

Components:

#166-12 Shearometer Tube; Standard; Aluminum; 5 gm

The Shearometer is not recommended for testing fluids with very high or low gel strengths. For testing heavier fluids, a 20-gram stainless steel shear tube is available, that is designed specifically for high gel strength fluids. More detail may be obtained in the OFITE 166-10 set of instructions.

Optional Equipment for Heavier Fluids:

#166-10 Shearometer Tube with Weight Support, S.S.;
20 gm

#166-02 Balance Weight Set; 50 gm - 10 mg

**Shearometer Kit****Item# 166-08****Instruction Manual****Updated 11/29/2011****Ver. 1.3****OFI Testing Equipment, Inc.**

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Introduction:

Experience has shown that many drilling fluids tend to develop excessive gel or shear strength under static conditions when the mud is not circulating in the well bore. This is especially noticeable at elevated temperatures. Excessive shear strength results in high pump pressures required to "break circulation", and may result in loss of circulation and difficulties in logging, perforating and other down-hole operations.

The Shearometer may be used to estimate the extent to which the drilling fluid will develop excessive gel strength, and is the primary measuring device used in the determination of the gel strength of a drilling fluid. The set consists of two hollow shear tubes (3.5" long × 1.4" ID) weighing 5 grams each and a stainless steel sample cup with a graduated scale mounted vertically in the center of the cup base. The scale measures gel strength in pounds per 100 square feet.

Procedure - Initial Gel Strength:

Ensure the sample cup and scale are clean and dry before beginning the test. There should also be a way to accurately measure elapsed time. A stopwatch is ideal for this.

1. Wet the hollow Shearometer tube and wipe away the excess water.
2. Pour a freshly agitated drilling fluid sample into the stainless steel sample cup. The fluid level should be even with the bottom line on the scale.
3. As soon as the surface of the fluid is calm and steady, carefully fit a hollow Shearometer tube over the measuring scale protruding up from the drilling fluid sample and lower the tube to the surface of the fluid.
4. Release the Shearometer tube and let it sink into the fluid for one minute, as measured from the instant the tube is released. The tube may be kept vertical by gently guiding it with your fingers if necessary.
5. After the one minute time period has elapsed, read and record the scale reading visible at the top of the Shearometer tube. The reading should be reported in pounds per 100 square feet as initial gel.

Procedure - 10 Minute Gel Strength:

Ensure the sample cup and scale are clean and dry before beginning the test. There should also be a way to accurately measure elapsed time. A stopwatch is ideal for this.

1. Wet the hollow Shearometer tube and wipe away the excess water.
2. Pour a freshly agitated drilling fluid sample into the stainless steel sample cup. The fluid level should be even with the bottom line on the scale.
3. Allow the fluid to stand undisturbed for 10 minutes or for some other time period if so desired.
4. Carefully fit a hollow Shearometer tube over the measuring scale protruding up from the drilling fluid sample and lower the tube to the surface of the fluid.
5. Release the Shearometer tube and let it sink into the fluid for one minute, as measured from the instant the tube is released. The tube may be kept vertical by gently guiding it with your fingers if necessary.
6. After the one minute time period has elapsed, read and record the scale reading visible at the top of the Shearometer tube. The reading should be reported in pounds per 100 square feet, for the time that has elapsed since the fluid was poured into the cup.