

عنوان مقاله:

ROOM TEMPERATURE STUDY OF A LOW PROFILED UNSATURATED POLYESTER RESIN

محل انتشار:

دومین کنفرانس بین المللی کامپوزیت (سال: 1389)

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خلاصه مقاله:

The unsaturated polyester (UP) resins have the most consumption of thermoset resins in the composite industry. Curing of UP resin with styrene monomer namely cross-linking, leads to 5-10% volume shrinkage which may cause problems in the surface quality and dimensional control of produced part. One effective way for the reduction or elimination of volume shrinkage occurred during curing is adding a thermoplastic polymer called low profile additive (LPA) to the resin system. In this paper, the effect of six LPAs, three types of polyvinyl acetate (PVAc) with trade names C501, UW4 and B100, Polyvinyl toluene (PVT), Polyethyl methacrylate (PEMA) and polystyrene (PS) on the volume shrinkage control, surface roughness, viscosity, morphology and cure kinetics have been studied. Results showed that different types of PVAc have more compatibility with UP resin. Control of volume shrinkage in PEMA in comparison with other LPAs was better. Co-continuous morphology was not observed in any of UP/LPA mixtures. Therefore, it is not expected to be an excellent volume shrinkage control by inclusion used LPAs.

کلمات کلیدی:

unsaturated polyester, low profile additive, volume shrinkage, kinetics

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