

FAA  
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**FABRIC COVERING PROCEDURE MANUAL**

MANUAL AT 101 REVISION 8  
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# **FABRIC INSTALLATION MANUAL**

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## **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 one is in doubt about how to accomplish such a repair. Consult approved Air Tech Manual AT 101, Rev 4 or later approved revision, original aircraft specifications and FAA AC 43.13 – 1A. 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 painting processes are simple; but, the 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 hereunder. 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 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 limitation, 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 authorizes 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, i.e. 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 material 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 applications situations are of an almost infinite variety and the amount of material to be applied is often a “judgement 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 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 requires 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 look which will improve its worth.
- Offering the best technical service in our industry.

Thank You for choosing **Air Tech!!**

## PROCEDURE – METAL PREPARATION

The adherence of ant 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.

### ALUMINIUM SURFACES (Bare, either stripped or new)

1. The bare surface must 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 i.e. 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 be then 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 remove 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 i.e, 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 **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 – 1A 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.



## **PAINTING FUSELAGES OR TRUSS ASSY'S BEFORE COVER**

**1 / 04**

When painting a fuselage or truss assy which is to be covered with fabric use the following mixing procedure for Air Tech CHSM polyurethane color.

Mix the color as per normal instructions; 3 parts color; 1 part CHSM 5071 catalyst and up to ½ part Air Tech reducer either RT 4070 Rev. 4 or RT 4085 Rev. 4.

To each quart of mixed color add 2-4 ounces of ACC 1030 which is the accelerator for the fabric primer PFU 1030-F.

Allow the assy to sit and cure for about a week in order to develop enough chemical resistance to resist the solvents in the adhesive. Also do not apply thick coats of adhesive to the part only thin coats per the instructions.

## **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; wiring 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 – 1A 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 1: 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 Rev. 3 adhesive reducer to 1 part UA55 Rev. 1 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 Rev. 1 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 Rev. 1 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 precut acetate doublers for these areas to be installed after fabric tautening; consult manufacturer specifications and your parts 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 1 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 the top of the spar to the bottom. Before attaching the leading edge fabric, coat the 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 the normal manner paying particular attention to fully saturating the 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 Rev. 1 thinned 2 parts RA 4000 Rev. 3 adhesive reducer to 1 part UA 55 Rev. 1) must be applied to the

longerons or other structural members to which the fabric is to be attached. Where possible the 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 adhesives below 40°F.

**Allow adhesive joints 24 hours cure for full strength**

# ***TECHNICAL BULLETIN***

## **SURFACE TAPE SHRINKAGE (DARK COLORED AIRCRAFT)**

When applying surface tapes to your aircraft you should be aware that all tapes are supplied in a virgin or unshrunk condition. This normally presents no problems when covering as the temperatures encountered by a finished aircraft are less than that required to cause the fabric tapes to shrink. There is, however, an exception to this rule. Dark colored surfaces in direct sunlight can experience temperatures of 210°F or 115°C!! For this reason *we do not recommend dark colors ie. black, dark blue, dark green as a base color coat on fabric covered aircraft.*

Keep in mind when a dark color is chosen for the final aircraft finish the temperatures the surfaces can reach are above the minimum shrinking temperature of the fabric tapes. This will induce thermal stress in the taped areas as the tape is trying to shrink but the glue is keeping it from it. The situation is more often noticed when the light weight (1.7 oz) tapes are used. It becomes a struggle between the glue strength and the stresses in the tape. If the gluing is a good one no problem will result. On the other hand if the glue job on the tapes is marginal the tapes in fact may shrink a little and expose a white line along one edge or the other. If this happens one can normally just iron the tapes and ensure the glue joint is good and then repaint the area. The worst case would be to replace the tapes and repaint.

To avoid this problem it would be wise to preshrink the tapes by ironing them at a temperature above anything to be encountered in the environment, say 250°F. This will preshrink them and eliminate any possibility of later shrinking after the job is done. It is only necessary to do this to tapes, which will be exposed to direct solar radiation ie. tops of wings, etc. Other tapes, which are on the underside of the aircraft will see no excessive temperatures.

If you do use dark base color use only Regular weight (2.7 oz) tapes not the light, weight variety.

If you have any questions on this or any other aspect of the fabric covering process please call us at 1-800-325-1650.

