

INSTRUCTIONS:
**OFITE LOST CIRCULATION MATERIAL TESTING
APPARATUS**

The OFITE lost circulation material testing apparatus consists of a tall filter cell, which can be used, with either of two special base caps. For tests to simulate sealing characteristics in a porous formation, the base cap with the 3/16-inch ID outlet is used to perform the shot bed test. For tests to simulate sealing characteristics in a fractured formation the base cap with a slot 2" long, 0.05 inches wide and 1/4" deep is used to perform the slot bed test. It is mounted on a sturdy metal frame and is equipped with an adjustable plexi-glass splash guard.

Additional equipment needed:

- A. Source of pressure regulated nitrogen
- B. Lead shot (mesh size optional)
- C. 30 minute timer

PROCEDURE:

- A. Prepare a base mud consisting of 5 to 8 percent by weight Wyoming-type bentonite and allow the mud to stand overnight. Adjust the viscosity to 95 +- 5 centipoise before using.
- B. To 500 cm³ of the base mud, add a weighted amount of the material to be tested. Express the additive concentration in lb per bbl.

$$(\text{lb per bbl of additive}) = \frac{\text{grams of additive used}}{1.4286}$$

SHOT BED TEST:

(to determine sealing characteristics in a porous formation)

- 1.0 Assemble the following parts in this order:
 - Base cap with 3/16" ID outlet
 - Rubber gasket
 - Screen
 - Rubber gasket
 - Cell body
- 1.1 Add to cell a 3/4" layer of selected lead shot

- 1.2 Fill the cell to within one-quarter inch from the top with mud sample to be tested. Place the unit on to the metal frame. A small plastic cup is provided that can be mounted on metal frame to collect any discharge of mud before testing begins.
- 1.3 Check the top cap to insure that the rubber gasket is in place and seated all the way around. Place the top cap on the cell and secure the unit in place with the T-screw.
- 1.4 Remove small plastic cup and replace with graduated beaker. Lock splash guard into place around cell.
- 1.5 Apply 100 psi pressure to cell and simultaneously start timer.
- 1.6 Stop timer when fluid stops coming out.
- 1.7 Note the volume of fluid collected and time required to seal. Normally a volume of 100 cm³ or less is desired.

SLOT BED TEST:

(to determine sealing characteristics of a fractured formation)

- 2.0 Assemble the following parts in this order:
 - Base cap with 2" slot
 - Rubber gasket
 - Screen
 - Rubber gasket
 - Cell body
- 2.1 Add to cell a $\frac{3}{4}$ layer of selected lead shot.
- 2.2 Fill the cell to within one quarter inch from the top with mud sample to be tested. Place the unit onto the metal frame. A small plastic cup is provided that can be mounted on metal frame to collect any discharge of mud before testing begins.
- 2.3 Check the top cap to insure that the rubber gasket is in place and seated all the way around. Place the top cap on the cell and secure the unit in place with the T-screw.
- 2.4 Remove small plastic cup and replace with graduated beaker. Lock splash guard into place around cell.
- 2.5 Apply 100 psi pressure to cell and simultaneously start timer.
- 2.6 Stop timer when fluid stops coming out.
- 2.7 Note the volume of fluid collected and time required to seal. Normally a volume of 100 cm³ or less is desired.

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