FLAT PANEL INFUSION DEMONSTRATION

DESCRIPTION

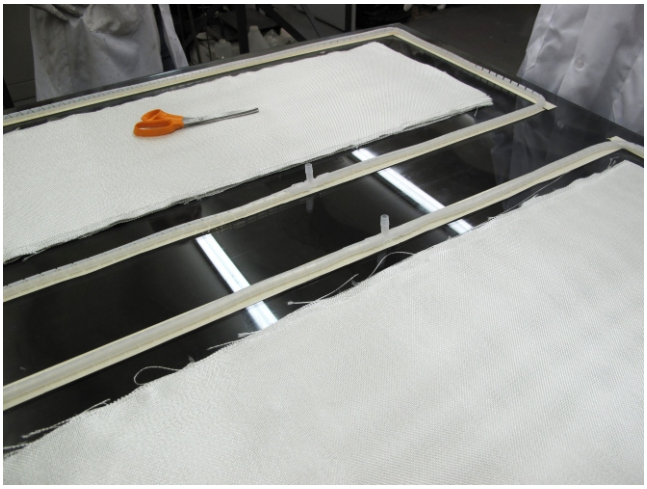
This flat panel infusion demonstration illustrates the use of two different flow media's, of which there are several. Additionally, there are numerous core and accessory materials to choose from.

Before you start, it is advisable to bag the mold and ensure there are no leaks. The mold surface would then be ready to apply a release agent.

PROCEDURE

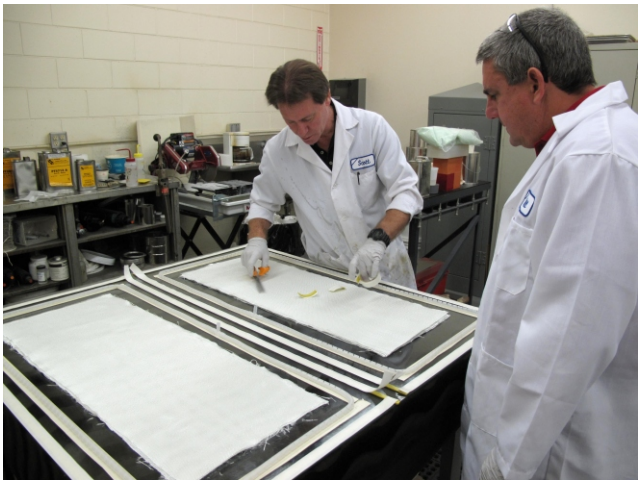
Lay down all the dry woven cloth. This is done the same way a wet lay-up is accomplished; ensuring heavy fabric is butted, not overlapped and tight in radiuses. Use adhesive spray or double-sided fiber tape to hold in place.

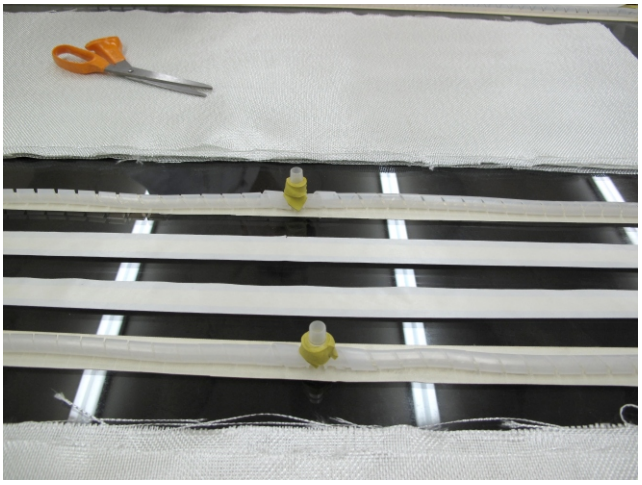
Apply the solid, double-sided tape approximately 2" outside the edge of the cloth and adhere the spiral-wrap vacuum line to it.



Install the vacuum fittings or "tees."

