Abstract

The steady state creep behaviour of a functionally graded cylinder made of isotropic composite containing varying distribution of silicon carbide particles has been investigated by a mathematical model. The creep behaviour of the FGM is described by a Norton's Power law. The effect of varying distribution of SiCP particles of creep stresses and creep rates in the FGM cylinder has been analyzed and compared with a cylinder, having uniform distribution of
reinforcement. The study reveals that the increasing particle content in the cylinder, tangential and effective stresses increase near the inner radius but decrease near the outer radius. The strain rates in FGM cylinder decreases with the increase in SiCP reinforcement. The magnitudes of tangential and radial strain rates in FGM discs are significantly lower than in a uniform composite disc.

References


**Index Terms**

Computer Science  
Information Sciences

**Keywords**

Functionally Graded Material  
Cylinder  
Creep.