

Procedure No. AT 101 Rev-. 7
Original Issue Data: Sept. 19, 1989
Date: February 14, 1994

INTRODUCTION

To better serve the covering and coating needs of the aircraft owner Air Tech Coatings, Inc. was created. The advances in materials technology over the last twenty years have yielded improved alternatives to the old "Grade A" and dope systems. These improvements have been the introduction of heat shrinkable polyester fabrics, new adhesives, and new coating systems. They are rapidly becoming the standard for covering and the experience of thousands of aircraft owners who have used them are a great testimony to their ease of application, durability, and finish.

Recovery of any fabric covered aircraft is to be accomplished under the authority of the Federal aviation Administration FAA. As with any major repair or alteration it must be inspected and approved by a representative of the FAA or a delegated authority and the appropriate records made. Specific inquiry should be made if there is doubt about how to accomplish such a repair. Consult approved Air Tech Procedure Manual AT 101, Rev 4 or later approved revision original aircraft specifications and FAA AC 43.13 - IA. Pages from the FAA approved Procedure Manual AT 101 are inserted in this manual and are noted FAA approved.

Air Tech personnel are eager to assist anyone using the Air Tech system. Basically, the covering and /or the painting processes are simple; but, the results achieved are dependent on following the recommendations and having good attention to detail and quality of work.

This manual is designed for those having some experience in the application of fabric covering and painting. For those who do not have such experience Air Tech can refer you to other more comprehensive publications.

Procedure No. AT 101
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STATEMENT OF WARRANTY AND LIABILITY

Seller makes no express warranties of any kind with respect to acceptance and use of materials as referenced on invoice(s) and which are sold thereunder. The use of any sample or model during the negotiations leading to a sales agreement serves merely to indicate a type of goods to be tendered to the buyer. Such samples or models create no warranty that the goods will conform to the samples or models.

Seller warrants the products sold are in accordance with Seller's published specifications or those specifications agreed to by the seller in writing at the time of sale. Seller's obligations and liability under this warranty is expressly limited to repairing or replacing at the Seller's option within three months from the date of delivery any product not meeting the specifications.

These warranties are in lieu of all other warranties express implied or statutory or arising by custom or trade usage, including any warranty. of merchantability or fitness for any unique or special or express purpose and of all other obligations or liabilities including without limitations liability. for damages (general or special direct or indirect, consequential. incidental, exemplary) or for any claim for the loss of profits or business or damage to goodwill. Seller neither assumes nor authorize any person to assume for the seller any other liability- in connection with the sale or use of the goods sold, and there are no oral agreements or warranties collateral to or affecting this agreement.

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SAFETY INFORMATION

The products sold by Air Tech Coatings, Inc. may be or contain potentially harmful solvents or substances. Proper application requires the materials to be used in a properly ventilated area with the use of OSHA approved breathing devices. All materials must be kept away from any source of combustion and all contaminated materials etc.. rags etc. must be disposed of in an approved manner.

Please read and heed any and all safety warnings and precautions.

Material Safety Data Sheets (MSDS)) are available upon request.

KIT MATERIAL QUANTITIES

Dear Customer:

Every effort has been made to properly estimate the amount of materials required for your aircraft project. The amounts arrived at are the result of the years of experience we have in doing the same type of work.

However, we realize that different users will apply and use the various materials at rates which may be higher or lower than our experience. This is impossible to avoid as the application situations are of an almost infinite variety- and the amount of material to be applied is often a judgment call " based on the individual's " eye or taste".

As a supplier this presents somewhat of a dilemma for us as if we don't include enough a customer might feel he was shorted and if we include too much one might feel we "loaded" him up unnecessarily. Our goal, of course, is for you to have just what you need. Accordingly, if you are supplied materials which are in excess of what you need to complete your project we will be

pleased to take back for full credit any new unused materials which are not out of date and can be resold as new. Exceptions would be any custom color blended for your project. Alternatively, if your project require a little more than originally supplied we hope you will not think we shorted you intentionally.

Air Tech's mission is to offer you the best value for your coatings dollar. We hope to do this by:

- * Offering the best products at reasonable prices.
- * Offering the easiest products to use.
- * Offering the latest technology,, longest lasting, most durable and chemical resistant materials.
- * Ensuring that an Air Tech finished aircraft has the lock which will improve its worth.
- * Offering the best technical service in our industry.

Thank You for choosing Tech !!