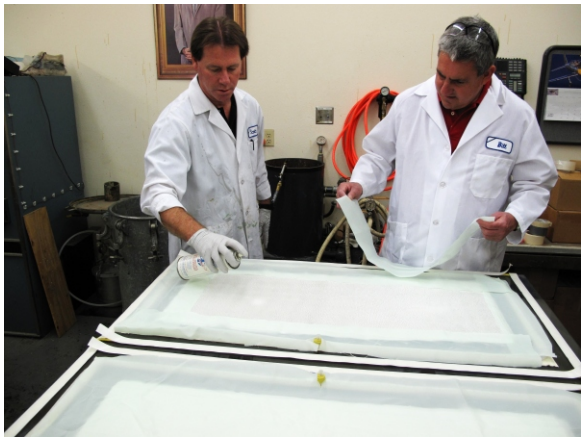
Lay down the sealant tape approximately 1”-2” outside of vacuum line.



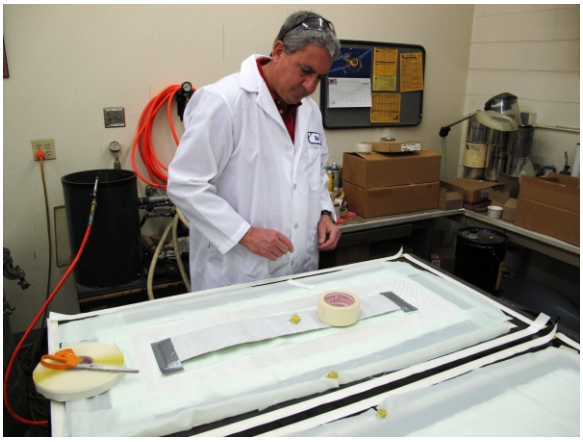


Cut small pieces of sealant tape to install on neck of vacuum tees, for sealing “inside” the vacuum bag.

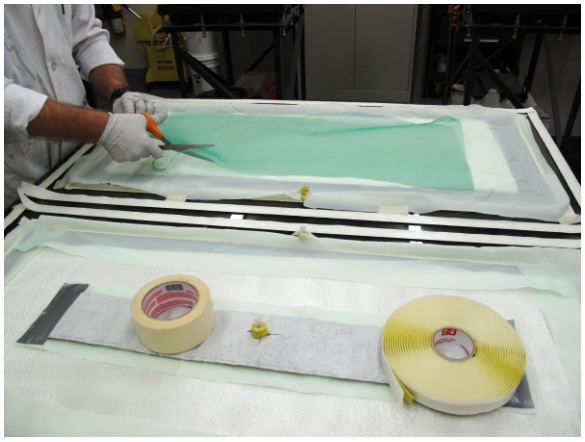
Lay down the peel-ply. It should cover the entire laminate and extend all the way out and over the vacuum line. Use tape around perimeter to secure peel-ply from moving. Make sure you allow “slack” in the peel-ply to avoid bridging when the vacuum is applied. **NOTE:** It is very important that the mold surface between the laminate and vacuum line is covered with peel-ply or breather, to avoid “pinching off” the vacuum from the laminate to be filled. Once bag is sucked down, if pinching off occurs, resin will not flow properly



Installing the flow media. This type is EnkaFusion made by Colbond. A tee is inserted in the flow media by slitting the fabric, to facilitate the inflow of the resin. Again, sealant tape is wrapped around neck of tee. Use duct or flash tape to secure flow media from moving.

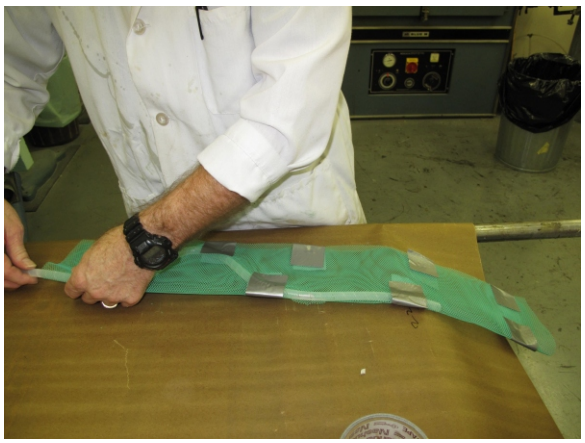


When using the EnkaFusion flow media, peel ply is only necessary underneath the flow media and again between the part and vacuum line. Use adhesive spray to secure peel-ply in place.

