

However, in spite of its wide use, the engineering characteristics of massive pyrophyllite have not been widely studied. The first such study was that done by Bridgman (2) on its thermal conductivity and compressibility to 10 kilobars of confining pressure. In this report, we present data on the room temperature torsional maximum shear strength and frictional characteristics to a quasi-confining pressure of 70 kilobars.

Experimental Procedure

The Abey-Stromberg high pressure torsional shear apparatus used in this work is described in the literature (3). Its main functional component consists of two symmetrically opposed cobalt bonded tungsten carbide conical pistons with flat tips that thrust into tapered bores of a blanked double-ended carbide cylinder. Both the pistons and the double cylinder are provided with lateral support by a system of precompression rings.

The driving force for generating pressure upon the sample is obtained from a hydraulic press. Torque is applied to the end faces of the disk shaped samples by rotating the cylinder assembly relative to the pistons which are prevented from rotating by pins. The cylinder is driven by a controllable variable speed gear train with a neutral moment.