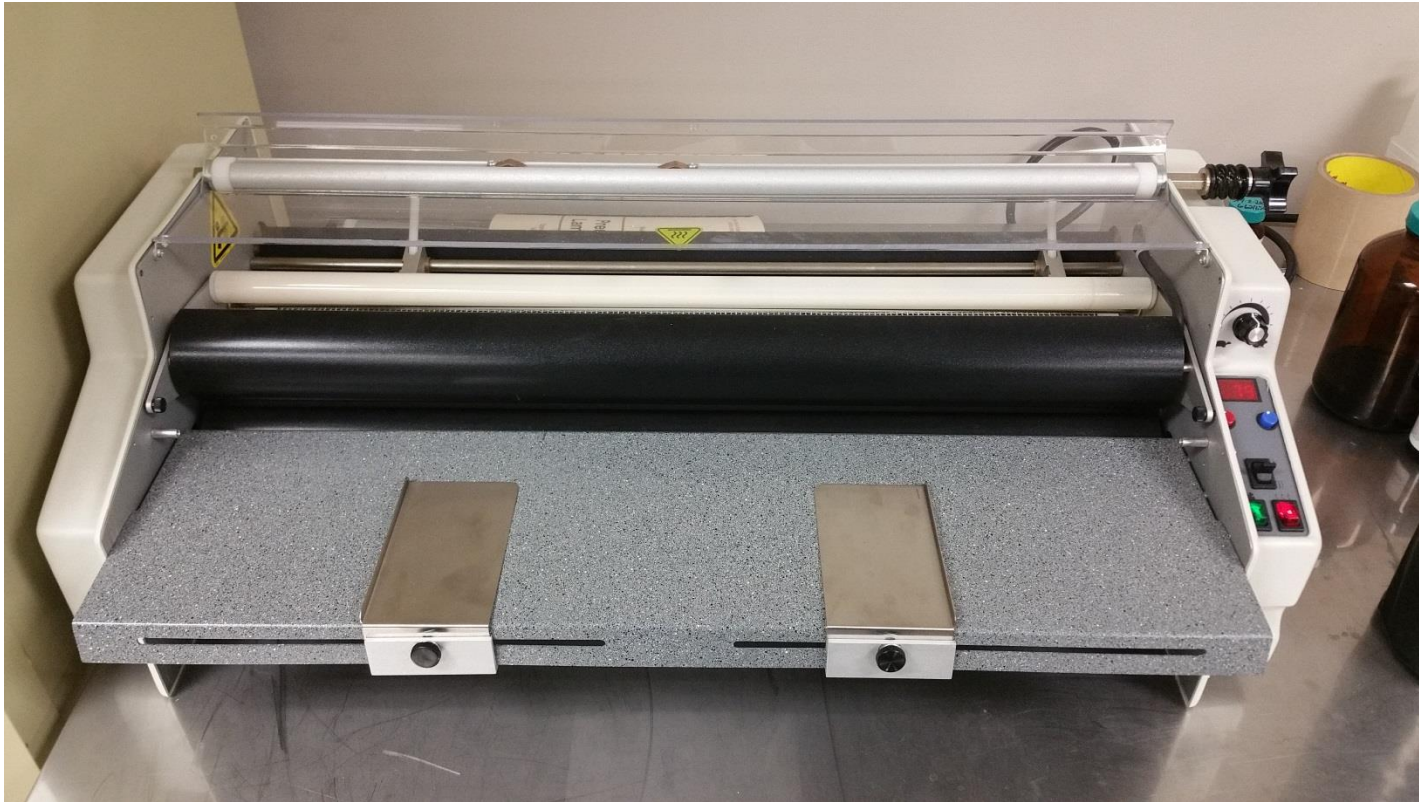


EMS Dry Film Lamination Guide

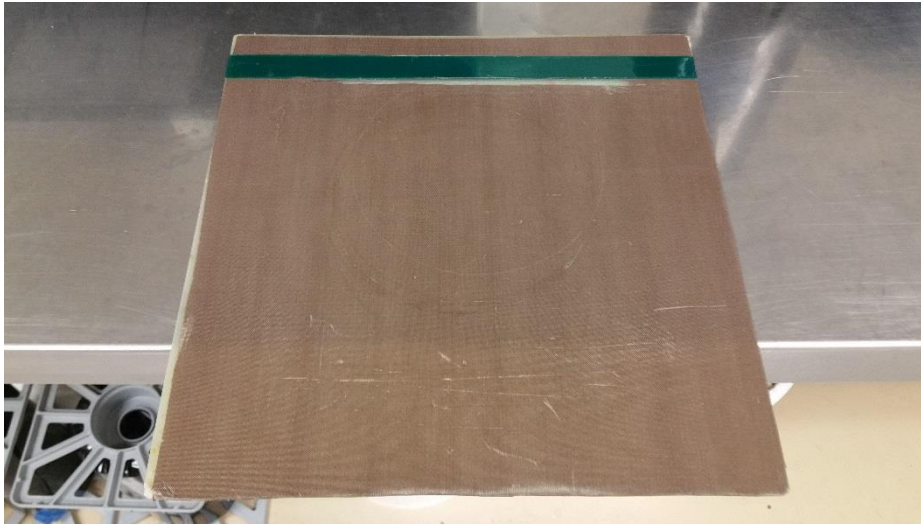
Engineered Materials Systems, Inc.



Dry film laminator – Set to 120°C. Lower temperatures are an option. Ensure substrate reaches $\geq 45^{\circ}\text{C}$.