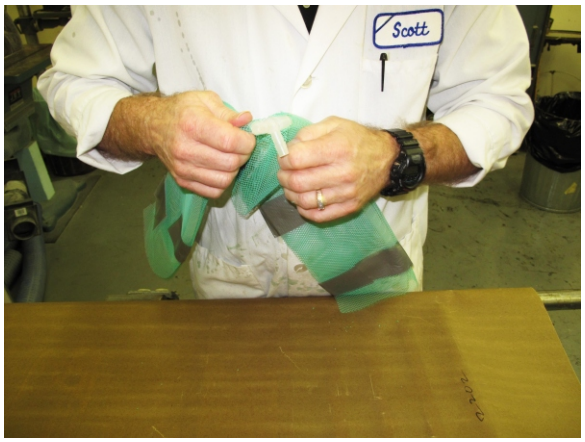


When using the mesh type flow media (made by several manufacturers), cut it 1”- 2” inside the perimeter of your cloth. Secure with tape in spots around the perimeter.

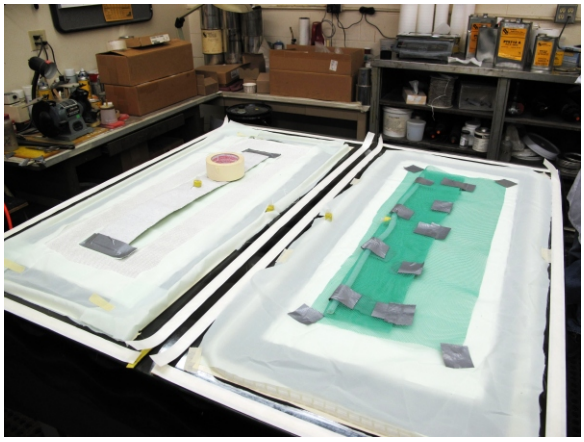
Fabricating an internal feed line (optional), using the mesh flow media. **NOTE:** There are other materials and/or options for this. The length of the mesh should extend out to approximately 1" inside the edge of the flow media on the peel-ply. Staples were used here to secure the folded mesh and covered with duct tape to prevent possible puncturing of the bag.



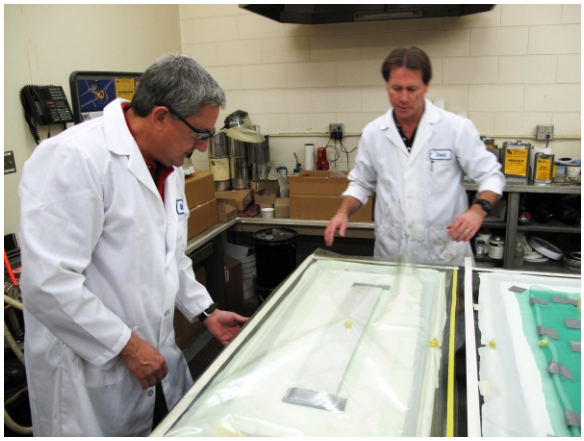
Insert the spiral wrap resin "in" line.



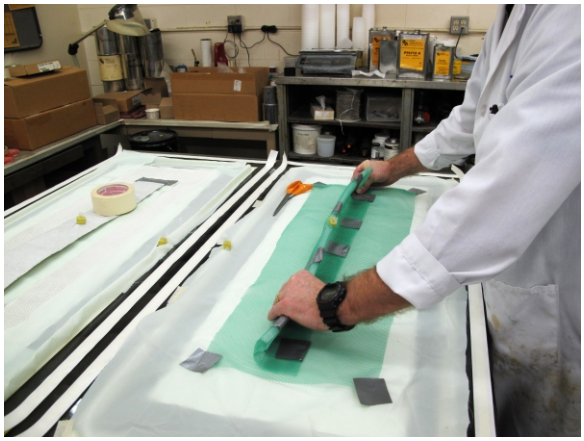
Insert the tee, centered in the spiral wrap.