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PROCEDURE - METAL PREPARATION

The adherence of any coating to a metal substrate is primarily a function of surface preparation. If the surface is properly prepared and free from contaminants one can apply a coating with the confidence that it will adhere and give many years of service life. Paying very close attention to preparation is an absolute must.

ALUMINUM SURFACES Bare, either stripped or new)

1. The bare surface must first be thoroughly cleaned and any corrosion removed. First the surface can be cleaned with naphtha, acetone or MEK. If stripped metal, all stripper must be removed.
2. Wet abrade aluminum surface with a commercial phosphoric acid etch/brightener ie. Air Tech Alumiprep keeping surface wet 3 - 5 minutes. Rinse with clean water; water must sheet over the entire surface, a water break free surface must be had. Abrasives containing iron i.e., steel wool are prohibited for cleaning operations as particles may become imbedded in aluminum and be the beginning of corrosion.
3. Apply a chromic acid conversion coating (Alodine) to the surface. Keep surface wet for 5 minutes. Reapply several times to obtain a pale gold or tan color. Rinse thoroughly and air dry. The next primer coat must then be applied within 24 hours!.
4. For severe service such as water immersion or use in situations where high chemical resistance is required the use of a phosphoric acid wash primer is recommended. The next primer coat must be applied within 24 hours!
5. After the conversion coating and/or wash primer application the surface must be coated with

Air Tech's two component epoxy/ primer.

STEEL:

- 1 Surfaces must be cleaned with naphtha acetone, or MEK to removed oil or other contaminants.
2. Any rust or corrosion must be removed by sanding, steel wool or steel wire brush.
3. Surface must be cleaned by wet abrading it with a phosphoric acid etch solution. Surface must be kept wet for 5 minutes minimum.
4. Within 5 hours after surface has been cleaned it must be coated with an Air Tech two component epoxy primer.

Note: Wash or self etching primer is an optional treatment for steel surfaces after acid etch. It must be used on surfaces which will be placed in extreme service ie. long term water immersion etc. It is very good for zinc coated surfaces (galvanized).

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PROCEDURE PREPARATION OF AIRFRAME FOR RECOVERING

Prior to recovering obviously the old covering must be removed. Paying close attention during this step can pay great dividends as the recovering progresses.

One must attempt to remove the old fabric in tact or in as few pieces as possible as the old fabric can serve as a template for the new ie. rib stitch spacing cable exits, positioning of inspection rings and drain grommets. As the fabric is laid back attachments can be removed also. This may mean cutting rib lacing, removal of clips or screws or drilling out rivets. Fasteners must be removed without stressing the member to which they are attached don't try to pull the fabric loose !!

On metal structures make certain there is no evidence of rust or corrosion. Check low points on each member as this is where moisture is likely to collect and corrosion begin. Remember, this is one of the last opportunities to correct corrosion conditions. Inspect all control cables, electrical wiring, bolts, etc. and replace anything that is not likely to last another ten years. Inspect bell-cranks, repair and lubricate in accordance with manufacturer's recommendation.

Wooden surfaces must be sanded and coated with Air Tech spar varnish. Do not use commercial polyurethane varnish typical of that found at hardware or paint stores!

Metal surfaces to which primer must be applied must be primed with an Air Tech two part epoxy primer. Prior to epoxy primer application surfaces must be cleaned and/or treated according to methods acceptable to the FAA Refer to FAA AC 43,13 - IA Chapter 6).

Every sharp edge or protruding metal piece must preferably be eliminated or covered with

chafing tape.

After preparation the airframe must be inspected and approved for cover by an FAA representative or his delegate. If this inspection can be conducted by the one who will perform the final inspection and authorize the return of the aircraft to service it will accelerate the process.

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PROCEDURE FOR INSTALLING POLYESTER FABRIC

If fabric installation is being tried the first time build a test panel. The process is not difficult but gaining familiarity with it via covering a test panel just makes good sense. The test panel must have the fabric installed, shrunk to fit and coated with the primer using the procedures herein.

The best order for covering the aircraft components is to start with a small part such as an elevator; proceed then to larger parts then to wings and fuselage last. All components must be completed though the primer/filler/uv barrier step and ready for the pigmented coats which can then be mixed only once to ensure color control.

The covering of the wing will be explained as most everything will be dealt with which will be encountered on other assemblies. After the wing the fuselage assembly will be discussed as there are some special considerations for that member.

Much time will be saved if one prepares a jig which will attach one end to the wing spar fittings and allow rotation of the wing as the work is being accomplished. The other end of the wing can be supported on a padded sawhorse.

