Shearometer Tube (Weighted)
Instruction Card

Some drilling fluids, especially lime-treated drilling fluids, tend to thicken and in some cases to solidify when left under static conditions in a deep hot hole. This thickening impairs and sometimes prevents drilling and completion operations. Fann High Temperature Aging Cells have been developed to aid in predicting the performance of drilling fluids under static, high temperature conditions. The shear strength test using the weighted Shearometer Cylinder is commonly run on the sample from such a heat and aging test.

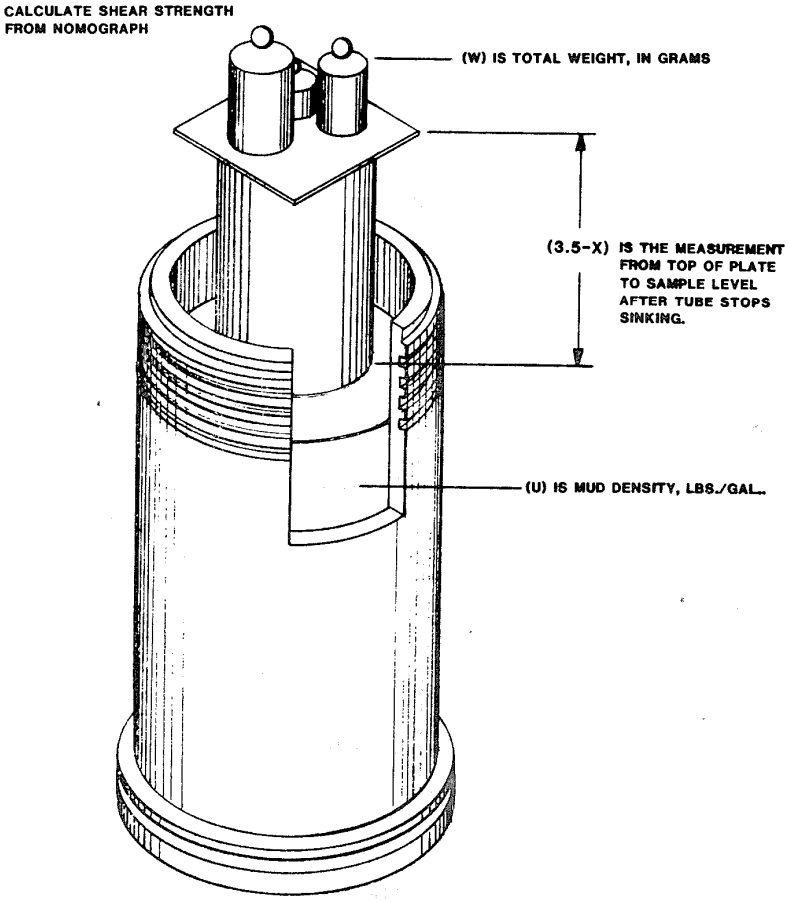
SHEAR STRENGTH TEST

1. Place the stainless steel shear tube on the surface of the sample. Refer to Fig. 1.

2. Place the stainless steel weight platform on top of the shear tube. This weight is 20 grams.

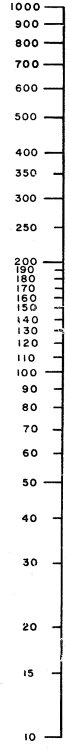
3. Starting with a small gram weight from the weight set, add gram weights until the tube starts to sink into the sample. The tube will stop its downward motion at the point where the shear strength of the gelled sample against the surface of the tube is sufficient to support the applied weight.

4. Measure the length of the tube exposed above the sample (3.5-X in inches). Refer to Fig. 1 and the nomograph.



Measuring Shear Strength

NOMOGRAPH FOR CALCULATING SHEAR STRENGTH OF A HIGHLY GELLED DRILLING FLUID



TOTAL SHEAR WEIGHT, W (G)

SHEAR STRENGTH, S (LB/100 FT^2)

$$S = \frac{3.615\,W}{X} - 0.256\,U$$

THIS NOMOGRAPH WAS DEVELOPED FOR USE WITH A STAINLESS STEEL SHEAROMETER TUBE OF:

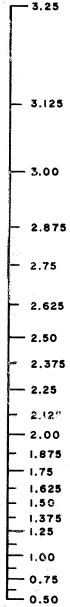
LENGTH = 3.5 IN.

WEIGHT = TUBE / PLATE } 20g

OUTSIDE DIAMETER = 1.4 IN.

WALL THICKNESS = 0.008 IN.

A MUD DENSITY U, OF 16 LB/GAL WAS ASSUMED.



LENGTH OF SHEAROMETER TUBE ABOVE MUD SURFACE (INCHES), (3.5−X)

5. The shear strength in pounds per 100 square feet is obtained from the nomograph by utilizing the force, in grams, (20 + gram weights) applied to the shear tube and the length of exposed tube after the tube reaches equilibrium, (3.5-X).

6. This nomograph is based on a sample having a density of 16 lb/gal. Use the equation shown on the nomograph to calculate the shear strength for samples of significantly different densities.

CARE OF SHEAROMETER

Shearometer parts should be cleaned and dried after use.

PARTS LIST

Part No.	Description
206958	Shearometer Tube, Stainless Steel with weight support plate, 20 gram
206967	Gram weights, Set

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