

## DELAYED CORROSION CRACKING OF INFINITE PLATE WITH CIRCULAR APERTURE

### Abstract

Delayed corrosion cracking of infinite thin isotropic elastic loaded metal plate with a circular aperture which is under the action of corrosive environment is theoretically investigated. Two cases of loading are considered: 1) circle aperture of the plate is loaded along the contour by uniform pressure, 2) circular aperture of the plate is loading free, however plate is exposed to uniform stress. Analytical formula for the time before corrosion cracking of plate depending on loading and data of plate and corrosive environment are performed in both considered cases. In order to illustrate the mentioned formulae, corresponding graphics were constructed.