Refer to the old fabric and original manufacturer specifications for guidance. A photo and simple sketch must be made of the structure and notes kept.

I. WING INSTALLATION

Mount the wing in the fixture and inspect the structure very carefully. The inter-rib bracing must all be in place and properly secured; Miring must be in good condition, properly routed and secured. Control cables must be routed properly and secured. Note the position of all as the rib stitch placement and spacing need to be coordinated with them. Bell-cranks must be inspected and lubricated as necessary. Remember compliance with original manufacturer specifications and/or FAA AC 43.13 - IA is mandatory for any repair or modification.

Some recommend the use of pre-sewn envelopes which are tailor made for each aircraft. These envelopes are OK but with the wide polyester fabric and the reliable adhesives now employed

the blanket method of covering is recommended. It is easier to work with the one ply of material on each side of a surface than to wrestle with an envelope attempting to keep seams straight and in the proper relationship.

Option I: Fabric is Wide Enough to Wrap Around Both Leading and Trailing Edges

Cut two fabric lengths wide enough to completely wrap around one side of the wing over both the leading and trailing edges. Cover any sharp metal protrusions with chafing tape. The leading edge and trailing edge of the wing must be coated with two thinned coats of adhesive (2 parts of RA 4000 adhesive reducer to 1 part UA 55 adhesive) and each must be allowed to dry for 5 minutes. Coat the top of the ribs which will come in contact with fabric with two coats of the thinned adhesive. Note the edges of most fabric are thermally cut which leaves a bead along each edge; this bead must be removed before application.

The first length of fabric must be oriented span wise covering the surface (top or bottom). There must be a fabric overlap of 4 inches minimum at the leading edge and enough to wrap around the trailing edge. Leading edge seams must later be covered with a 2 inch surface tape minimum. Note the minimum fabric overlap for lapped joints other than leading edge is 2 inches.

The fabric is secured at the trailing edge using the thinned UA 55 adhesive by wrapping it around and cementing it to the structure. As the fabric is attached brush a thinned coat of adhesive on the fabric and work it in with the brush or other aid to reactivate the previously applied adhesive and remove any entrapped air. The goal is to totally saturate the fabric.

The fabric must then be worked with adhesive toward the leading edge paying particular attention to the aileron bay and tip bows to ensure the fabric is getting full adhesion. The fabric must be kept smooth and straight during this process but not pulled too tight. When this panel is completely attached apply two coats of thinned (2/1) UA 55 adhesive to all attachment areas and allow it to dry. This will provide a foundation of adhesive for the next fabric layer.

Apply the next fabric panel in the same manner taking care to ensure the proper overlaps are maintained. Take great care with the adhesive to ensure there are no unsightly lumps and/or ridges.

In areas where the fabric is cut to allow for control cable exit, attachment points etc. make sure the fabric is securely attached with adhesive. After fabric tautening install fabric doublers for greater reinforcement. If any doubt exists as to the strength in these areas it is OK to even apply a triple fabric thickness. A point of notice is the aircraft manufacturer has pre-cut acetate doublers for these areas to be installed after fabric tautening; consult manufacturer specifications and your plans manual.

Option 2: Use of Three Span wise Lengths of Fabric

If one width of the fabric will not cover the wing it is easy to use three pieces of fabric oriented span wise to complete the cover job. The procedure is the same as option I except three span wise lengths are used rather than two.

First, lay a length of fabric out span wise onto the wing either top or bottom. Starting at the trailing edge wrap the fabric around the trailing edge and permanently attach it to the trailing edge with fabric adhesive in the same manner as Option 1. Then work the fabric toward and over the leading edge forward of the spar no less than four inches. Repeat this procedure for the other surface of the wing. After top and bottom fabrics are both in place a span wise length of fabric must be cut which will wrap around the leading edge from top of the spar to tile bottom. Before attaching tile leading edge fabric, coat tile entire leading edge including the 4 inch fabric laps with two coats of fabric adhesive thinned two to one and allow each to dry for 5 minutes. The leading edge fabric installation can then be complete in tile normal manner paying particular attention to fully saturating tile fabric and removing any entrapped air. The fabric must be allowed to dry overnight before the shrinking or tautening process is started. Good planning will ensure the overnight cure is no problem to the flow of work.

II. FUSELAGE

Prior to application of the fuselage fabric 2 coats of fabric adhesive (UA 55 thinned 2 parts RA 4000 adhesive reducer to 1 part UA 55) must be applied to tile longerons or other structural members to which the fabric is to be attached. Where possible tile fabric must be wrapped around a tubing and attached with adhesive.