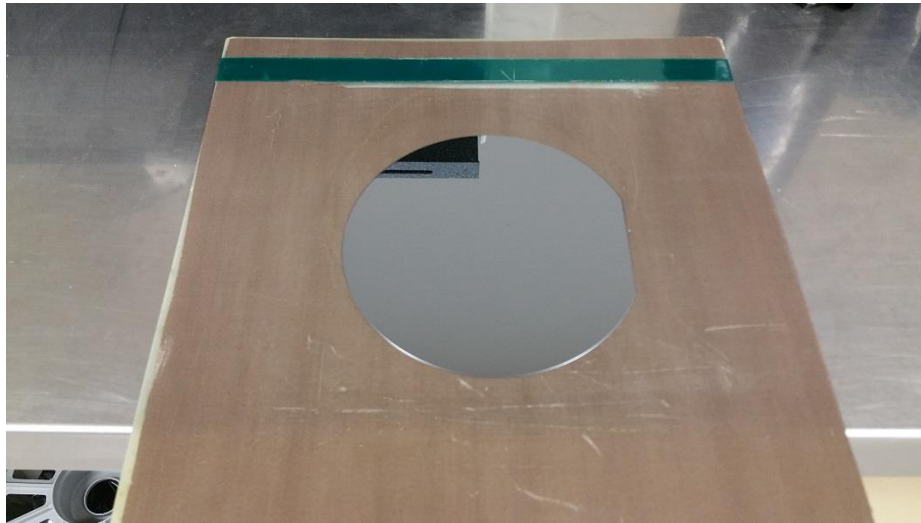
Slower speed may help in adhesion to wafer during lamination.

If tenting dry film, slower lamination may push material into open features. The durometer of the rolls will have an impact as well.



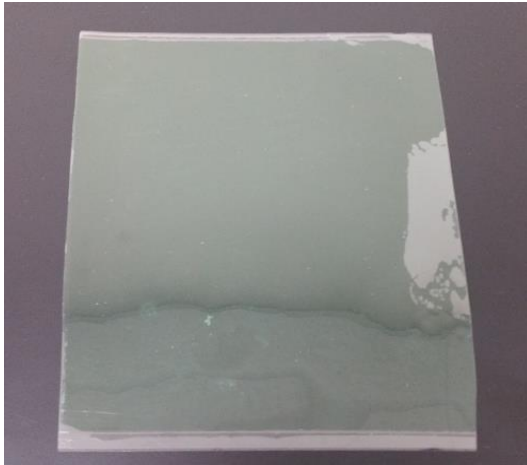
Teflon lined lamination board.

