



Automotive & Composite Applications

FRP

FRP Description

Paper Honeycomb, as manufactured by Tricel, has been used in various FRP products since 1961. Its greatest success has been in recreational vehicles and practically all RVs of FRP construction use Tricel Honeycomb as a reinforcement. Not only is it economical, it is more efficient and easier to bond to than closed cell products such as foam, and Tricel Honeycomb is substantially stronger.

Whatever your FRP end product, may it be: marine, RV, storage tanks, shower and tubs, or custom products; the use of Tricel Honeycomb can probably save you material costs. Take a moment to study the Strength and Stiffness graphs, which illustrate honeycomb's ability to greatly improve strength while saving on glass and resin, then contact us for FREE samples to test in your product!



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FRP Technical Bulletin

The mating of FRP and honeycomb makes for a “perfect marriage” because each product enhances the properties of the other. Honeycomb, when properly applied during the lamination process can increase the beam strength of plain FRP by as much as TEN times, or can save considerable glass and resin over solid FRP and still increase beam strength.

The use of honeycomb and FRP is simple. Just follow a few basic procedures:

1. After the “skin coat” has begun its cure (downside of the exotherm), apply a “bed coat” of chop (1½ – 2 ounces). It is not necessary to roll out this bed coat. Over-saturate the bed coat slightly, as this will allow the honeycomb to absorb sufficient resin to promote proper bonding to the laminate. NOTE: Some fabricators who turn their molds up to 3 times per day do not wait for the downside of the exotherm. This can produce “telegraphing” or “print through” of the honeycomb, especially if they are using a very fast cure cycle time. This is something that each fabricator has to make adjustments for, given their own particular circumstances.
2. Lay the honeycomb on the wetted out “bed coat”. Next, wet out the top surface of the honeycomb with a fine mist of resin only. The idea here is to wet out the honeycomb slightly so when the next layer of glass (cover coat) is applied, the honeycomb will not absorb the resin out of this layer, which would cause a dry laminate and eventual delamination.
3. Apply the “cover coat”. Do not over chop this layer. No more than 3-4 ounces of chop should be applied in this step. Using standard length (1” to 1½”) glass fibers you will not fill the honeycomb cells, but the glass will flatten out on top of the honeycomb as soon as it contacts the surface. We recommend that the cover coat be thin enough so that slight “pin holes” can form in the surface. These pinholes will allow any styrene from the bed coat to gas off thereby not being trapped within the laminate, which will cause problems once the part is put out in the sunlight.
4. Roll the “cover coat” using light pressure on the roller. If the glass sticks to the roller, the glass is probably too dry, so apply an additional light mist of resin. Roll all styrene bubbles to the edge, not to the center. Always roll to the edges. The roller should be used as a “rake” at the edges of the honeycomb, drawing the glass fibers towards the edge away from the center of the lamination. This will allow an experienced roller to form a “fillet” at the edge of the honeycomb.

We have many years of experience in the FRP industry. If you or your lamination personnel have any questions, please contact our office and we will try to be of assistance in helping with any problems.