The fabric must be installed on the sides first, allowed to dry and slightly tautened at 250 degrees Fahrenheit to remove any wrinkles. The remaining fabric must then be installed with fabric adhesive overlapping the longerons or structural member to which it is attached and overlapping the slightly tautened fabric with a minimum 2 inch fabric to fabric overlap on an adhesive foundation of two thinned coats. After final fabric tautening surface tapes of at least 2 inches width will then be installed over the seams. Spring clips must be used to secure the fabric as is applied and until the adhesive is dried.

If interior fabric is required it must be applied first.

Limitations:

Do not apply adhesive below 40 degrees Fahrenheit.
Allow adhesive joints 24 hours cure for full strength.

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INTRODUCTION

The procedures described herein apply only to the use of the materials referenced in the accompanying STC. In absence of specific instructions the FAA approved methods and

specifications of the original aircraft manufacturer and/or the techniques, procedures and directions of the FAA Advisory Circular 43.13- IA govern.

PREPARATION OF AIRFRAME FOR RECOVERING

Prior to recovery the airframe and components must be repaired and made ready for the covering process in accordance with FAA approved methods specified by the original aircraft manufacturer and/or FAA 43.13 - IA-

INSTALLATION OF FABRIC

I. Per FAA AC 43.13 - IA Paragraph 128 the method of fabric attachment should be identical as far as strength and reliability are concerned to the FAA approved method used by the original aircraft manufacturer.

2. Particular attention must be paid to the attachment method whether rib stitching, screws, rivets or clips. Installation attachment should be according to FAA approved methods and specifications of the original manufacturer.

3. Cemented seams are to be located only over supporting perimeter airframe structures. Cemented seams which terminate in open bays are prohibited except for repairs to finished surfaces. Sewn seams must only be used when fabric width is not adequate to cover the surface; they must meet the original manufacturer's FAA approved specification or FAA AC 43.13 - IA-

4. Air Tech UA 55 adhesive will be used in areas calling for cemented joints and for laying surface tapes according to procedures referenced herein (AT 101 FA, page 2; AT 101 ST, page 5), 5, Per FAA AC 43.13 - IA Para. 128 fabric may be applied so that either the warp or fill threads are parallel to the line of flight. Either the envelope or blanket method of covering is acceptable.

6. Only polyester/dacron fabrics may be used in this process which meet the requirements and are certified under Technical Standard Order TSO C-15d, dated February 26, 1990 entitled Aircraft Fabric.:

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PROCEDURE: APPLICATION OF FABRIC WITH AIR TECH FABRIC ADHESIVE UA 55 PROCEDURE AT 101 - FA

The Air Tech fabric adhesive is a concentrated thermoplastic adhesive. The following procedures must be followed:

- I. Except for surface tape application (see step 6 below & page 5 herein) thin the UA 55 adhesive concentrate with Air Tech adhesive reducer (RA 4000) in the ratio of 2 parts reducer to one part of UA 55 by volume. The viscosity of thin "pancake" syrup is about 100 cP.
2. Metal surfaces, bare or coated, are suitable substrates for gluing fabric. Metal surfaces requiring primer must have a two part epoxy primer - Air Tech FE 1700 or FE 1730 applied. Prior to primer application surfaces must be cleaned and treated according to FAA AC 43.13 - IA Chapter 6.
3. Wood surfaces to which fabric is to be attached must be sanded and cleaned (FAA 43.13 - IA Para. 129) and coated with Air Tech polyurethane spar varnish (M 9200).
4. Any surface to which fabric will be attached must be brush coated with two thinned coats of adhesive. Minimum overlap for fabric lapped joints is 4 inches on the leading edge and 2 inches elsewhere.
5. When applying surface tapes with the adhesive a thinner mixture is required (3 parts reducer RA 4000 to 1 part UA 55). see Procedure AT 101 - ST, page 5 herein.
6. After attaching fabric pieces, tapes or reinforcements always brush two thinned coats of adhesive (3 parts reducer RA 4000 to 1 part UA 55) on the glued attachment area.
7. On larger surfaces such as leading edges, "turtle decks", etc. brush two thinned coats (3/4 lb of adhesive on the area after fabric gluing and shrinking is complete.

Limitations:

- I. Do not apply adhesives below 40 Fahrenheit.
2. Allow= 24 hours for cure to MI strength.

Material Safety Data Sheets are available upon request.

