TechTip G6– Determining Lift Thickness for ccSPF

Most suppliers recommend a maximum lift thickness of their closed cell SPF. But those recommendations are based on laboratory conditions that may be different than field conditions. Factors such as substrate temperature, material temperature, pressure, spray gun configuration can affect the maximum lift thickness of the foam.

A sure way to determine the maximum lift thickness of a closed cell foam is to do your own test. Before using the closed cell foam, spray some samples onto a board or cardboard at different lift thickness, starting at 1 inch and then continuing up to the manufacture's maximum recommended lift thickness. Using a digital meat thermometer, measure the maximum interior temperature at the mid-thickness of the foam during cure and the time it takes to reach maximum temperature before the temperature starts to drop. If the maximum foam temperature is 200^0F or under, it should be fine. *(Somewhere between 200^0 and 220^0F is the maximum temperature for most foams before they exhibit excessive exothermic heat (blowholes, soft foam in the middle, discoloration, odor and poor dimensional stability).* When the temperature of the foam begins to drop, then more foam can be installed over the first lift.

After the samples have cured and set, use a coring tool or saw to cut specimens from each sample. Check out the cell structure, look for elongated cells, blowholes, soft foam in the middle of the lift. This could indicate that the foam experienced excessive exothermic temperature during the cure and the lifts are too thick

Let the samples sit overnight at room temperature and check them the next day. Observe the shape of the sample to see if it shrinks into an hourglass figure. If so, then the lifts are too thick and adjust accordingly.

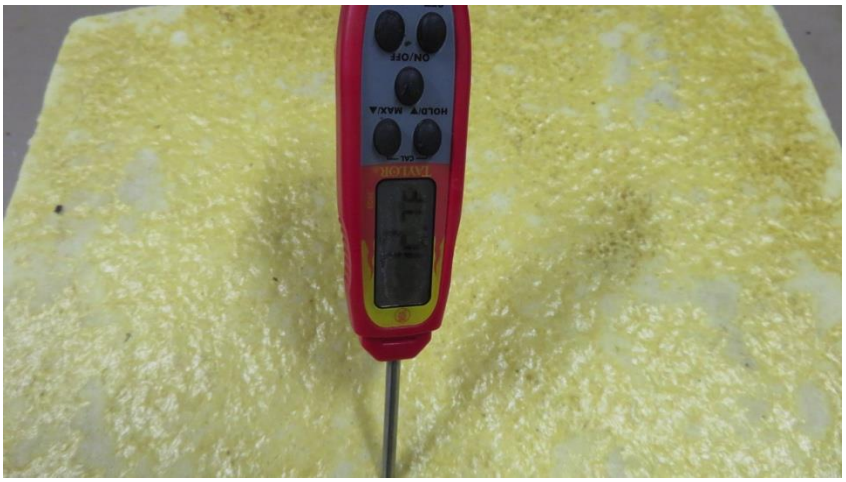


Figure G6-1 - Using a meat thermometer take the temperature of the curing foam. 200^0 F or under is typically OK. Over 220^0 F is typically where the foam could exhibit signs of excessive exothermic heat.

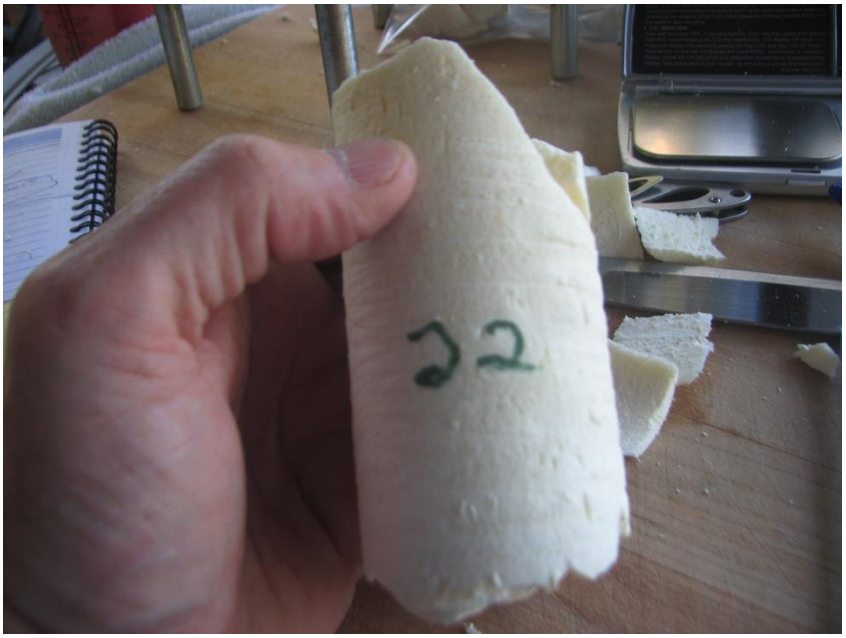


Figure G6-2: Core samples of the foam can verify quality foam. Check for good cell structure, compressive strength and dimensional stability.