**WE WANT TO HELP YOU!**

Visit us at Our Web Site:  
[airtechcoatings.com](http://airtechcoatings.com)

**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 Rev. 3 to 1 part UA 55 Rev. 1). To the area where 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 center ¼ 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. The 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 full strength.

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## **PROCEDURE FOR APPLICATION OF PRIMER/FILLER/UV BARRIER PROCEDURE AT 101 PF – ALTERNATE 2**

The Alternate 2 procedure for application of the primer/filler/UV barrier is essentially the same as the Alternate 1 or the original Air-Tech procedure. It differs 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 the 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/UV 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 Rev. 3). Allow to dry 30 minutes before application of the primer.
2. Spray one coat of the primer and allow to stand overnight; the next day spray two coats of primer “wet on wet” waiting only until the surface is dry to the touch – normally 15-20 minutes. Do not spray if coat has been on an hour – one must again wait overnight. Do not spray excessively thick coats as this will retard cure severely. Apply wet coats to ensure good soakage but do not load up the primer. On thin fabrics the first coat can be brushed; keep it thin to avoid brush marks. For clarification and better understanding the primer formulations used in this Alternate 2 Procedure are designated PFU 1020 for the standard and PFU 1030-F higher solids formulation. Follow mixing ratios for each formulation on the cans. Components used in each formulation are:

PFU 1020 – Primer mixture components	PFU 1030-F Primer mixture components
PFU 1020 Primer Filler Base	PFU 1030-F Primer Filler Base
PCU 2010 Primer Catalyst	PCU 2030-F Primer Catalyst
Reducer Thinner RT 4070 Rev. 4 or 4085 Rev. 4	Reducer Thinner RT 4070 Rev. 4 or 4085 Rev. 4

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 Rev. 4 thinner is used at temperatures below 75 F; RT 4085 Rev. 4 is used at temperatures above 75 F. 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 scuff these areas with a 3M Scotch brite 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 scuffing. After one week the surface must be sanded and/or scuffed for proper adhesion.

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

## **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 – 1A 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 – 1A.

## **INSTALLATION OF FABRIC**

1. Per FAA AC 43.13 – 1A 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 – 1A.
4. Air-Tech UA 55 Rev. 1 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 – 1A 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.



**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:

1. Except for surface tape application (see Step 6 below & page 5 herein) thin the UA 55 Rev. 1 adhesive concentrate with Air-Tech adhesive reducer (RA 4000 Rev. 3) in the ratio of 2 parts reducer to one part of UA 55 Rev. 1 by volume. The viscosity of thin “pancake” syrup is about right.
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 PE 1700 or PE 1730 applied. Prior to primer application surfaces must be cleaned and treated according to FAA AC 43.13 – 1A Chapter 6.
3. Wood surfaces to which fabric is to be attached must be sanded and cleaned (FAA 43.13 – 1A 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 Rev. 3 to 1 part UA 55 Rev. 1) 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 Rev. 3 to 1 part UA 55 Rev. 1) on the glued attachment area.
7. On larger surfaces such as leading edges, “turtle decks”, etc. brush two thinned coats (3/1) of adhesive on the area after fabric gluing and shrinking is complete.

Limitations:

1. Do not apply adhesives below 40°F.
2. Allow 24 hours for cure to full strength.

Material Safety Data Sheets are available upon request.

**PROCEDURES FOR TAUTENING POLYESTER FABRIC  
PROCEDURE AT 101 – T**

***GENERAL SHRINKING – OPEN BAY SHRINKING***

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

1. 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 over night (12 hour) adhesive cure start 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 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 process again. This final ironing develops peak tension and stabilizes the weave to prevent any tension loss and will give the smooth, taut , wrinkle free surface desired.

**SHRINKING OF CORNERS, WRINKLES AND SMALLER AREAS**

1. 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 scorch 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 Rev. 1 Rib Stitch Cord may be used.

1. Per FAA AC 43.13 – 1A Para. 132 prior to the reinforcement tape application brush one thinned coat (3/1) of UA 55 Rev. 1 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 the stitches do not interfere with cables, pushrods, wiring, plumbing, etc.
2. Drain grommets and inspection rings are attached with Air-Tech UA 55 Rev. 1 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 101 – ST, page 5 herein). When cutting these items use pinking shears as pinked edges minimize loose fibers and unraveling.

