

# METODE KESEIMBANGAN BATAS vs METODE ELEMEN HINGGA UNTUK ANALISIS PONDASI DANGKAL MENERUS PADA TANAH KOHESIF

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## ***Abstract***

*The most common analysis methods on shallow foundation are Terzaghi, Meyerhof, and Vesic. All of them are based on limit equilibrium, when the foundation starting to failure by applying maximum load. One of disadvantages of this method is that deformation and displacement of foundation and soil are not being considered. This behavior is very important for determining ultimate bearing capacity. The subject of this research is to compare the bearing capacity of shallow foundation between limit equilibrium method and finite element method (FEM). The foundation is modeled as strip rigid footing, whereas soil media is cohesive material with Mohr-Coulomb material model. The variation of soil consistency are: very soft, soft, medium, stiff and very stiff. The result indicates that bearing capacity by using finite element approach is relatively different from limit equilibrium method. The first methods is larger than the last one. By using FEM, soil deformation around the foundation can also be determined.*

## ***Keywords:***

*finite element method, limiting equilibrium, Mohr-Coulomb material model, shallow foundation*