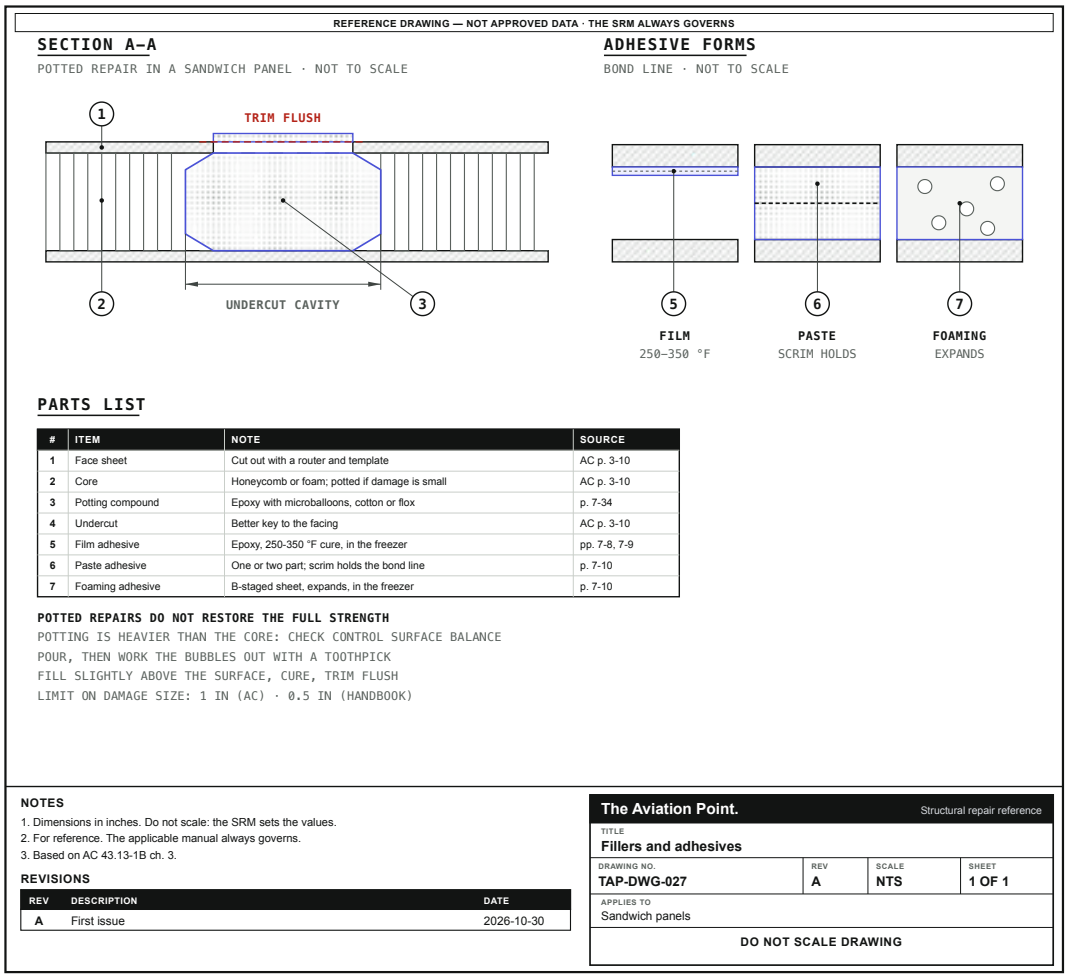
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Fillers and Adhesives: Potting, Film, Paste and Foaming

Fillers · potting a small cavity · film, paste and foaming adhesive



Potted repair, adhesive forms and parts list, after FAA-H-8083-31B pp. 7-8 to 7-10 and 7-34 and AC 43.13-1B pp. 3-9 to 3-11. Limits and quantities come from your SRM.

Fillers: what goes into the resin

Filler or putty	What the sources say	Where it is used
Microballoons (hollow glass, phenolic or plastic)	Lower the density of the resin and give more flexibility	Potting compound, resin fills for small core damage
Cotton, flox and similar	Named as potting-compound fillers; the handbook does not rate them	Potting, edge and cosmetic fills
Short glass fibres in room-temperature resin	A putty for damage no deeper than the first ply; peel ply over it before it sets	Surface damage in fibreglass laminate
Viscous epoxy, unfilled	Fills dents, scratches or fractures up to 1/4 in in aluminium facings; delaminated dents are repaired, not filled	Aluminium-faced sandwich

Adhesive forms compared

Form	Cure	Storage	Used for	Watch for
Film	Epoxy; 250 to 350 °F	Freezer	Bonding patches and skins; core plugs	Carrier (mat or woven cloth) controls flow and thickness; woven carriers can slightly lower environmental properties
Paste	One or two part epoxy; some cure at room temperature	Room temperature, long shelf life	Secondary bonding of patches; where film is hard to place	Bond line thickness is hard to control; scrim cloth keeps adhesive in the bond line
Foaming	B-staged epoxy sheet 0.025 to 0.10 in; 250 or 350 °F	Freezer, limited storage life	Splicing honeycomb; bonding repair plugs to the core	Expands during the cure

Key points

- **Potting compound** is epoxy filled with microballoons, cotton, flox or similar.
- **Potting limit:** under 0.5 in (handbook) or 1 in or less (AC 43.13-1B); SRM governs.

Step by step

1. Route out the face sheet with a template; undercut the core.
2. Use the potting adhesive the maker recommends; mix enough in one go.
3. Pour, fill every cell, work bubbles out with a toothpick.
4. Fill slightly above the surface.

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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- **Potted repairs** do not restore full strength and add weight: check control surface balance.
- **Microballoons** lower the density and add flexibility.
- **Film and foaming adhesive:** freezer. **Paste:** room temperature, long shelf life.
- **Film cure** is usually 250 or 350 °F.
- **Paste** bond lines are hard to control: use scrim cloth.

5. Cure as the maker says.
6. Trim flush; check balance on a control surface.

SOURCES · FAA-H-8083-31B, AMT Handbook — Airframe, Volume 1, Chapter 7 · AC 43.13-1B, Change 1, Chapter 3, Fiberglass and Plastics

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