



## Alumigrip® 4200 Application Procedure

### Characteristics



Product  
Information

Alumigrip® 4200 is a 3-component high solid durable polyurethane topcoat that provides premium gloss and distinctness of image (DOI) designed to meet and exceed the expectations of the general aviation (GA) industry.

- Optimal application properties in different environmental conditions
- Buffable
- Low VOC; High Solid technology
- Extended durability / UV resistance
- Resistant to aircraft hydraulic fluids and chemicals

### Components



Base  
Curing Solution  
and  
Activator

4200GXXXX  
Alumigrip® PC-242  
Alumigrip® 4950 (standard activator) (AC-139)  
Alumigrip® 4951 (medium activator)  
Alumigrip® 4952 (fast activator)  
Alumigrip® 4953 (decoration activator)

### Surface Conditions



Cleaning

- Surface pretreatment is an essential part of the painting process.
- Apply Alumigrip® 4200 on clean primer. Remove oil, grease and other contamination prior to application.
- Recondition aged primers or topcoats with e.g. Scotch-Brite® Type A very fine to a uniform matt surface.
- Remove dust with e.g. tack rags just prior to application of Alumigrip® 4200.

### Mixing Instructions



Mixing Ratio  
(volume)

It is extremely important to maintain an accurate mix ratio of 1:1:½ as any deviation can adversely affect application and performance properties.

1 part (1 gal)	Base: 4200GXXXX
1 part (1 gal)	Curing Solution: PC-242
.125 parts (1 pint)	Activator: Alumigrip® 4950 (AC-139), 4951, 4952, or 4953



### Mixing Instructions Continued

1. Store material at room temperature for a minimum of 24 hours prior to mixing.
2. Prior to mixing put the base portion on a shaker and agitate for ten minutes until all pigment is uniformly dispersed before adding the curing solution.
3. The base component should be uniform and free of lumps, skins or hard settling.
4. The Alumigrip® PC-242 curing solution should be clear. Do not use if the curing solution has gelled, is cloudy or milky. **Do not use** if the unopened can shows signs of swelling since this indicates moisture contamination. Add the Alumigrip® PC-242 curing solution and mix thoroughly.



Note:

**Note:** Four activator options are available, depending upon the dry to tape and buffing times required. At standard temperature and humidity conditions, Alumigrip® 4950 (AC-139) will provide a 14 to 16 hour dry to tape/buff time with a wet edge time of 30-60 minutes.



Note:

**Note:** Activator options may be blended to achieve the desired combination of dry time, buffing time, pot life and wet edge characteristics in various temperature and %RH conditions.

### Mixing Instructions Continued

5. Slowly add the base and curing solution components together while stirring. Use the 4950 (AC-139), 4951, 4952, or 4953 activator to rinse the base and curing solution cans to remove residual material and ensure an accurate mix. **Be sure to mix all 3 components at the same time with no delay in the addition of the activator.**
6. Viscosity should be 17-22 seconds (#2 Zahn) and dry film thickness 2.0 – 3.5 mils / 50 – 90 microns (µm) depending on the color to achieve proper hide. Some colors may require higher film thickness to achieve full hide.



Induction Time

15 minutes.



Pot Life  
(25°C/77°F)

Alumigrip 4950 (standard activator) (AC-139)	4 hours
Alumigrip 4951 (medium activator)	3-4 hours
Alumigrip 4952 (fast activator)	2-3 hours
Alumigrip 4953 (decoration activator)	1-2 hours



### Application Recommendations



Conditions

Activator Option:	<b>A4950</b>	<b>A4951</b>	<b>A4952</b>	<b>A4953</b>
Temperature:	21 – 27°C 70 – 80°F	15 – 27°C 59 – 69°F	15 – 35°C 59 – 95°F	15 – 27°C 59 – 69°F
Relative Humidity:	30 – 65%	70 – 80%	65 – 95%	60 – 90%



Equipment

#### High pressure air-assist/airless electrostatic spray equipment. (e.g. Graco Pro 4500)

Fluid pressure	120 – 170 bar / 1800 – 2500 psi
Atomizing air pressure	4,5 – 4,8 bar / 65-70 psi
Flow rate	260-280 mL per minute
Tip size	0.23 mm / 0.009 inches, angle 60°

#### Air Electrostatic spray equipment (e.g. Graco Xs3 / Xs4)

Fluid pressure:	Fluid pressure:
Atomizing air pressure	5 bar / 70 psi
Flow rate	270-290 mL per minute
Nozzle orifice	1.0 mm / 0.026 inch

#### Air assist airless electrostatic spray equipment.

Fluid pressure:	850 - 1000 psi
Atomizing air pressure:	55 - 65 psi
Tip size:	0.33mm (.013 inch) or smaller, preferably 0.28mm (.011 inch)

#### Next generation spray equipment (e.g. HVLP / RVLVP)

Input air	Max. 3,1 bar / 45 psi
Fluid/pot pressure	0,3 – 1,4 bar / 5 to 20 psi
Tip size	1.2 to 1.4 mm / 0.047 – 0.055 inch