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PROCEDURES FOR TAUTENING POLYESTER FABRIC PROCEDURE AT 101 - T GENERAL SHRINKING-OPEN BAY SHRINKING

For the tautening process an ordinal household clothing iron rated at 1100 watts or higher will produce satisfactory- results. DO NOT USE A HEAT GUN FOR THIS PROCESS!.

I. Calibrate the iron with an Air Tech iron thermometer. The iron's THERMOSTAT control position must then be marked at the 250 degree 300 degree and 375 degree Fahrenheit positions.

2. After allowing an overnight (12 hour) adhesive cure start at the 250 degree setting and iron the entire fabric surface. Move the iron on all open bay flat surfaces 4-8 inches per second. Fabric on solid surfaces will require slower movement (2 - 5 inches/second). Be sure all areas are ironed and the fabric is heated enough to shrink.

3. Increase the heat setting to 300 degrees and repeat the ironing process.

4. Increase the heat setting to 375 F and repeat the ironing process again. This final ironing develops peak tension and stabilises the weave to prevent any tension loss and will give the smooth, taut, wrinkle free surface desired.

SHRINKING OF CORNERS, WRINKLES AND SMALLER AREAS

I. Puckers or wrinkles can be given special TREATMENT with the same iron or a smaller fabric iron. Iron at a temperature of 350 - 375 F.

2. Wrinkles in the lapped areas where cement has been applied may be REMOVED by the application of heat. Iron these areas at 250 - 275 F to achieve proper shrinking but not SCORTCH the adhesive.

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PROCEDURES FOR RIB ATTACHMENTS AND ACCESSORIES PROCEDURE NO. AT 101 - R

After application and tautening of the fabric rib stitching and other approved attachment procedures are performed. Methods of attachments may be wing clips, pop rivets, P K screws, Martin Clips, or rib lacing (stitching) cord. Fabric must be attached according to FAA approved methods specified by the original aircraft manufacturer. If rib lacing cord is called for only Air Tech RC 18 Rib Stitch Cord may be used.

I. Per FAA AC 43.13- IA Para. 132 prior to the reinforcement tape application brush one thinned coat (3/1) of UA 55 to the tops of the ribs. Use the brush or other aid to work the adhesive into the fabric and to ensure air is not entrapped.

2. Allow the adhesive to dry 5 minutes and then apply the reinforcement tape.

3. Install the rib attachments per FAA approved methods specified by the original manufacturer.

Notes:

1. If rib stitching lay out the stitch spacing with a lead pencil (NO INK PENS! !) making sure tile stitches do not interfere with cables, pushrods, wiring, plumbing, etc.
2. Drain grommets and inspection rings are attached with Air Tech UA 55 adhesive.
3. Fabric doublers and optional inspection ring reinforcements may be cut from scrap fabric and are attached in the same manner as surface tapes (AT lo I - ST, page 5 herein). When cutting these items use pinking shears as pinked edges minimise loose fibers and unravelling.

Limitations:

Do not apply adhesive below 40 degrees Fahrenheit.

Allow 24 hours for adhesive cure to MI strength.

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PROCEDURE FOR SURFACE TAPE INSTALLATION PROCEDURE AT 101 - ST

Surface tapes are applied over all ribs, seam and trailing edges. Widths of tape must equal manufacturer's FAA approved specification or the old fabric whichever is greater.

1. For application of surface tapes a thinned mixture of adhesive is used (3 parts adhesive reducer RA 4000 to I pan UA 55). To the arm whew tapes will be installed brush one thinned coat of adhesive; allow to dry 5 minutes; then apply a second thinned coat. Brush the adhesive only as wide as the tape.
2. Use thinned adhesive to wet out the area to which the tape will be installed. Lay a tape on the wet adhesive and use the brush to smooth it out applying more adhesive to fully wet it out. This will ensure removal of all entrapped air and complete the bonding of the tape to the fabric underneath.
3. Tapes to be wrapped around a trailing edge or curved tip can be applied by taking advantage of the "heat shrinking" feature of the material. Cement the canter I/4 inch of the tape to the surface, allowing the tape to stand up at right angles to the surface until the adhesive has dried (10 minutes). Hold a small piece (4 in, x 12 in.) of cardboard under the tape as a backup and iron the tape. It will begin to shrink and curl around the surface laying flat as it does so. As it lays down, remove the cardboard and continue ironing directly on the surface until the tape lays flat without wrinkles. Then brush adhesive under the tape and cement it in place.
4. After tapes are installed brush two thinned coats of adhesive over all surface tapes (Refer Procedure AT 101 - FA, Step 6, Page 2).
- 5, After the last coat of adhesive is dry (30 minutes minimum) iron all the edges of the tapes

with a small iron Set at 250 - 275 degrees Fahrenheit. This temperature is enough to soften the adhesive and allow it to be feathered out without scorching it and/or shrinking the tape. Iron temperature must be set using an Air Tech iron thermometer.