Teflon prevents dry film from sticking during lamination process.

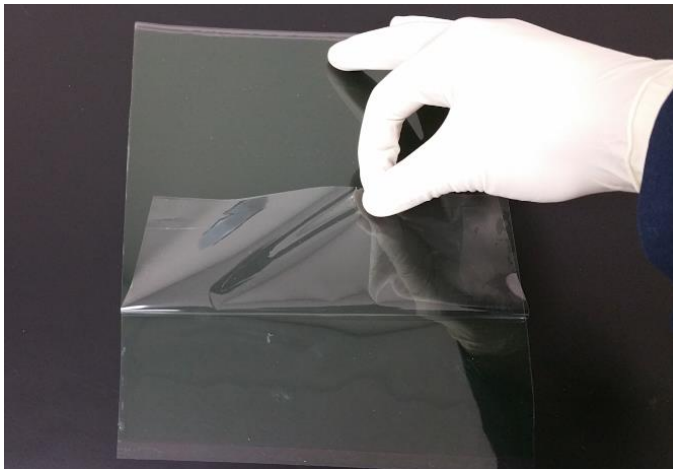


Blank silicon wafer on lamination board, prior to laminating with dry film.

Dry Film Preparation

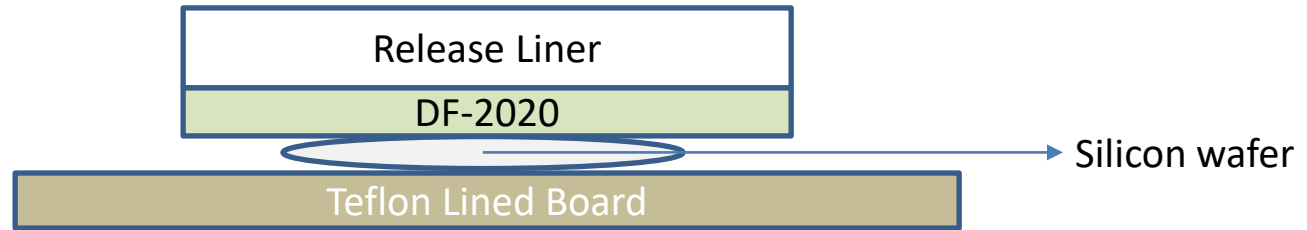


EMS DF-2020 used to show dry film preparation.

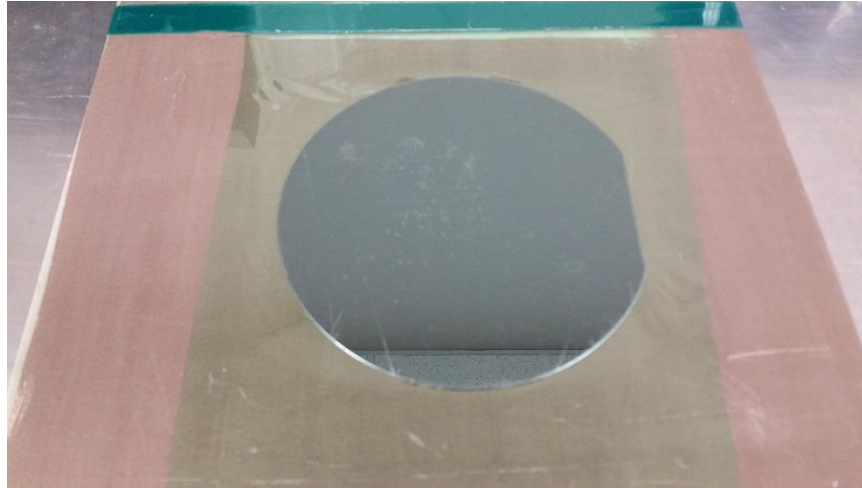


Inner leaf being peeled back from DF-2020.