#### Conventional Air

Atomizing air pressure:	45-65 psi
Pot pressure (if applicable):	5-20 psi
Tip size:	1.2 – 1.4 mm



## Application

1. Keep mixture under slight agitation during induction and spraying. The objective with the first coat is to apply the material with sufficient wet film thickness to form a continuous film, almost full hide. A smooth, even, wet coat is desirable. Make every effort to avoid "dry" spraying, as this will increase the potential for orange peel.
2. Allow 45-60 minutes flash-off time or until the surface is tacky with little or no transfer to the touch.  
\* Dry time refers to the elapsed time between the start of the first coat application and the start of the second coat application.
3. Apply second coat. This coat should be applied wet ensuring complete uniform coverage.
4. Allow the second coat to dry 60-90 minutes or until tacky but no transfer to the touch before application of third coat if desired or needed.
5. Apply a uniform wet third coat if necessary (some colors may require three coats to achieve acceptable hide i.e. certain reds, yellows and oranges).
6. Prior to the introduction of heat (force cure cycle) it is imperative that sufficient time is allowed for the solvents to evaporate. Unlike conventional polyurethane topcoats, high solids topcoats have relatively slow evaporating solvents. A minimum of one hour at 77°F is required to allow solvents to flash off. Additional time may be required for cooler temperatures, thicker films or high humidity conditions.
7. After allowing a minimum of one (1) hour "flash-off", slowly bring the heat up to a maximum of 140°F.
8. Markings and speed lines must be applied to the base polyurethane topcoat within 24 hours. If the topcoat has dried longer than the allotted time, abrade with a coarse ScotchBrite® pad or non-stearate 220 grit sandpaper to break the gloss prior to the application of markings and speed lines.
9. The Alumigrip® 4200 topcoat system will achieve water and Skydrol® resistance after curing for 24 and 72 hours respectively.
10. Rework.
  - a. Lightly Scotch-Brite® the surface requiring rework.
  - b. Solvent clean to remove sanding residue.
  - c. Spray a single uniform wet coat of the chosen corrosion prevention primer on the treated metal and fasteners.
  - d. Spot apply chromate conversion coating meeting the requirements of MIL-C-5541 and MIL-C-81706 to bare aluminum areas.
  - e. Spray a single uniform wet coat of the chosen corrosion prevention primer on the treated metal and fasteners.
  - f. On horizontal surfaces apply one wet uniform coat of the Alumigrip® 4200 Polyurethane.
  - g. On vertical surfaces apply two light wet uniform coats (refer to Steps 1-9).
  - h. To ensure the most optimized color match, induct the topcoat for 30 minutes prior to application when doing rework.



Note:

**Note:** If the rework procedure is for a relatively large area and exposed metal surfaces exist, refer to surface preparation instructions.



**Application**  
*Continued*

### 11. Spot-In repair

- a) Area around the spot-in or repair needs to be buffed with a medium to coarse compound to cut and clean the painted surface.
- b) Clean entire area with TR-19 or suitable grease and wax removal cleaner to remove any surface impurities.
- c) Use very fine grit sandpaper (1500 Grit) around the area to be spotted-in for help with blending and adhesion.
- d) When mixing the paint for blending, 5% more thinner may be added for better uniform finish and to help the material flow smoothly in higher temperatures.
- e) When performing a spot-in repair of metallic colors, the first step is to apply a coat of clear beyond the area of color so you are not blending the metallic color itself. Next, spray the metallic color until the desired look is achieved. Apply a coat of clear over the metallic to blend the clear and not the color. Repeat the same process if a second coat is required. If painting from seam to seam and the color appear to match, then all that is needed is to spray your color and apply the clear coat finish.

**Note:** If the rework procedure is for a relatively large area and exposed metal surfaces exist, refer to surface preparation.

### 12. Buffing

- a. Sand with P1500 grit 3M sandpaper until surface is clean and smooth.
- b. Apply 3M Perfect It III® Extra Cut Rubbing Compound #5940 with a white wool pad until surface is clean and shines.
- c. Apply 3M Perfect It III® Trizact Machine Glazing Compound #5930 with a fresh white wool pad, buff all areas within a 2 foot diameter to achieve total hide of repair area.



Cleaning of  
Equipment

TR-15, Solvent Cleaning C28/15 or Solvent Cleaning 98068 for electrostatic equipment and TR-19, Solvent Cleaning C28/15 or Solvent Cleaning 98068 for conventional spray equipment.



Dry times

Min. recoat time  
Max. recoat time

When dry to tape  
Alumigrip® 4200 is recoatable within 48 hrs. If a drying time of 48 hrs is exceeded, recondition with e.g. Scotch-Brite® type A very fine.

Alumigrip® 4200 can be recoatable within 7 days when reconditioned with sanding paper P400 and properly cleaned and degreased.

### Safety Precautions

Comply with all local safety, disposal and transportation regulations. Check the Material Safety Data Sheet (MSDS) and label of the individual products carefully before using the products. The MSDSs are available on request.

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