Limitations:

Do not apply adhesives below 40 Fahrenheit.
Allow adhesive 24 hours cure to MI strength.

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**PROCEDURE FOR APPLICATION OF PRIMER/FILLER/UV BARRIER
PROCEDURE AT 101 PF - ALTERNATE I (ORIGINAL PRIMER)**

By virtue of this manual Revision 7 Air Tech now offers not only its original primer finish for fabric as described below but two additional primer formulations to accomplish the same task. These alternatives are described on subsequent pages; the first alternative being essentially the same primer system as this original but without the requirement for the addition of any Flex Resin, and the second being a non toxic formulation intended for use where environmental compliance is only possible with such a formulation. All the primer systems described herein can successfully be applied to the fabric.

After the fabric and tapes are installed move the assembly into the paint area for application of the flexible primer/filler/uv barrier (Pm 1010).

I. To ensure the primer attains the maximum wetting and adhesion the entire fabric covering must be cleaned with Air Tech Fabric Wash (RF 4020). Allow it to dry 30 minutes before application of the primer.

2. Spray three cross coats of the Air Tech Pm 1010 primer over the entire wince. These may be sprayed in rapid succession waiting between coats only until the surface is dry to the touch, normally 15-20 minutes. Apply coats as wet as possible to ensure good soakage into the fabric weave. It is permissible to apply the first coat with a brush; this may even be necessary on the fine weave fabric for penetration.

Mix the Pm 1010 as follows:

2parts
1part
1 part
1 1/2parts

PFU Primer
PCU 2010 Primer Catalyst
Reducer/Thinner RT 4040 or RT 4085
FA 3030 Flex Resin

Notes:

- a. Pm 1010 must be mixed in paint shaker prior to use.
- b. ALWAYS add the catalyst or flex resin to the primer never vice versa.
- c. Material is ready to spray upon mixing; no induction time is required.
- d. RT 4070 thinner is used at temperatures below 75 F; RT 4085 is used at temperatures above 75 F.
- e. Air pressure must be set to obtain 35 psi at the gun.

3. Many areas are to require sanding let the primer cure for 12 hours after which it can be dry or wet sanded with 280 . 320 grit sandpaper. Do not sand over rib stitches, rivets, etc, but rather scuff these areas with a 3M Scotchbrite Pad #7447 (3M Bldg. Svc. and Cleaning Products Div., St. Paul, MN 55144).

4. Recrating can be done anytime after 12 hours up to one week without sanding or scuffing. After one week the surface must be sanded and/or scuffed for proper adhesion.

5. Primed surfaces are now ready for topcoating with selected color. Follow manufacturer's instructions during application.

ALTERNATE - 2 METHOD

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**PROCEDURE FOR APPLICATION OF PRIMER/FILLER/UV BARRIER
PROCEDURE AT lot PF - ALTERNATE 2**

The Alternate 2 procedure for application of the primer/filler/us barrier is essentially the same as the Alternate I or the original Air Tech procedure. It differ only in the fact that the user no longer has to add any Flex Resin to the mixture to obtain the desired flexibility for use on a fabric surface. Air Tech accomplishes this in the manufacturing process. After the fabric and tapes are installed move the assembly into the paint area for application of the flexible primer/filler/us barrier.

1. To ensure the primer attains the maximum wetting and adhesion the entire fabric covering must be cleaned with Air Tech Fabric Wash (RF 4020), Allow it to dry 30 minutes before application of the primer.

2. Spray three cross coats of the Air Tech primer mixture over the entire surface, These may be sprayed in rapid succession waiting between coats only until the surface is dry. to the touch, normally 15 - 20 minutes.

