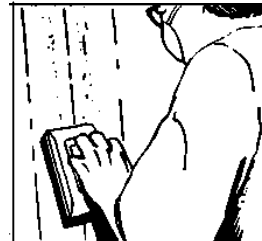
**9** Cut two (2) strips of glass cloth, minimum of 4", or one (1) piece of woven roving for each seam. Sand area on each side of the seam.



**10** Apply thoroughly mixed polyester resin generously to the sanded area (seams) and press strips of glass cloth or woven roving into the wet resin.



Immediately apply a second coat of mixed resin over the 4" glass cloth and total joint area. **11** Make sure that the glass cloth is completely saturated. Repeat this step applying second layer of glass cloth and finish coat of resin. To prevent resin sag, work the top horizontal joint first by quickly taping a sheet of poly film the complete width and length of the joint. Press poly film firmly with a roller or plastic spreader to insure complete saturation and force out any air bubbles. Repeat this procedure for the bottom horizontal joint and then follow the same previous steps on the opposite side of the trailer repair.



**12** When resin has cured, remove poly film and lightly sand. The surface is now prepared for painting or application of Tedlar tape.

# CARE & MAINTENANCE OF FRP FINISHES

The exterior Gel Coat and Tedlar® finishes used by Fiber-Tech are considered the finest available today. Gel Coat is a UV stable pigmented polyester resin. Tedlar is a polyvinyl fluoride polymer film made by DuPont. Both materials are extremely durable and offer the ultraviolet resistance needed to protect the underlying polyester laminate while providing the desired aesthetics.

All FRP panels should be regularly inspected for signs of damage, deterioration around fasteners, breakdown of caulking or general signs of moisture intrusion into the panels. Any scar or abrasion on the surface can be the point of entry for moisture that may destroy the integrity of the panel and must be repaired.

When not in use keep the Gel Coat or Tedlar surface out of the sun or covered with a canvas tarpaulin. Do not use sheet plastic or other non-porous materials that can trap moisture between the cover and the panel surface.

In order to insure the continued good looks of your FRP equipment, a regular maintenance program is recommended. Your program should be tailored to specific needs and should take into consideration your day-to-day operating environment. The following recommendations should be considered as the minimum needed to maintain the attractiveness of your FRP equipment.

## Gel Coat Finish

### General Information

Exposure to sunlight, water, dirt and chemicals can be detrimental to a Gel Coat surface causing chalking, discoloration, or loss of gloss. Simple periodic maintenance procedures will minimize these changes.

Gel Coats are very resistant to chemical attack, however the harshness of some chemical cleaners available on the market today is surprising! Avoid any strong alkaline cleaners (such as tri-sodium phosphate) or highly acidic cleaners. Also avoid exposure to bleach and ammonia as these materials, if left in contact with polyester, may cause color changes. All cleaners are meant to attack soils and remove them. The longer they remain in contact, the longer they attack the soil and also the finish. Remember, when you use a cleaner, leave it in contact with the surface the minimal amount of time necessary to do the job.

### Procedures To Maintain Gel Coat Finishes

Clean monthly or more frequently if needed. Wash with mild soap solution such as dishwashing liquid or automotive detergent with a neutral Ph. For best results apply using a soft brush and allow to sit until soil is loosened. Rinse with clean water. If unable to brush apply, a power washer can be used.

Wax at least twice yearly to restore gloss and protect the finish. Use only wax recommended for fiberglass and follow instructions carefully. Never wax a Gel Coat surface in direct sunlight.

## Tedlar® Finish

### General Information

Tedlar is a polyvinyl fluoride film produced by DuPont. While Tedlar will not fade when exposed to ultraviolet light, road film or other soils, regular cleaning of the surface is recommended. As with Gel Coat finishes, caution should be used with all cleaners used on Tedlar surfaces.

### Procedures To Maintain Tedlar® Finishes

Clean monthly or more frequently if needed. Wash with mild soap and water solution such as dishwashing liquid or automotive detergent. For best results apply using a soft brush and allow to sit until soil is loosened. Rinse with clean water. If unable to brush apply, a power washer can be used.

Additional solvents and acid cleaners can safely be used on Tedlar surfaces but you should consult DuPont's Technical Department at 800-255-8386 for additional information.

## Remember two things for all FRP finishes:

1. **READ THE LABEL AND INSTRUCTIONS.** Understand the precautions to prevent usage of materials that would be harmful to fiberglass or surrounding parts such as aluminum, decals, or caulking.
2. **RUN A TEST SPOT.** If there is a question, try the cleaner in an inconspicuous spot. If it discolors or dulls the spot, do not use it.