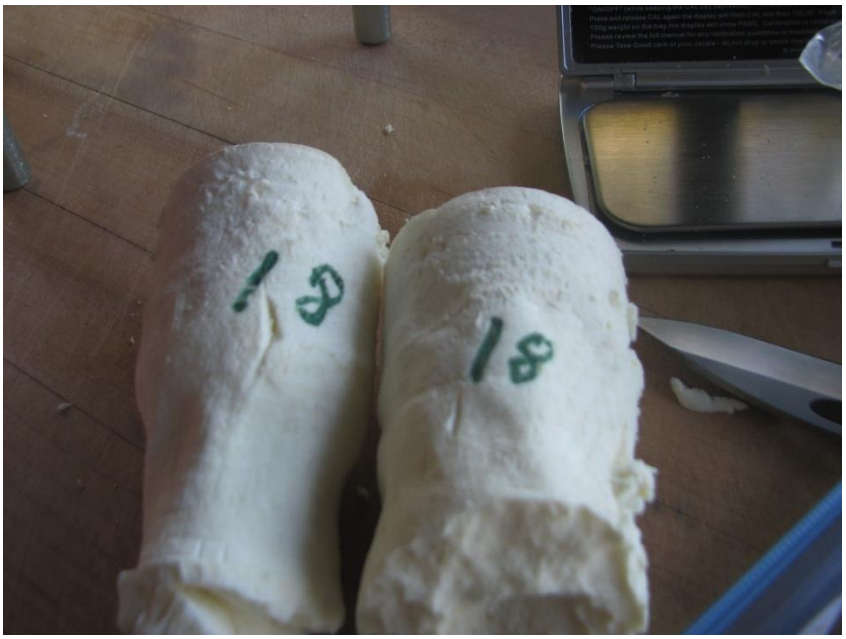
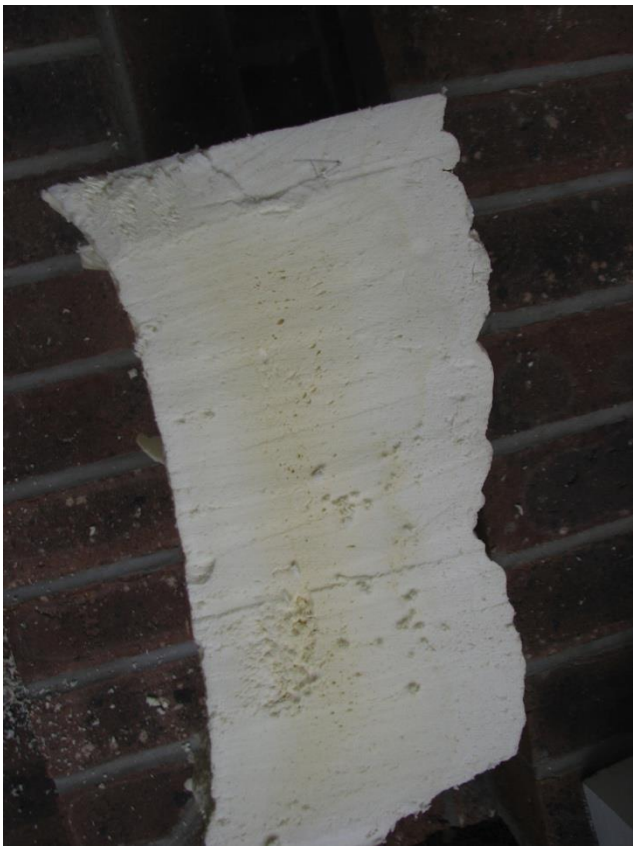


Figure G6-3: If the samples contract overnight, then the lifts were too thick.



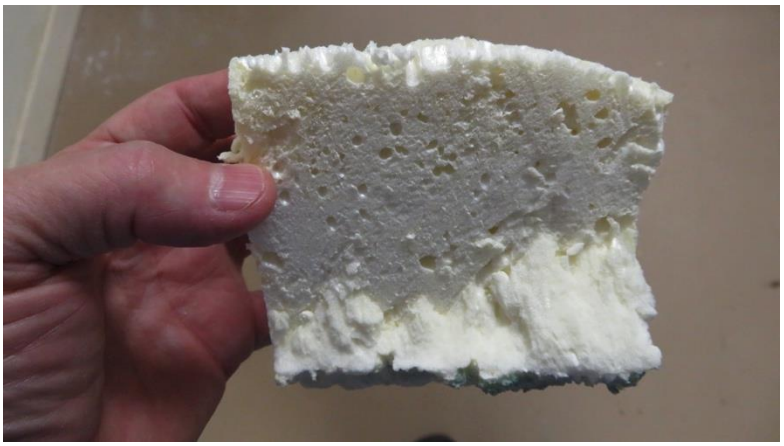


Figure G6-4: Darker color & soft foam in the center, blowholes and strong odor indicates excessive exothermic heat.

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