Apply coats as wet as possible to ensure good soakage into the fabric weave. It is permissible to apply the first

coat with a brush; this may even be necessary on the fine weave fabrics for penetration, For clarification and boner understanding the primer formulations used in this Alternate 2 procedure are designated PFU 1020 for the standard and PFU 1030 higher solids formulation, Follow mixing ratios for each formulation on the cans. Components used in each formulation are:

PFU 1020 - Primer Mixture Components

PFU 1020 Primer Filler Base

PCU 2010 Primer Catalyst

Reducer Thinner RT 4070 or 4085

PFU 1030 Primer Mixture Components

PFU 1030 Primer Filler Base

PCU 2030 Primer Catalyst

Reducer Thinner RT 4070 or 4085

Notes:

- a. Primer bases should be mixed in paint shaker prior to use.
- b. ALWAYS add the catalyst to the primer never vice versa.
- c. Material should be allowed 5 minutes induction time after mixing.
- d. RT 4070 thinner is used at temperature below 75 F; RT 4085 is used at temperature above 75 F.
- e. The exact amount of thinner to add is a function of pressure, temperature, spray equipment, orifice sizes and painter technique.
- e. Air pressure must be set to obtain 35 psi at the gun.

3. If any areas require sanding let the primer cure for 12 hours after which it can be dry or wet sanded with 280 - 320 grit sandpaper. Do not sand over rib stitches, rivets, etc. but rather scull these areas with a 3M Scotchbrite Pad #7447 (3M Bldg. Svc. and Cleaning Products Div., St. Paul, MN 55144),

4, Recoating can be done anytime after 12 hours up to one week without sanding or sculling, After one week the surface must be sanded and/or scuffed for proper adhesion.

5. Primed surfaces are now ready for topcoating with selected color. Follow manufacturer's instructions during application.

ALTERNATE METHOD - 3

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**PROCEDURE FOR APPLICATION OF PRIMER/FILLER/UV BARRIER
PROCEDURE AT 101 - PF - ALTERNATE 3**

For those involved in fabric covering in situations where compliance with sound environmental practices is difficult or impossible Air Tech offers its non-toxic water based emulsion alternative #3 as a primer filler base coat for the fabric. All steps up to the application of the #3 primer coat are identical.

After the fabric and tapes are installed move the assembly into the paint area for application of the flexible primer/filler/uv barrier.

- I. To ensure the primer attains the maximum wetting and adhesion the entire fabric covering must be cleaned with Air Tech Fabric Wash RF 4020. The surface should be allowed to dry at least 30 minutes before primer application.
2. To the clean fabric surface apply a thinned coat of Air Tech PFUW lose using either a foam brush, paint pad, mitt or squeegee. The objective of this first thinned coat is to penetrate the fabric weave and gain adhesion to the fabric. If the material has a tendency to pinhole when applied wetting the fabric prior to this first coat with a distilled water moistened lint free cloth or sponge will eliminate the pinholes. The primer PFUW lose can be thinned with distilled water.
3. After the first coat is dry a second cross coat should be applied to the surface. This coat can likewise be applied by foam brush, pad or by spraying using either an airless, HVLP or regular air pressure type spray gun, After drying this second coat should be sanded smooth with 280 - 320 grit. Do not sand over rib stitches, rivets, etc. but rather sour these areas with a 3M Scotchbrite Pad #7447 (3M Bldg. Svc. and Cleaning Products Div., St. Paul, MN 55144).
4. Apply a third coat of PFUW lose to achieve coating thickness as desired. Apply only enough material as necessary to fill the weave as abase for the color coat. Excess material is never a good idea on fabric. After drying sand surface smooth as in step 3 using up to a 400 grit in preparation for the color coat.

Notes:

- a, Do not allow PFUW lose to freeze.
- b. When applying any water containing coating ie. PFUW lose temperatures should be above 50 F and humidity below 70%. To achieve these curing conditions a heated area maybe necessary. Remember, that for the coating to cure successfully conditions must be such that the water will evaporate therefore the need for these conditions.

c. Like aircraft dope this filler coat is softened and/or swelled by certain ketones, alcohols and aromatic solvents. Keep them away from the surface. This primer is not affected by fuels, oils or other liquids normally found around an aircraft.

5. Primed and sanded surfaces are now ready for top coating with selected color. Make certain material is fully cured and dry, normally one day at 70F and less than 70% relative humidity, prior to topcoating. Follow manufacturer's instructions during application.

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PROCEDURE

FINISH COLOR COAT-CBP

When you reach the color coat you are near the end of your project Resist every temptation to hurry up and the job should turn out as you desire. There are a few precautions to remind you of at this point

The primer coat is porous by design and it must be fully cured before application of the top coat. If it is not the color will "bite in" too much and the high gloss can be lost. Let the primer cure 2-3 days at 70F to ensure it is fully cured. Remember, if the shop cools down at night it may not have an adequate cure temperature. Curing really slows below 50F. Also, it is very, important to ventilate the interior Cavities of solvent vapors as mentioned on previous pages. Unlike metal or a hard surface the first coat of primer evaporates both inside the part and outside. These vapors must be removed for fix primer to cure successfully. Sand the primer necessary to provide a smooth surface for painting. Keep in mind that if more than 5 days elapse after priming the surface must be sanded for adhesion. The water based PFUW primer must be scuff sanded prior to painting.