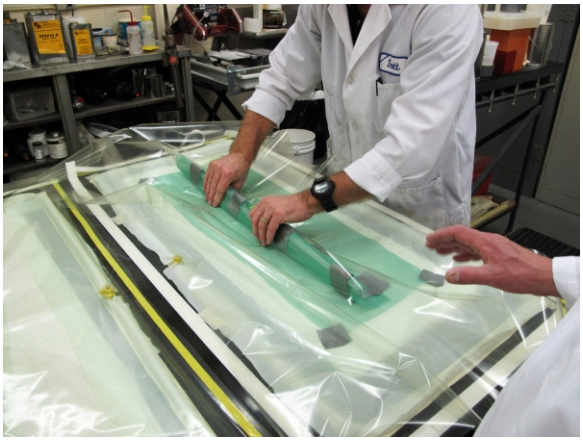


The fabricated unit is secured in place on top of the flow media with tape. It should be positioned so that when you bend it into an "L" it will be centered on the laminate.

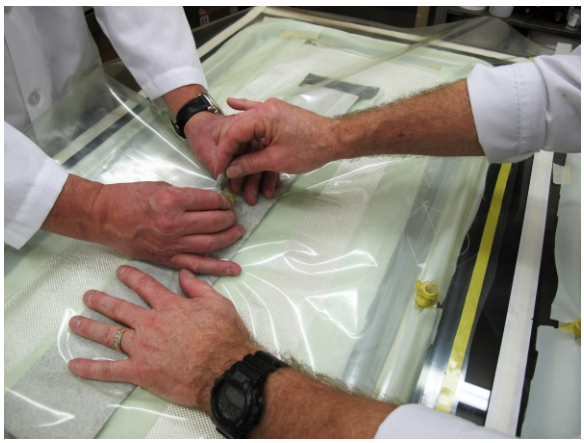


Install the vacuum bag. Always make sure to have plenty, to avoid any bridging and allowance for pleats.

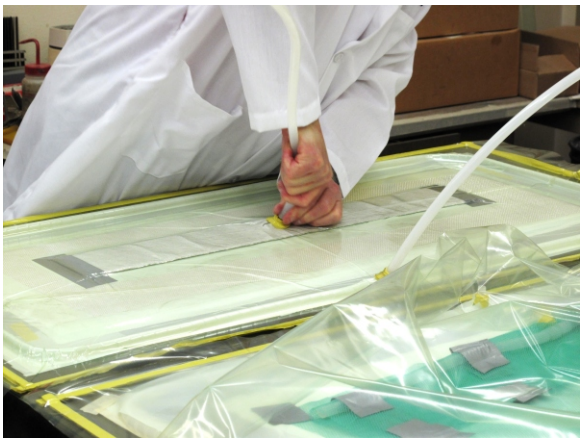




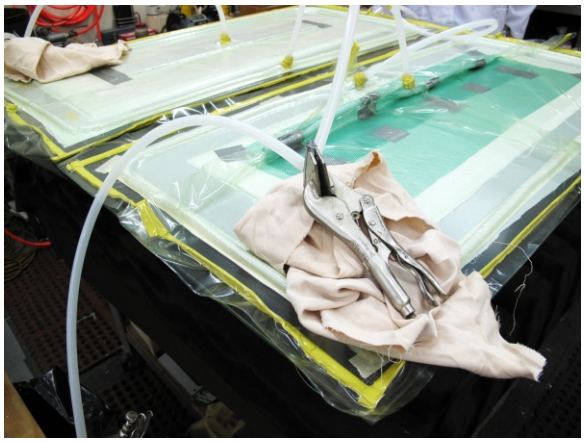
When utilizing the mesh flow media for the internal flow line, place the assembly "in the pleat" of the bag so it will remain elevated off the back of the laminate. Otherwise it will create an impression in the laminate.



Carefully pierce the bag at the tee with a sharp blade and stretch the bag over the tee and seal against the sealant tape. **NOTE:** Once bag is sealed against the tee, be careful not to move the bag otherwise everything under the bag will move with it.



