

**DETERMINATION OF ELASTICITY AND STRENGTHS OF INTACT ROCKS USING
MODIFIED POINT LOAD TEST**

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Abstract

Modified point load (MPL) test is proposed to determine the uniaxial compressive strength (UCS) and tensile strength of intact rocks. The results from finite element analysis suggest that the applied stress required to fail the MPL specimen increases logarithmically as the specimen thickness or diameter increases. The maximum tensile stress occurs directly below the loading area with a distance approximately equal to the loading diameter. Over 400 specimens of Saraburi marble have been tested to determine the compressive and tensile strengths under a variety of specimen sizes and length-to-diameter ratios. The test results suggest that the MPL strength can be correlated with the UCS when the MPL specimens are relatively thin, and can be an indicator of the tensile strength when the specimens are significantly larger than the diameter of the loading points.

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