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A PROBLEM ON CRACK NUCLEATION UNDER INNER COMPRESSION OF CYLINDRICAL BODIES

Abstract

A problem of fracture mechanics on nucleation of crack type defect in plunger pair bushing is considered. It is assumed that under repeated reciprocating motion of a plunger there happens crack nucleation and failure of materials of pair elements embryonic cracks are simulated by bridged prefracture strips that are considered as areas of weakened interpartide bonds of the material. It is accepted that the inner boundary of the bushing is close to the annular one and has a rough surface.