The first step in color coating or painting a to seal the fully cured primer coat. The most common option is to paint one coat of color on the primer. This color coat should be allowed to cure for 4 days at 70F. It is most important for this coat to cure enough so that subsequent coats stand up and do not penetrate. This yields the "wet look" everyone looks for.

The mix ratios for the color coat are as follows.

1 part Air Tech CBP color
1 part CCM 5020 or 5030 catalyst
(5020 below SOF; 5030 above SOF)
1 part Reducer thinner
(4070-cool weather, 4085 warm weather)
Reducer can be varied to suit.

Notes.

- 1 Color must be mixed thoroughly in a paint shaker prior to use. Mixed formula may be sprayed immediately; no induction time is required.
2. Always add catalyst to color not vice versa
3. To accelerate film cure and reduce dust free time FX 6284 Accelerator may be used 1/2 ounce per sprayable quart. Don't use in metallics or exceed this amount.
4. When using HVLP turbines always use warm weather catalyst and reducers

If the topcoat is one of the poor hiding colors ie Some yellows, reds, green, etc, one could use white for this first coat to ensure a uniform substrate color for the topcoats. Also some white could be mixed in this first coat to provide additional hiding, the shade would change but it would be uniform for the topcoats.

Prior to spraying color in dry climates, spray a light mist coat (40-50 psi) of Air Tech Static/Dust Eliminator over the entire surface and allow it to dry.

Apply a full wet coat of mixed color using 40-50 psi at the gun

After this first color coat has been applied and allowed to cure it should be color sanded with 400 grit to provide a smooth surface for the topcoats.

Normally one will apply two more color coats allowing flash off of 20-30 minutes before the next coat. This will give the high gloss wet look desired. If a good hiding color is chosen ie. White one coat may be all that is necessary, use your own judgement on this.

For trimming allow at least 8 hours before taping(70F) Wipe the area to which the second color and tape is to be applied with a cloth dampened with acetone to improve tape and paint adhesion. For taping use only 3M Fine line masking tape.

After trim color is applied tapes must be removed as soon as possible; do not leave them in place as they will become most difficult to remove.

Color coats can be recoated without sanding up to 7 days after previous coat. Of course, if the surface is trashy or rough it must be sanded smooth. Sanding is necessary after 7 days for mechanical adhesion.

Clean spray equipment with lacquer thinner.

WARNING: HEED ALL SAFETY PRECAUCIONS!!

Fabric Repair

REPAIR OF AIR TECH FABRIC

In the event of puncture or rip of your Air Tech fabric Cover, repair is simple. Consult FAA AC 43.13-1A for instructions and details on patch size.

PROCEDURE:

1. Around the hole an area the size of the patch should be lightly sanded to roughen up the surface for adhesion. One should begin to see the primer showing through when it is sanded enough. Ensure the patch has an adhesive area with a distance of at least 2 inches from the edge of the hole or rip.
2. Thoroughly clean the area with RA 4000 adhesive reducer to remove any foreign matter.
3. Thin the UA 55 adhesive with reducer to a ratio of 3 parts reducer to 1 part adhesive.
4. Brush two thinned coats of adhesive on the area to receive a patch allowing each coat to dry for 5 minutes. Dryness is indicated by a dull or flat sheen.
5. Cut a fabric patch to the proper size. Pinked edges work better.
6. Using the thinned adhesive apply the patch in the same manner used for surface tapes. Thoroughly saturate the patch with adhesive and work any entrapped air out.
7. After the patch is dry it may be slightly tautened with an iron to take any slack out.
8. Apply one or two coats of thinned adhesive to the patch. Take care to avoid any glue beads or ridges. They can be removed by wetting with RA4000 and wiping them off with a clean cloth.
9. Using a teflon coated model iron , iron all the edges of the patch and feather out the adhesive.
10. Prime the patch area with Air Tech fabric primer. Let dry then wet sand and feather it in.
11. Spot paint. If possible it is better to pick up a panel or line when painting. If this is not possible Air Tech color may be blended using extra thinner in the second coat and using sprayed thinner on the wet edge.

WARNING: HEED ALL SAFETY PRECAUTIONS !!!