

## CRD-C 89-64

**METHOD OF TEST FOR  
LONGITUDINAL SHEAR STRENGTH,  
UNCONFINED, SINGLE PLANE**

**Scope**

1. This method of test covers the procedure for testing specimens for longitudinal shear strength, unconfined, using a single shear plane.

**Apparatus**

2. (a) Testing Machine.- The testing machine shall conform to the requirements of CRD-C 14.

(b) Shear Device.- The shear device shall consist of an apparatus in which the test specimen can be clamped and supported so that bending stresses are minimized across the longitudinal plane along which the shear load is applied. A suitable apparatus is shown in Figs. 1 and 2.

**Test Specimens**

3. The specimens for this test shall be cylinders or prisms either 6 or 10 in. in height. Cylinders shall have a diameter equal to their height. The ends of the specimens shall have two plane parallel surfaces, or such surfaces shall be provided by capping in accordance with CRD-C 29.

**Procedure**

4. Procedures to be used with the apparatus as shown in Figs. 1 and 2 are as follows:

(a) Placement of Test Specimen.- Place the specimen in the device and tighten down the two headplate bolts with a torque wrench, using a setting of 35 ft-lb and taking precautions to insure that the plane along which the shear load is to be applied is in line and parallel to the shear edge at both the top and bottom of the apparatus. If the specimen to be tested is weak or contains a joint plane, the bolts should be fastened only handtight. Place the 2- by 3-1/4- by 11-in. rectangular steel loading block on top of the specimen and locate them in the testing machine, taking precautions to insure that the loading block is centered under the spherical head. Lower the head until it has made contact with the loading block.

(b) Rate of Loading.- The load shall be applied continuously and without shock until the specimen fails. Specimens that are 6 in. in height shall be loaded at a rate of 5500 lb per min; those that are 10 in. in height shall

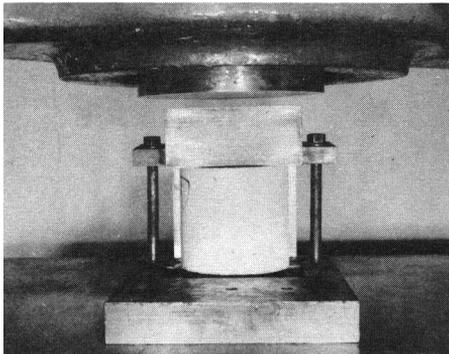


Fig. 1. Shear device in use,  
side view

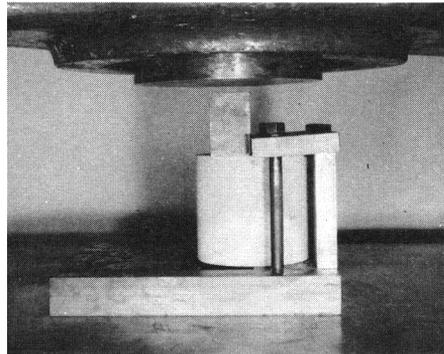


Fig. 2. Shear device in use,  
end view

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be loaded at a rate of 15,000 lb per min. The indicated load at failure shall be recorded.

the maximum load by the vertical cross-sectional area, normal to the loading face, and shall be expressed to the nearest 5 psi (Note).

**Calculations**

5. The shear strength of the specimen shall be calculated by dividing

Note.- Since, in this test, the effects of a combination of stresses are being measured, the value obtained should not be regarded as the true shear strength of the specimen.