

Extending Mohr's Theory Of Limit States In Determining Soil Seismic Loads On Retaining Walls

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Abstract text:

Mohr's theory concerning the stress limit state and its use in determining the active and passive soil pressures on retaining walls is being developed. Rankine's hypothesis, according to which the pressures on surface elements that are parallel to the free surface of ground have a vertical direction; the horizontal acceleration effect which generates inertia forces in the soil are accounted for. On these grounds the normal and tangential stresses on planes parallel to the back – of – wall ground surface are being expressed. By using the intrinsic curve corresponding to the sliding and the stresses expressed on these planes, Mohr's limit circles, as well as the active and the passive pressures generated by the seismic event on the retaining wall are determined. The solving process is an essentially graphic one and allows for the finding of the sliding plane and the main normal stresses as well as the extreme tangential ones in the points of this plane in which the tension state has reached the limit.

Key Words:

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