The problem of plane elasticity theory for rhombus.

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Annotation

The paper addresses to problem of plane elasticity theory for rhombus, which weakened with full-strength hole. The full-strength hole's boundary is free from external forces.

The solvability of this problem provides controlling stress optimal distribution selecting the appropriate hole boundary.

Using the methods of complex analysis [1], the unknown full-strength contour and stressed state of the body are determined. The developed method permits to reduce the considered problem with partially unknown boundary conditions to the problem of analytical function theory with known boundary conditions. Numerical analysis are performed and the corresponding graphs are constructed.

References

1.Muskhelishvili, N.: Some Basic Problems of the Mathematical Theory of Elasticity. Fundamental Equations, Plane Theory of Elasticity, Torsion and Bending, XXXI. Noordhoff International Publishing, Leyden, (1975).