

...of core materials with microspheres

Microspheres are thermoplastic, gas-filled microballons. Their shell may change its shape when exposed to temperature and pressure. During the production of FRP parts this may only happen while resin is not cured yet.

With regard to temperature and chemical resistance of our core materials, three different types of microspheres have to be considered:

product	Temperature resistance in liquid phase	
	1-30 minutes	short-term (< 1 minute)
1) standard type (e.g. Sphere.core)	max. 80°C	max. 100°C
2) medium resistance (e.g. Sphere.tex)	max. 100°C	max. 120°C
3) higher resistance (e.g. HT materials)	max. 120°C	max. 140°C

After the curing process has started and microspheres are completely surrounded by cured resin, the temperature may be increased. The temperature resistance of the laminate now depends on the heat resistance of the resin. This means, for example, that cured laminates made with epoxy resin can be tempered in autoclaves at more than 200 °C without affecting the laminate quality.

Microspheres are generally resistant to chemicals. There are only a few chemicals and solvents to which they are not resistant. Please note that the standard microspheres (1) are less resistant to chemicals than those types used for Sphere.tex and HT materials (2 and 3). When microspheres are completely surrounded by resin, chemical resistance only has to be considered at the exposed edges.



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