

Stress analysis in a half plane elasticity.

ABSTRACT

The biharmonic equation which governs the stress problem in a half plane elasticity is solved for the stresses using the Fourier transform technique. The Fourier transformed pressure exerted on a half plane is written into the basis of even and odd terms. It is found that the stresses at every point in a half plane elasticity are decomposable into some obtainable functions. An example is given to show the efficiency of the proposed technique.

Keyword: Plane elasticity; Biharmonic equation; Biharmonic function; Surface forces; Stress analysis; Airy function