

Numerical Simulation of Strength and Deformation Properties of  
Grade Crushed Stone Based on 3-D DEM

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**Abstract:** In this paper, we setup various 3 dimension discrete element method (3D-DEM) models to describe the grade crushed stone in various gradations. In these models, the actual size and gradation of aggregation are considered. Then, we numerically simulated the mechanical behavior of various gradation stones under triaxial loading and unloading by 3D-DEM. The relationship between contact force transfer route and deform and strength mechanism were analyzed in micro-scale.

**Keywords:** Grade Crushed Stone, deform and strength mechanism, 3 dimension discrete element method