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BEARING CAPACITY OF A COMPOSITE ANNULAR PLATE WITH DIFFERENT FIXING CONDITIONS, SITUATED UNDER THE ACTION OF UNIFORMLY DISTRIBUTED LOAD

Abstract

In the paper we solve a problem an definition of an ultimate load (bearing capacity) for perfect rigidly plastic annular composite plates simply supported at internal and builtin at external edges and situated under the action of uniformly distributed lateral load. It is shown that the plate's surface is divided into five annular zones, at each of these different plastic states are relaized. Static fields of moments and kinematic fields of velocities of flexions are determined, the equations for the unknown radii separating different plastic zones, and also the equations for determining support reaction and ultimate load, are found.