Limitations:

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

# AIR-TECH COATINGS, INC.

## PFU 1030-F FABRIC PRIMER SYSTEM

FLEXIBLE POLYURETHANE PRIMER FOR FABRIC  
FLAME/FLASH RESISTANT

### **EXCELLENT UV PROTECTION**

**APPLY IN HUMID WEATHER**  
**MSDS AVAILABLE ON REQUEST**

#### COMPONENTS/MIXING RATIO:

PFU 1030-F PRIMER BASE	5 PARTS
PCU 2030-F PRIMER CATALYST	1 PART
RT 4070 Rev. 4 OR 4085 Rev. 4 Thinner	UP TO 1 PART
(VARY THINNER FOR CONDITIONS, EQPT. ETC.)	

#### MIXING:

ADD MEASURED AMOUNTS OF CATALYST AND THINNER TO MEASURED AMOUNT OF PFU 1030-F; NEVER ADD BASE TO CATALYST. MIX THOROUGHLY. POT LIFE IS SHORT 1-1.5 HOURS @ 75F SO MIX ONLY THE AMOUNT NEEDED WITHIN THIS TIME PERIOD. ALSO REMEMBER TEMPERATURE DRAMATICALLY AFFECTS POT LIFE. HIGHER TEMPS MEAN SHORTER POT LIFE. CONVERSELY POT LIFE AND CURE SLOWS AS TEMPERATURE COOLS. USE ACC 1030 ACCELERATOR BELOW 70 F TO ENSURE PROPER CURE.

#### PROCEDURE:

1. To ensure primer attains the maximum wetting and adhesion the entire fabric covering must be cleaned with Air-Tech Fabric Wash (RF 4020 Rev. 3). Allow it to dry 30 minutes before application of the primer.
2. Although it is possible to spray all three coats in succession, color coats stand up better if one applies two coats of primer then wait overnight, lightly sand and then apply the third coat of primer. Spray good wet coats but don't attempt to load up the primer; this will only retard cure. If additional coats are applied to fill weave or hide tapes wait until previous coats are fully cured!  
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, usually on fine weaves; thin this coat to avoid brush marks!

#### Notes:

- a. Primer base should be mixed in paint shaker prior to use.
  - b. RT 4070 Rev. 4 thinner used at temp. below 85F; RT 4085 Rev. 4 above 85F.
  - c. Set air pressure at 35 psi at the gun.
3. If any areas require sanding let primer cure for 12 hours. Use 320 – 380 wet sandpaper and use Scotchbrite pad #7447 over rib stitches, rivets etc.
  4. Recoating can be done anytime after 12 hours up to one week without sanding.
  5. Ventilate all cavities to remove solvent vapors. Remember on fabric evaporation takes place inside the part as well as outside. These vapors must be removed.
  6. Primed surfaces are ready for Air-Tech color coat. Don't topcoat unless these undercoats are cured; in other words don't rush it.

#### SPECIFICATIONS:

DRY FILM – 1.5-2 MILS % SOLIDS (SPRAYABLE) – 46%+      WT/GAL – 11.3 LB.

# TIPS FOR USE

## PFU 1030-F FABRIC PRIMER

The PFU 1030-F Primer is a revolutionary new product for the aircraft covering enthusiast. It is unique in flame/flash resistance properties. With its inherent flexibility and chemical resistance PFU 1030-F is unique in the fabric covering industry. It provides a good base for Air-Tech color.

Please consider these points as you complete your project:

1. Spray gun choice – Any good quality commercial spray equipment will work including HVLP. Choose the right tip, nozzle and aircap – normally that recommended for medium weight material.
2. Follow safety precautions regarding breathing apparatus. Polyurethanes use isocyanates as catalyst. Any paint or dope contains solvents and harmful vapors so be smart.
3. Clean the fabric; primer will not stick to a soiled or greasy cloth.
4. The first coat can be sprayed or brushed. Brushing on the lightweight fabrics is recommended as weave pores are not uniform after shrinking. Brushing a coat can effectively seal the fabric and ensure good penetration or soakage. Thin this coat to avoid brush marks and a lot of sanding!
5. When spraying apply the coats “wet”. Do not use a tack coat. Wet coats allow urethanes to flow and level properly. Spray surfaces horizontal if possible for best leveling. Do not load up or spray excessive amounts.
6. The primer has a relatively short pot life so mix small quantities. Remember that as temperatures increase pot lives shorten. In cool temperatures (below 70F) use ACC 1030 accelerator for proper cure.
7. Up to about 85 F use RT 4070 Rev. 4 thinner; above 85 F use RT 4085 Rev. 4.
8. When adding thinner add only the amount necessary to give the proper viscosity for your paint conditions and equipment. The recommendations are based on normal situations but yours may be slightly different.
9. The primer can be applied all at once but does seem to work better if only two coats are applied and the third coat is applied the next day after a light sanding. The color seems to stand up better.
10. If any pinholing is noticed flood the pinholes out to eliminate them. After the primer dries pinholes can be filled with brushed on primer. Pinholing occurs if the fabric is not glued down on hard surfaces such as leading edges or if the fabric is shrunk in an uneven fashion making the pores all different sizes.
11. **For best curing always ventilate the interior cavities of parts which are totally enclosed ie. Wings, tail feathers. This will ensure curing from the back side also and will remove solvent vapors trapped in the part. These vapors would attack the primer if not ventilated inhibiting cure. Air through a drain hole or inspection port will help a great deal.**
12. The primer may now be topcoated with Air-Tech color. Apply the color within 5 days or an overall sanding of the primer surface is necessary for adhesion.

Lastly, there are no real surprises in the use of PFU 1030-F; just use good painting practices the instructions and these tips as a guide. However, if you have questions and are uncertain it is much better to call us and ask than to rework a mistake. We are ready to help anytime!

**MIXING RATIOS****PRIMER FILLER PFU 1030-F**

TO MIX APRX ONE QUART SPRAYABLE MATERIAL:

ITEM	RATIO	AMOUNT
PFU 1030-F PRIMER	5 PARTS	25 OZ.
PCU 2030-F CATALYST	1 PART	5 OZ.
RT 4070 Rev. 4 OR 4085 Rev. 4 THINNER	UP TO 1 PART	UP TO 5 OZ.

TO MIX ONE GALLON SPRAYABLE MATERIAL:

ITEM	RATIO	AMOUNT
PFU 1030-F PRIMER	5 PARTS	100 OZ.
PCU 2030-F CATALYST	1 PART	20 OZ.
RT 4070 Rev. 4OR 4085 Rev. 4 THINNER	UP TO 1 PART	UP TO 20 OZ.

NOTE THE SHORT POT LIFE AND MIX NO MORE THAN CAN BE USED WITHIN THIS TIME PERIOD.

Procedure Manual No. AT 101  
Original Issue Date: September 19, 1989  
Revision: 8 Date: June 1, 1997

**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.

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 Rev. 3. 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 1050 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 1050 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 scuff 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 1050 to achieve coating thickness as desired. Apply only enough material as necessary to fill the weave as a base 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 1050 to freeze.
  - b. When applying any water containing coating ie. PFUW 1050 temperatures should be above 50 F and humidity below 70%. To achieve these curing conditions a heated area may be 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 topcoating with selected color. Make sure certain material is fully cured and dry, normally one day at 70 F and less than 70% relative humidity, prior to topcoating. Follow manufacturer's instructions during application.

**STOP!!!**

**THERE ARE NOW TWO AIR TECH  
COLOR SYSTEMS.**

**VERIFY WHICH ONE YOU HAVE AND  
USE THE APPROPRIATE  
INSTRUCTIONS**

**CBP is the old color system which has been  
around for years.**

**CHSM is the new high solids color system  
which will become the standard and replace  
The CBP system.**



Procedure No. AT 101-C Rev. 7  
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**FAA  
APPROVED**

## **PROCEDURE**

### **HIGH SOLIDS FINISH COLOR COAT – CHSM**

**THIS PROCEDURE APPLIES TO THE HIGH SOLIDS COLOR SYSTEM ONLY!!!**

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 70 F 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 50 F. 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 the primer to cure successfully. Sand the primer as necessary to provide a smooth surface for painting. Keep in mind that if more than 5 days elapse after priming the surface must be sanding for adhesion. The water based PFUW primer must be scuff sanded prior to painting.

Shake the color thoroughly to ensure uniform pigment dispersion. Manual mixing is not adequate.

