

Sifat mekanik komposit woven S-2 glass berbasis epoxy CY 219 = Mechanical properties of woven S-2 glass reinforced epoxy CY 219 composites

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Abstrak

Sifat mekanik, yaitu kekuatan tarik dan kekuatan tekan dari komposit epoxy CY 219 dengan penguat woven S-2 glass (pola twill) diselidiki melalui uji tarik dan uji tekan. Spesimen dibuat melalui metode hand lay-up dan vacuum bagging. Proses curing epoxy memerlukan waktu 7 hari dan dilakukan di temperatur ruangan dan tekanan atmosfer. Setelah cured, spesimen dipotong dengan menggunakan diamond cutter berdasarkan bentuk yang direkomendasikan ASTM D3039 dan ASTM D3410 dalam arah serat 0/90 dan +/- 45. Selain pengujian mekanik, mode of failure komposit juga diamati dengan menggunakan scanning electron microscope. Secara keseluruhan disimpulkan bahwa kekuatan tarik komposit epoxy CY 219/ S-2 glass lebih besar daripada kekuatannya.

Tensile and compressive strength of woven S-2 glass (twill weaved) reinforced epoxy CY 219 is investigated through tensile and compressive test. Specimens are made with hand lay-up and vacuum bagging method. The curing process took 7 days and was done under atmospheric pressure and ambient temperature. After cured, specimens are cut by using diamond cutter based on ASTM D3039 and ASTM D3410 recommended shape in 0/90 and +/-45 fiber orientation. Besides mechanical testing, modes of failure of failed composites also observed with scanning electron microscope (SEM). This research concluded that generally, tensile strength of epoxy CY 219/ S-2 glass composites is better than its compressive strength.