

Don't Go with The Flow...Manage It!

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Hardtops and many smaller parts have become considerably more sophisticated in the last decade. Two part molds opened the door for incorporating a host of creative ideas to make the resulting products more stylish and functional. But this trend certainly hasn't made these parts easier to produce.

One of the main complicating factors is that the resin is moving in a closed mold, making it more difficult than open molding to troubleshoot flow problems where materials move in unwanted directions. The key to resolving these situations is to be able to manage the path that the fluid material takes.

The **J-Core product line** consists of three different ultra-light weight products (5 lbs/gal), **4501, 4501HV and 4501XHV**. They all are less than five pounds per gallon and all are promoted the same way. The difference between the products is their viscosity. Figure 1 compares the specification of the upper and lower viscosity limits of the three products. These viscosity differences provide a "tool" to manage the flow.

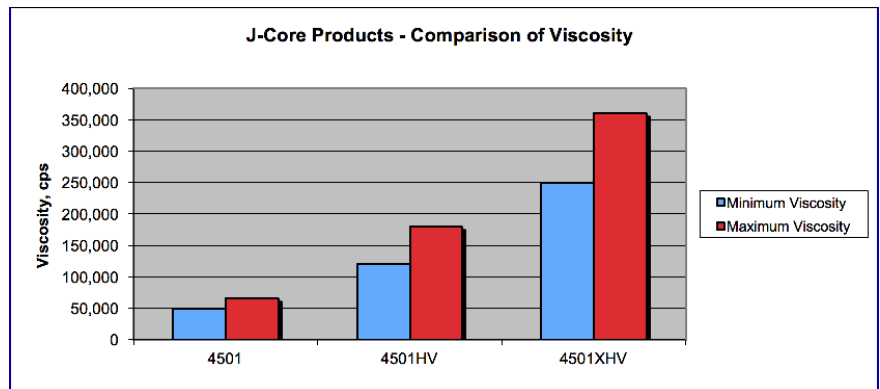


figure 1

Before giving specific examples of how our customers have managed flow, it may help to put the viscosity numbers of Figure 1 in more understandable terms. **4501 has the viscosity of a thinner milkshake.** If it is poured on a mild incline (say, 30°), it would flow slowly to the bottom. This may create a problem on the incline area as far as creating a hollow spot. **4501HV, however, is more like a very thick milkshake** and would hold on the incline although it may need to be spread with a smooth trowel on the flat surface to "knit" together. **4501XHV has more of a putty-like texture** even though the viscosity of about 300,000 cps would suggest otherwise. This is a result of its light weight (5 lbs/gal), but it acts more like putties with viscosities over 1,000,000 cps.

That said, just how have our customers used these products to manage flow?

- When a new model featured a hardtop with a cambered perimeter to increase the shaded area of the boat, 4501 would not hold on the inclined edge, so they used the higher viscosity 4502HV for the application and it solved the problem.
- Another customer was producing an "L" shaped cover for a galley cabinet. The challenge was to semi-seal the perimeter flange so the J-Core material wouldn't leak out causing void areas. They used 4502XHV along the flange and it minimized the squeeze out.
- The original idea for 4501XHV came from a customer that wanted to avoid the lower viscosity

J-Core product filling the recess intended for electronic equipment. The XHV material was placed in a ring around the recess and acted as a dam. Damned if it didn't work just great! These are just a few of the ways the viscosity differences of the J-Core products have been used to manage flow and create void free, cosmetically perfect parts. Do you have a problem that the J-Core line could solve?