**The first step in color coating or painting is to seal the fully cured primer coat.** The most common option is to paint one coat of color on the primer. The color coat should be allowed to cure for 4 days at 70 F. It is most important for this coat to cure enough so that subsequent coats stand up and do not penetrate. However, the cured coat must be sanded with 320 or 400 grit sandpaper (wet or dry) before painting in order to achieve mechanical adhesion. This yields the “wet look” everyone looks for.

The mix ratios for the color coat are as follows:

3 part	Air-Tech CHSM color
1 part	CCHSM 5071 catalyst
up to ½ part	Reducer thinner (4070 Rev. 4– cool weather; 4085 Rev. 4 warm weather) Reducer can be varied to suit.

## Example Mix Quantities In Ounces

CHSM Color	24	48	72	96
CCHSM CATALYST	8	16	24	32
Reducer	2-4	4-8	6-12	8-16

**Don't mix too large a quantity as pot life is 1-2 hours depending on temperature and humidity.**

- 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 Color Accelerator may be used ½ ounce per sprayable quart. Don't use in metallics or exceed this amount. Use below 65 F.
4. When painting metal on which fabric is to be glued add 1 ounce of ACC 1030 accelerator or the Color accelerator to increase crosslinking and resistance to the solvents in the glue. Failure to do so might cause blistering when the glue is applied. Allow the part to also cure fully before gluing.
5. When using HVLP turbines always use warm weather reducers.
6. **If the top coat 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 or mix some white (half & half) to provide additional hiding.**
7. **For best results always spray surfaces horizontal. This allows one to get proper amount of pigment on the surface.**

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

Apply a full wet cross 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 cross coats allowing flash off of 20-30 minutes before the next coat. Test this coat to be "finger slick" not tacky 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. **If you have any doubt add another coat of color.**

For trimming allow at least 8 hours before taping (70). 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 3M Fineline masking tape.

After trim 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 removed 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 PRECAUTIONS!!!**

## **Repair Procedure**

### **Air-Tech Fabric Covering**

In the event of puncture or rip of fabric covering on which Air-Tech coatings have been applied repair is simple. Consult FAA AC 43.13 – 1A for instructions and details on patch size etc.

#### **PROCEDURE:**

1. Around the rip or hole the 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 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 Rev. 3 adhesive reducer to remove any foreign matter.
3. Thin the UA 55 Rev. 1 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 much better.
6. Using the thinned adhesive (3/1) apply the patch in the same manner used for the surface tape. Thoroughly saturate the patch with adhesive and work any entrapped air out.
7. After the patch is dry it may be slightly tautened to take any slack out.
8. Apply two thinned coats of adhesive to the patch allowing each to dry 5 minutes. Take care to avoid any glue beads or ridges which would have to be sanded later.
9. Using a Teflon coated model maker's iron set at 250 F iron all the edges of the patch and feather out the adhesive. Note the adhesive thermally softens at this temperature and feathering is very easy. If ridges or beads persist soften them with MEK and wipe off with a clean untreated cotton cloth.
10. Prime and paint the patched area as necessary.

**AIR TECH COATINGS, INC.**

**INSTRUCTIONS FOR CONTINUED AIRWORTHINESS**

- 1. Inspect the aircraft fabric covering as recommended by the manufacturer and/or AC43-.13-.**
- 2. Inspect the fabric covering annually per FAR 43 appendix “d”.**
- 3. Keep fabric clean using a mild soap and water solution rinsing thoroughly thereafter.**
- 4. Use a good automotive type wax to maintain cosmetic appearance as necessary.**
- 5. Make fabric covering repairs per Air Tech Coatings, Inc. Fabric covering manual AT – 101 Rev. 8 or later – Section “Repair Procedures”.**
- 6. Replacement fabric covering materials can be obtained from Air Tech Coatings, Inc. Tel 1-800-325-1650 or 501-985-1484; sales.wwwairtechcoatings.com Fax 501-985-1359**

**Note: Make a copy of this information and attach to airframe log.**

**Make an entry in the remarks section of FAA form 337. ICA as addressed in the ...  
Air Tech Coatings, Inc Fabric Covering Manual AT 101, Rev. 8 or later.**

Procedure AT 101 – FAA Rev 2  
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### **Procedure – FAA Approval/Compliance**

This information is offered to assist the user of the Air-Tech Covering process in returning his aircraft to service.

