## Effect of Springback Analysis on Influences of the Steel Demoulding Using FEM

Authors : Byeong-Sam Kim, Jongmin Park

**Abstract :** The present work is motivated by the industrial challenge to produce complex composite shapes cost-effectively. The model used an anisotropical thermoviscoelastic is analyzed by an implemented finite element solver. The stress relaxation can be constructed by Prony series for the nonlinear thermoviscoelastic model. The calculation of process induced internal stresses relaxation during the cooling stage of the manufacturing cycle was carried out by the spring back phenomena observed from the part containing a cylindrical segment. The finite element results obtained from the present formulation are compared with experimental data, and the results show good correlations.

**Keywords :** thermoviscoelastic, springback phenomena, FEM analysis, thermoplastic composite structures **Conference Title :** ICFMTE 2015 : International Conference on Fluid Mechanics and Thermal Engineering

**Conference Location :** Paris, France

Conference Dates : September 21-22, 2015