

INSTRUCTIONS:
HPHT FILTER PRESS FOR CEMENT TESTING

The OFI high pressure, high temperature filter press can be used for testing oil well cements using a special end cap and separate screen. The screen is a 325 mesh stainless backed by a 60 mesh stainless steel screen. A double-ended cell with identical caps can be used. A nitrogen pressure manifold is required to supply pressure to the cell as the tests are run at 1000 psi.

PREPARATION:

1. Assemble the filter press cell dry.
2. Prepare the slurry in accordance with section 2, API RP 10B code.
3. Place slurry in a thickening-time tester for high-pressure simulation or in a consistometer for atmospheric pressure simulation. When this is completed, pour the slurry into the filter press cell. The press and slurry are maintained at the final temperature of the schedule for the duration of the fluids loss test.

TESTING PROCEDURE:

1. Fill the cell with a minimum of two inches of cement slurry, cap & place in the frame. Place a dry graduated cylinder under the filtrate tube to collect the filtrate. Close the relief valve and apply 1000 psi pressure within five seconds.
2. The test period should be timed from the instant of initial pressure application. Then take filtrate readings at 15 seconds, 30 seconds, one, two and five minutes. After the first five minutes, take readings at 5-minute intervals thereafter for 30 minutes. If dehydration happens before the end of 30 minutes, record the time required for dehydration. After the 30-minute test period, shut off pressure and open relief valve.

RESULTS:

Report the initial temperature of the slurry in degrees Fahrenheit. Record the volume of filtrate as follows:

1. For the 30-minute test period, report the volume of filtrate as the fluid loss at 100 psi.

2. For slurries which reach dehydration in less than 30 minutes and for tests shorter than 30 minutes, a hypothetical 30 minute fluids loss value may be reached by plotting the results on log-log paper & extrapolating to the 30 minute or by using the following equation:

$$Q_{30} = Q_t \times \frac{5.477}{t}$$

WHERE:

Q₃₀ = the quantity of filtrate in 30 minutes

Q_t = the quantity of filtrate at the time of dehydration

All computed 30-minute fluids loss values should be noted and not used as true fluids loss values.

3. Record the thickening time schedule used.

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