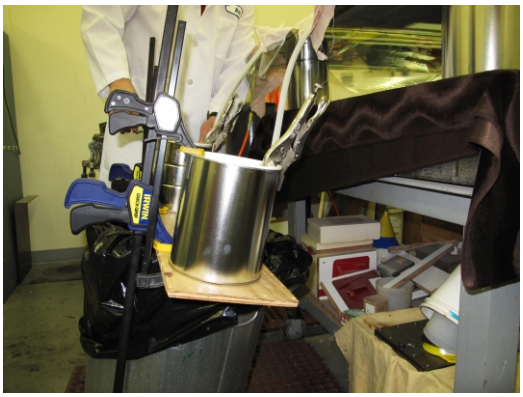
Attach polyethylene tube to vacuum and fill line tee's. Both will need to be clamped off prior to turning on vacuum.



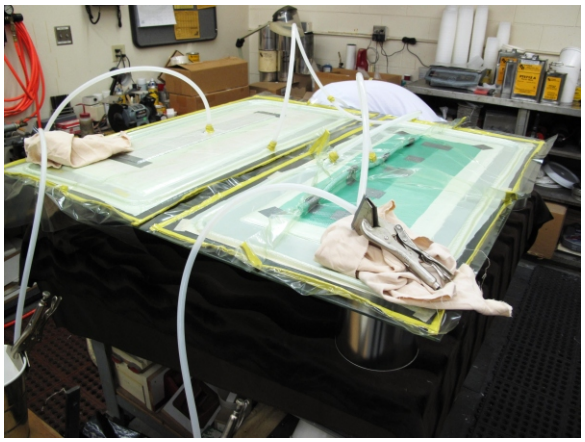
Use duck-billed vise grips for clamping. It is best to fold the resin inline tube in half before clamping, for a better seal.

Set up and secure resin reservoir.

To prevent pinching off, cut the end of the polyethylene tubing at a 45° angle and secure in the bottom of the reservoir container.



It's best to tilt the reservoir toward the laminate to maximize the resin usage.



Turn on vacuum, check for leaks and bridging. If bridging occurs, back off vacuum and make necessary adjustments.

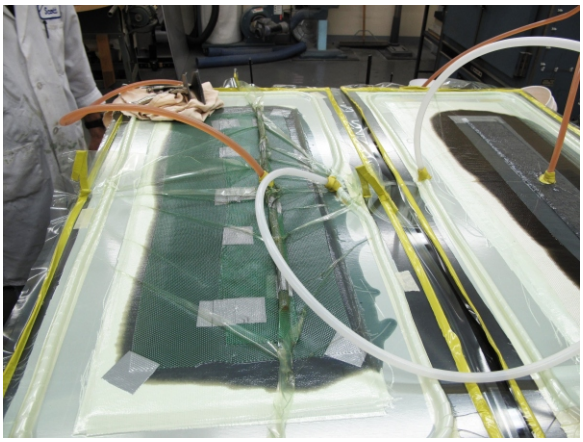
Check vacuum gauge on trap (pressure pot). With vacuum line closed off, vacuum gauge should not drop for 5 minutes.

Select a high quality resin – PTM&W of course!

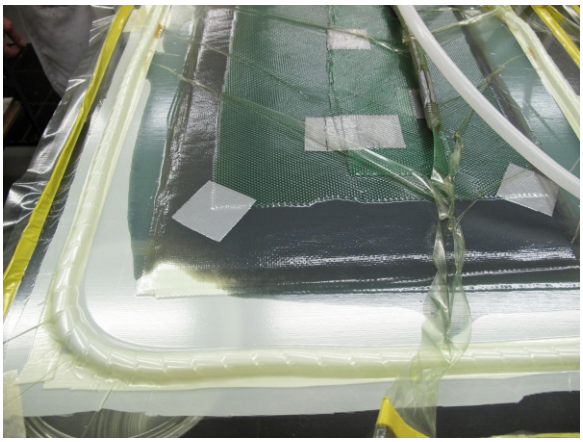
Weigh and mix resin.

Degassing is optional but recommended if possible.

Dump mixed resin into reservoir.



Remove clamps and begin flow of resin.



Clamp fill line when infusion is complete.

Leave vacuum pump running until resin has gelled.

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