## FIBER-TECH INDUSTRIES, INC

Washington Court House, OH • Spokane, WA • Cadillac, MI  
Phone: 800-879-4377

Email: [Info@fiber-tech.net](mailto:Info@fiber-tech.net) • [www.fiber-tech.net](http://www.fiber-tech.net)

**Clad Tuff** - Clad Tuff panels are manufactured from APA trademarked plywood cores in thicknesses from 1/4" to 1 1/2". All panels are reinforced with either 17 oz. or 22 oz. fiberglass woven roving. Exterior finishes come in either high gloss gel coat or in Tedlar®, a flexible polyvinyl fluoride film fused to the exterior laminate. Clad Tuff panels are available in sizes up to 120" wide x 58' long.

**Clad Foam** - Clad Foam panels provide maximum thermal efficiency by utilizing a polyurethane foam core. Low to medium density PVC foam is also available. Core materials come in thicknesses from 1/2" to 4". All panels are reinforced with either 17 oz. or 22 oz. woven roving and exterior coated with either high gloss gel coat, or Tedlar® film. Interior surfaces can be coated with gel coat for additional protection against vapor penetration. Clad Foam is available in sizes up to 120" x 45' with a maximum overall thickness of 5". For additional strength, 3/4" stiffeners running vertically through the panel are utilized 24" centers.

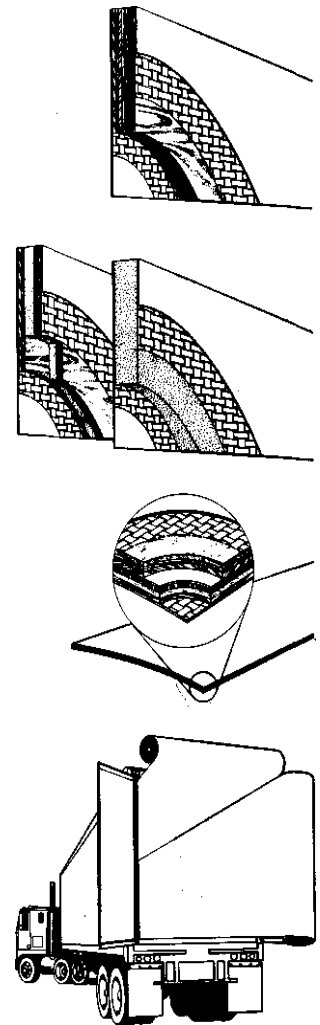
**Stratoply Super Roof** - Stratoply permanently arched roofs are manufactured from APA trademarked plywood. All roofs are reinforced with either 17 oz. Tedlar® film or 22 oz. woven roving and the exterior surface is coated with high gloss gel coat or Tedlar® film. Stratoply is manufactured with a 1/2" thick plywood core with no through joints. Each roof is permanently arched with a nominal 3/4" crown. Stratoply roofs are available in sizes to meet all standard truck body and trailer requirements up to 108" x 57'.

**Fiber Form** - Fiber Form Fiberglass Reinforced Concrete Form panels utilizes a high quality Douglas Fir core laminated with 17 oz. fiberglass woven roving to provide a high strength, durable panel. The exterior of the panel is finished with a chemical resistant gel coat finish to produce a consistent high quality architectural grade concrete finish. Standard panels range from 4' to 8' up to a maximum size of 120" x 58' long, at no extra cost per square foot.

**Fiberliner** - Fiberliner is a seamless interior truck liner panel constructed from durable fiberglass reinforced plastic. The combined characteristics of high impact strength, manufactured from lightweight components, enables Fiberliner to stand up against abusive day-to-day wear and tear. Fiberliner is particularly suited for use in refrigeration units and can be used as a lining material on sidewalls, ceilings, doors, floors, scuff plates and subpans. Fiberliner is available in a series of standard widths ranging from 6" to 101" and comes in bulk coils or cut to length sizes.

**FRP Floors** - Smart Step, Tuff Scuff, and Fiber Deck floors provide a variety of lightweight, seamless, non-slip fiberglass reinforced floor materials. Call today details and samples.

**Alternative Core Materials** – Fiber-Tech's fiberglass reinforced panels can be easily manufactured using a wide variety of core materials. Polyisocyanurate, high-density urethane foams and structural thermoplastic honeycomb materials provide almost endless opportunities and uses for high strength lightweight seamless panels.



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