

SynSkin® Handling Procedures

Loctite Aerospace

Tool Preparation

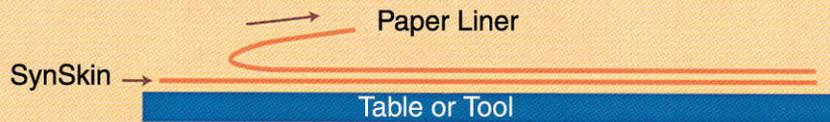
SynSkin works by translating smooth tool characteristics to composite part surfaces; thus, cured parts with SynSkin will only be as good as the tools used.

Tools should be free of resinous build-up. Loctite recommends removing build-up on tools by sanding with 400 grit sandpaper. Apply mold sealer (e.g., Frekote® B-15, available from Henkel Loctite) and Frekote release agent. Following the initial application of release agent, Loctite Aerospace recommends a tool bake before using. Let all tools equilibrate to room temperature before lay-up.

Applying SynSkin

SynSkin is a lightweight film product consisting of a thin resin layer supported by a nonwoven scrim. Paper serves as the release liner for the product. The best way to remove SynSkin from its release liner is to remove the paper liner from the SynSkin. Do not peel the SynSkin off the paper liner; it will tear.

Figure 1
Removing SynSkin from Liner



- 1) Place the SynSkin, dry side down, against table or tool as shown in Figure 1.
- 2) Stabilize the SynSkin by holding it down and peeling back the paper liner in a steady motion. This leaves the tacky side of the SynSkin facing up.
- 3) The piece is then flipped over and placed onto the tool, resin side facing the tool. It is important to remove the paper from the SynSkin, rather than the SynSkin from the paper.

A more efficient way to apply SynSkin (see Figure 2) is as follows:

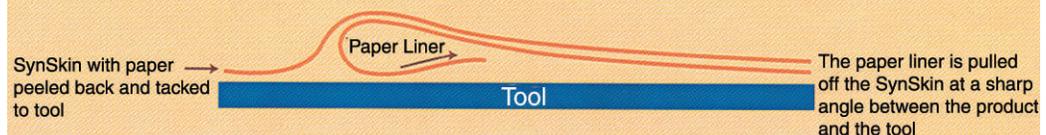
SynSkin, with release liner still attached, is laid onto the tool for lay-up. On one edge of the product, the paper liner is peeled back and the SynSkin is tacked onto the tool.

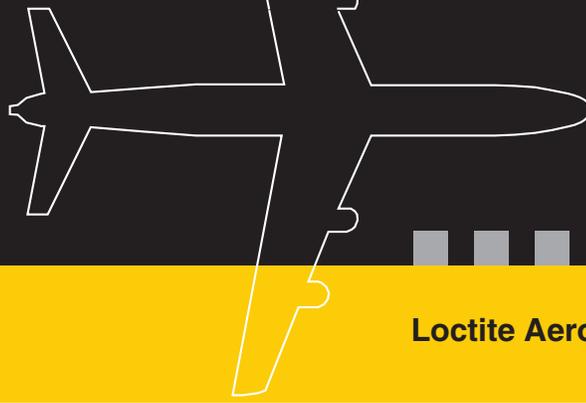
While restraining the tacked section, the paper liner is progressively peeled back between the SynSkin and the tool, and the SynSkin progressively tacked to the tool.

The key is to stabilize the SynSkin by holding it down and peeling the paper liner away in a relatively sharp angle.

Pleats around compound curves are often used when tight radii are encountered. Slight curves, however, do not require pleats, and the slight wrinkling of the product occurring on such curved areas is subsequently worked out through the debulk process and will not show in the final surface.

Figure 2
Applying SynSkin





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Debulking SynSkin onto Tool

It is important to remove the air between the tool and the SynSkin to optimize surface appearance. Loctite Aerospace recommends that a standard debulk process be used, and recommends the following:

Form a vacuum bag over the SynSkin. Use dry peel ply, perforated FEP or porous Armalon as the interleaf, and a surface breather between the SynSkin and the bag. The porous interleaf and breather should cover the SynSkin as much as possible to ensure that the SynSkin is evenly debulked. Evacuate

the bag to 22" Hg vacuum or greater for at least five minutes. This process serves to even out slight wrinkles and compact the SynSkin film to the tool.

Preventing Core Crush/Prepreg Movement

Prepreg movement is a response to cure pressure forces exerted against the part and can cause a range of imperfections in the cured part and surface. Core crush is caused by prepreg layers moving against a honeycomb core. When enough movement occurs, the core begins to squeeze and "crush" the cells. SynSkin is less resinous than

standard adhesive film surfacers. As such, it helps resist movement by "gripping" the tool, thereby stabilizing the prepreg plies. The plies farthest from the tool will see the least effect from the SynSkin, therefore Loctite Aerospace recommends incorporating standard processes that are normally used in part fabrication to restrict ply movement during cure. One way this is done is with glass tie-downs. Dry glass cloth strips are taped to the tool around the part edge and inserted 1/2 inch into the trim area of the part between the plies of prepreg surrounding the core.

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Users should reserve the Material Safety Data Sheet (MSDS) and product label for the material to determine possible health hazards, appropriate engineering controls and precautions to be observed in using the material. Copies of the MSDS and label are available upon request.

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