Peel inner leaf back at $>90^\circ\text{C}$ angle, the closer to 180°C angle is preferred.

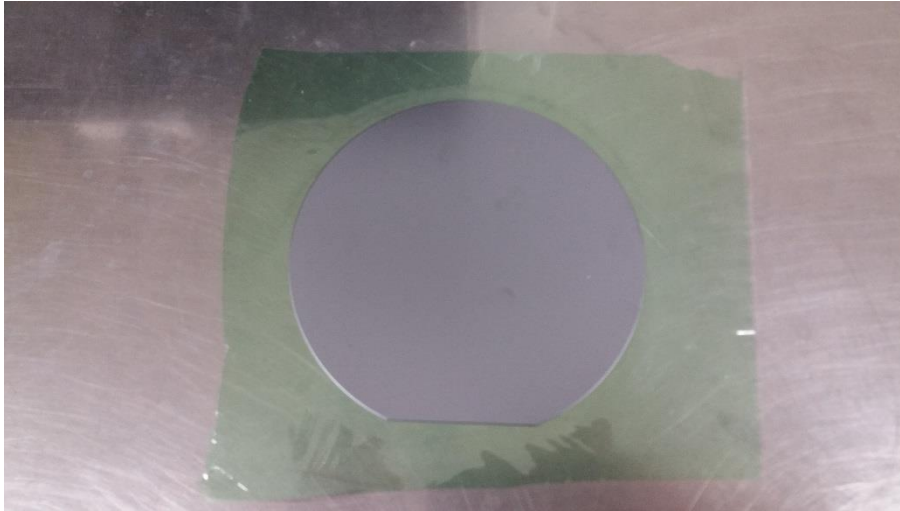


Hold release liner tight during lamination to limit any air entrapment.



Laminated wafer with release liner
still in place.

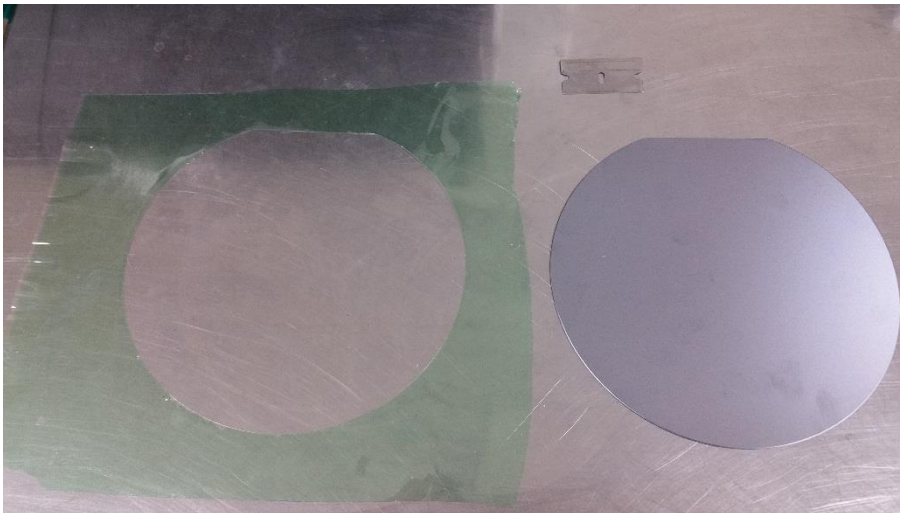
Allow the wafer and resist to cool to
<25°C to aid in separation of release
liner from resist.



Turn laminated wafer upside down.

Using an utility knife or razor blade, cut release liner away from wafer.

Cut as close to the wafer as possible.



Remove release liner by carefully peeling back edge of wafer and pulling at as close to 180° angle as possible.

Use a razor blade to separate release liner from resist if necessary.



Left image: Wafer successfully laminated with DF-2020

Right image: Release liner peeled off of laminated wafer.*

**EMS Dry Films are designed to be UV exposed without the release liner in place. UV exposure through the release liner will result in reduced resolution.*

Video of lamination process available upon request.