

"MICA BRIDGE" AND ITS EFFECT FOR ROCK STRENGTH

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A interesting phenomenon was found under microscope in thin sections cut from granitic rock samples undergone mechanical test controlled by low speed loading. It shows that the mica minerals in the rocks may not be completely broken when the rock samples were fractured and the microfractures appeared frequently. The microfractures usually do not cut across mica minerals when the minerals lay across on the fractures. This appearance just like the bridge lay across on the river, so they were named "mica bridge". Mica bridge can effectively resist the fractures to extend.

Mica is the weakest and the softest rock-forming mineral in granitic rocks. It is evident that the exist of some deformable components in rocks (or in other materials) would possess perfect characteristics for their resisting fracture extending. Mica rich-bearing rocks are better anti-seismic and anti-break materials than the mica poor-bearing ones.