

An Experimental Study of Dynamic Compressive Strength of Bushveld Complex Brittle Rocks under Impact Loadingsa Chemicals and Fibre Corporation, Changhua Branch

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Abstract : This paper reports for the first time the findings on the dynamic compressive strength data of Bushveld Complex brittle rock materials. These rocks were subjected to both quasi-static and impact loading tests to help understand their behaviour both under quasi-static and dynamic loading conditions. Unlike quasi-static tests, characterization of dynamic behaviour of materials is challenging, in particularly brittle rock materials. The split Hopkinson pressure bar (SHPB) results reported for anorthosite and norite showed relatively low values for dynamic compressive strength compared to the quasi-static uniaxial compressive strength data. It was noticed that the dynamic stress conditions were not fully attained during testing, as well as constant strain rate.

Keywords : Bushveld Complex, dynamic compression, rock brittleness, stress equilibrium

Conference Title : ICEMA 2015 : International Conference on Experimental Mechanics and Applications

Conference Location : Paris, France

Conference Dates : May 18-19, 2015