Compliance or approval under the referenced STC requires strict adherence to the Air-Tech process as described in Procedure Manual AT 101; Revision 4 or later approved revision including the use of Air-Tech materials approved for such use under a Parts Manufacturer Approval (PMA). Deviation from approved procedures and/or substitution of other materials violates both Federal Regulations and this Supplementary Type Certificate (STC).

For an aircraft or component listed on the STC Certificate of Eligibility the repair and return to service is handled in the normal manner. A certified mechanic must fill out the FAA Form 337 and make the corresponding entries in the aircraft log book. The entries must state that the repair or covering was performed in accordance with the Air-Tech Procedure Manual AT 101; Revision and Date noted and under the STC referenced herein. The aircraft must be inspected and returned to service by an FAA representative or delegated authority with an Inspection Authorization (IA).

For an aircraft or component not yet listed on the Certificate of Eligibility a FAA representative or delegate with Conformity Inspection Authority (Eng. Inspector, MIDO Inspector, FSDO Inspector, or DAR, (Designated Airworthiness Representative) must complete Form 8100-1 Conformity Inspection Record. Follow the procedures referenced on the form.

As an alternative one can request a field approval from local FAA authorities. Granting of this varies from location to location but it is usually possible.

# **APPENDIX**

# TIP SHEETS

## Air-Tech Fabric Covering Process

The following attempts to answer some of the most commonly asked questions concerning the Air-Tech process. Of course the procedures in the manual control the process but these can be additional help. We hope they help you be even more successful with our products and your aircraft projects.

1. Surface Preparation
  - a. Aluminum – Please follow recommended procedures using acid etch cleaner, alodine and two part Air-Tech epoxy primer. Zinc chromate primer will not work.
  - b. Steel – Sandblast or clean thoroughly and coat with two part Air-Tech epoxy primer.
  - c. Wood – Use only catalyzed Air-Tech polyurethane varnish. Do not use hardware store “Polyurethane” or Spar varnish as glues etc. will lift them.
2. Fabric
  - a. Blanket versus Envelopes – This is the customer’s option. With the new fabrics 70 inches wide we use the blanket method almost exclusively.
  - b. Fuselage Envelope? – For fuselages with permanent vertical fins we sometimes sew a blanket with the backbone or spine sewn in. However on fuselages we always put on the belly piece last; this is the first to be damaged and it can be easily replaced by using this approach.
  - c. Weight of Fabric – We recommend the following:
    - a. Spray planes or large planes (DC-3) use the 3.7 oz.
    - b. Std. Cat; exp.; aerobat.; etc. – 2.7 oz. Or a combination ie. 3.7 oz. On belly, elevator etc.
    - c. Ultralights – 1.7 oz. Or a combination.The weight of the Air-Tech coating system is less than any other so heavier fabrics can be used with no comparative weight penalty.
3. Application of the fabric
  - a. For new users always start with a small part i.e. elevator to learn the process.
  - b. One of the most common errors is the use of too much adhesive (UA 55 Rev. 1). Keep the glue thin by adding thinner (RA 4000 Rev. 3) to compensate for evaporation. Remember a thin bond is typically stronger than a thick one.
  - c. Always coat all surfaces which will come in contact with fabric with two coats of thinned adhesive. This especially includes leading edges, turtledecks, ribs etc.
  - d. Be neat and tidy with the glue; this will make for a better finish job.
4. Shrinking the Fabric
  - a. Follow procedures paying close attention to temperatures.
  - b. Use only a clothing iron (1100 watts) for shrinking in open bay areas. Heat guns are too difficult to control.
  - c. Use a small Teflon coated iron or heat gun to eliminate wrinkles or puckers around edges etc.
  - d. Shrink the fabric as tight as the structure will allow. A good fabric job is a tight one. Also remember Air-Tech coatings have no tautening properties.
5. Mechanical Attachment
  - a. Follow manufacturer’s specification and AC 43.13 when applicable.
  - b. For rib stitching use Air Tech’s FAA/PMA approved flat woven rib lacing.
6. Surface Tapes
  - a. Apply the surface tapes using Air-Tech FAA/PMA approved UA 55 Rev. 1 Adhesive per the recommended procedure.
  - b. Pay close attention to detail and cleanliness when applying the tapes. The idea is to have them on perfectly prior to the application of any coatings. Iron the tape edges per Air-Tech procedures to ensure that all edges are flat. Do not use too high a temperature as it will shrink the tape.
  - c. Glue ridges or drops should be removed by wetting them with MEK until soft and wiping them off with a clean cotton cloth. They will show through if not dealt with.

