

Surface Preparation for Touchup

In the case of a repair and touchup, once the aircraft paint coating has been identified, the surface preparation follows some basic rules.

The first rule, as with the start of any paint project, is to wash and wipe down the area with a degreaser and silicone wax remover before starting to sand or abrade the area.

If a whole panel or section within a seam line can be refinished during a touchup, it eliminates having to match and blend the topcoat to an existing finish. The area of repair should be stripped to a seam line and the finish completely redone from wash primer to the topcoat, as applicable. The paint along the edge of the stripped area should be hand-sanded wet and feathered with a 320-grade paper.

For a spot repair that requires blending of the coating, an area about three times the area of the actual repair will need to be prepared for blending of the paint. If the damaged area is through the primer to the substrate, the repair area should be abraded with 320 aluminum oxide paper on a double-action (D/A) air sander. Then, the repair and the surrounding area should be wet sanded using the air sander fitted with 1500 wet paper. The area should then be wiped with a tack cloth prior to spraying.

Apply a crosscoat of epoxy primer to the bare metal area, following the material data sheet for drying and recoat times. Abrade the primer area lightly with 1500 wet or dry, and then abrade the unsanded area around the repair with cutting compound. Clean and wipe the area with a degreasing solvent, such as isopropyl alcohol, and then a tack cloth.

Mix the selected topcoat paint that is compatible for the repair. Apply two light coats over the sanded repair area, slightly extending the second coat beyond the first. Allow time for the first coat to flash before applying the second coat. Then, thin the topcoat by one-third to one-half with a compatible reducer and apply one more coat, extending beyond the first two coats. Allow to dry according to the material data sheet before buffing and polishing the blended area.

If the damage did not penetrate the primer, and only the topcoat is needed for the finish, complete the same steps that would follow a primer coat.

Paint touchup procedures generally are the same for almost any repair. The end result, however, is affected by numerous variables, which include the preparation, compatibility of the finishing materials, color match, selection of reducers and/or retarders based on temperature, and experience and expertise of the painter.

Stripping the Finish

The most experienced painter, the best finishing equipment, and newest coatings, do not produce the desired finish on an aircraft if the surface was not properly prepared prior to refinishing. Surface preparation for painting of an entire aircraft typically starts with the removal of the paint. This is done not only for the weight reduction that is gained by stripping the many gallons of topcoats and primers, but for the opportunity to inspect and repair corrosion or other defects uncovered by the removal of the paint.

Before any chemical stripping can be performed, all areas of the aircraft not being stripped must be protected. The

3–5 Minute Contact With Cotton Wad Saturated With Test Solvent									
Hitrate	Nitrate dope	Butyrate dope	Nitro-cellulose lacquer	Poly-tone Poly-brush Poly-spray	Synthetic enamel	Acrylic lacquer	Acrylic enamel	Urethane enamel	Epoxy paint
Methanol	S	IS	IS	IS	PS	IS	PS	IS	IS
Toluol (Toluene)	IS	IS	IS	S	IS	S	ISW	IS	IS
MEK (Methyl ethyl ketone)	S	S	S	S	ISW	S	ISW	IS	IS
Isopropanol	IS	IS	IS	IS	IS	S	IS	IS	IS
Methylene chloride	SS	VS	S	VS	ISW	S	ISW	ISW	ISW
IS – Insoluble ISW – Insoluble, film wrinkles PS – Penetrate film, slight softening without wrinkling					S – Soluble SS – Slightly Soluble VS – Very Soluble				

Figure 8-22. Chart for solvent testing of coating.