The Evaluation of Remaining Stress Distribution of Sun Guard Film Due to The Termal Influence Using Photoelasticity Method

Nama Mahasiswa : EVIRICHA VIRGAWATI
NRP : 1104 100 034
Departement : Fisika FMIPA-ITS
Advisor : Drs. Agoes Soetijono, M.T
Dr. Ir. Agus Sigit Pramono DEA

Abstract
Photoelasticity analisis has been conducted to evaluate the distribution of remaining stress on sun guard film caused by termal influence. Heat treatment on sun guard can affect its structural changes, therefore sun guard will experience the distribution of remaining stress changes. The observed variables are the sun guard and temperature variation. The material used are three different type of sun guard, which are: 40%, 60% and 80% and the material will be given heat treatment of 40°C, 60°C and 80°C. Sun guard film has a fringe value of 130770 N/m. From the experiment we obtain isocromatic fringe pattern to determine the fringe order of the material on some coordinates that is used to evaluate the distribution of remaining stress ranging from 0 - 525,99.10^7 N/m^2. The remaining stress of 80% sun guard film disappear faster than the 40% and 60%, this result shows that 80% sun guard film has a better quality than the other types. The greater the sun guard percentage, the better it’s ability to absorb heat.

Key words: sun guard, distribution of remaining stress