## 7. Primer/Filler Application

- a. Spray Gun Choice – Any good quality commercial grade spray equipment will work including HVLP such as the Croix.
- b. With the Croix HVLP equipment most of the overspray problem is eliminated. Also the turbine air can be used for breathing if positioned in a “clean air” area.
- c. Select a medium size tip/ air cap for Air-Tech materials. It sprays like most polyurethanes or enamels.
- d. The materials may be applied at temperatures of 50-100 F regardless of humidity as long as the spread between ambient temperature and the dew point is 5°F or greater. The materials are not prone to “blush”.
- e. Clean fabric per Air-Tech procedures with FAA/PMA approved RF 4020 Rev. 3 Fabric Wash.
- f. Apply the coats of primer “wet” - No tack coats! Wet coats allow the polyurethane to flow and level properly.
- g. The first coat of primer can be brushed if one wishes. We spray all coats but some prefer brushing that first coat.
- h. The primer has a relatively short pot life so mix small quantities.
- i. Up to about 85°F use the RT 4070 Rev. 4 thinner; above 85°F use RT 4085 Rev. 4. Never store materials in a shed or area where temperatures will exceed 100 F.
- j. Materials to be used should be at ambient temperature not hot or cold from storage.
- k. If using a turbine system which heats the air note the flash time; if too short additional hose can be used or possibly a slower thinner or a blend of both.
- l. Apply the primer coats (cross coats) on after the other allowing enough time for “flash off” in between.
- m. After the final primer coat allow the part to cure overnight. It can then be sanded as required to remove bugs or trash. No overall sanding is required.

## 8. Color Coats

- a. After the final primer coat the color should be applied within 5 days for maximum adhesion. After 5 days the entire surface must be wet sanded for adhesion.
- b. Use of other color coats. The Air-Tech process is an FAA approved system. Best results will be obtained using Air-Tech color – maximum adhesion, maximum flexibility and the best finish.
- c. Spray the color coats on “wet” – Do not use tack coat.
- d. Allow the first coat to dry to the touch before applying the second coat.
- e. Apply only enough material to get color holdout. Excess materials serve no purpose.
- f. Normally the process requires no sanding or buffing; however if one is preparing a competition showplane fantastic results can be obtained as follows:
  1. After the final primer coat is allowed to cure overnight sand as necessary to gain a smooth surface for topcoating.
  2. Apply one color coat and allow to cure 2-3 days.
  3. Wet sand the surface using fine sandpaper 380 or finer.
  4. Apply second color coat.
  5. Normally buffing would not be required but if one wishes to buff Air-Tech buffing procedures should be followed. Begin after 8-12 hrs of cure.

Finally, please remember we are here for any question you have. Call us before any step if you are uncertain about how to proceed. We welcome these calls anytime on our Watts Line 1-800-325-1650.



## **Technical Data Sheet**

### **Fabric Wash RF 4020 Rev. 3**

As an aid to your fabric covering project Air-Tech includes RF 4020 Rev. 3 Fabric Wash with each kit. The Fabric Wash is a solvent alcohol blend which does three things:

- When applied before printing it helps ensure the removal of contaminants ie handprints which are not clearly visible.
- Using the Fabric Wash will greatly reduce static electricity when spraying primers. This will help reduce the “pickup” of dirt on the sprayed part.
- The Fabric Wash acts as a promoter of adhesion of the coatings to the fabric.

When applying use a lint free untreated cotton cloth wetted with the Fabric Wash. Wipe the part to be sprayed no more than 1 hour prior to spraying. Do not saturate the part with Fabric Wash; this is not necessary.

Prior to spraying allow the part to dry completely!! Do not spray any coating until the part is completely dry!!!

Fabric Wash should be used prior to spraying the primer/filler on the raw fabric. It can also be used prior to spraying the color coat if static electricity is a problem; however, make sure primer is cured before applying Fabric Wash.