

Example 7in liner 2 stage cementing procedure

1. Calibrate rig pumps efficiency during the conditioning trip prior to pulling out of the hole to run casing.
2. Check and line up manifold valves so that pumping can start upon positioning liner with shoe in place. Washing down the liner could be necessary.
Use liner with 60,000 lbs shear pin.

1. Setting Temblock Plug / MagnePlus

1. Mix required volume of temblock.
2. RIH with 3.1/2in cement stinger to 300ft below the Magne Plus setting depth and spot Hi-Vis pill.
3. POOH with 3.1/2in cement stinger to required depth.
4. Set 500 ft of temblock as a balanced plug.
5. POOH 5 stands and REVERSE CIRCULATE one drill string volume. POOH.
6. RIH and Tag (only after 16hrs) and dress top of plug.
7. POOH.

2. Setting the Liner

1. RIH with liner. P/up liner setting tool, test same and break circulation. Record weight of liner in mud.
2. Circulate for 15 minutes prior to running into open hole.
3. Position liner shoe at desired depth.
4. Load shut off plug releasing dart into TIW top drive manifold.
5. Break circulation. Circulate 150 % bottoms up. Break circulation slowly and do not exceed 800 psi (< shear pin of hanger). Record pick up and slack of weight of string.
6. Set rotating liner hanger
7. Release liner running tool. POOH 5ft above neutral point, set 20,000 lb slack of weight.
8. Set external casing packer (ECP) by pumping mud at 1 500 psi. Increase to 1 700 psi, incrementally, holding for five minutes every 100 psi. Hold for ten minutes at 2 000 psi + 10%. Bleed off to close check valve.
9. Open ES cementer ports by increasing pressure to 2 750 psi + 10%.
10. Circulate hole clean while mixing slurry.
11. Load shut off releasing dart.
12. Prepare 30 bbls of spacer 500 (10.5 ppg).
13. Mix (batch) first stage cement slurry to 15 ppg. **Note:** Cement volume to be re-calculated on rig if liner setting depth changes based on calliper volume and 10 % excess.
14. Pump 5 bbls fresh water ahead of cement followed by 30 bbls 10.5 ppg dual spacer.
15. Cement 7in liner.
16. Drop shut off plug releasing dart. Follow with 2 bbls cement to avoid any rotation of plug when drilling out.
17. Displace cement with mud t 10 - 12 pm or as fast as possible without breaking down formation, using the cementing unit for primary displacement measurements and mud pit volumes as a check. Slow down rate to 3 bpm, while latching the wipe plug, for last 5 bbls of displacement.
18. Observe second liner wiper plug shearing from stinger and Check volume displaced.
19. Pump plug with 1 000 psi if plug does not bump, Overdisplace 50 % of shoe track volume, and stop pumping.

3. Second stage cementation (lead and tail)

1. Load closing releasing dart in the cementing manifold.
2. Prepare 30 bbls dual spacer in slug pit according to procedure.
3. Mix second stage cement slurry as follows, including 10 % excess in open hole. **Note:** Cement volume to be re-calculated on rig if liner setting depth changes based on calliper volume + 10 % excess.

4. Pump 5 bbls fresh water ahead of cement followed by 30 bbls 10.5 ppg dual spacer.
5. Cement 7in liner (lead and tail) in place with class "G" cement as per recipe.
6. Drop shut-off plug releasing dart followed by 2 bbls cement to avoid any rotation of plug when drilling out.
7. Displace cement with mud at 10 - 12 bpm or as fast as possible without breaking down formation, using the cementing unit for primary displacement measurements and mud pit volumes as a check. Slow down rate to 3 bpm, while latching the wiper plug, for last 5 bbls of displacement.
8. When plug bumps, increase pressure up to 1 285 psi differential pressure to close ES cementer circulating ports.
9. Pressure test liner to 2 500 psi for 15 minutes.
10. Unsting from hanger and allow fluids to U/tube. POOH four stands and Circulate out normally. Observe returns at surface for contaminated cement which will be dumped overboard.
11. POOH with liner setting tool and lay down same.
12. Drill out and test 7in liner lap.