

SAVUKA STOPE SUPPORT TESTING FACILITY

NEWSLETTER

Issue No.3, August 2002

Crumbs, is it time to write the next monthly newsletter? It's amazing how time flies when you are having fun.

Two tests were conducted at the test facility during the month of July. Unfortunately the gremlins finally found their way to Carletonville.

The gremlins decided that it was time for the strike plate to crack and as a result the safety and tensioning pins needed refurbishing during June/July. Despite these delays, two tests were completed during July.

Tests Performed during July 2002

Test No.6

On 9 July 2002, two drop tests were conducted on the new Omni 150 sacrificial hydraulic prop units supplied by ELBROC. The support units were spaced 1.25 metres apart. Headboards were installed on top of the props, allowing two blocks to move freely in between the support units (Figure 1).

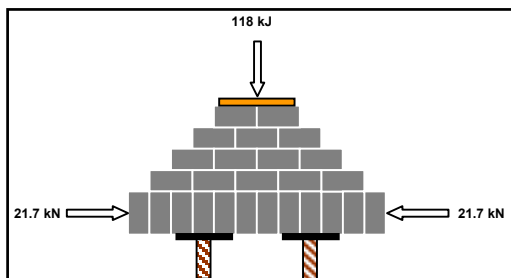


Figure 1: Test 6 configuration.

The drop weight was released from a height of 1.2 metres, which imparted

118 kJ of energy to the load distribution pyramid, with an impact velocity of 4.85 m/s.

The support system performed well, not allowing any blocks to be dislodged from the hangingwall beams.



Figure 2: The support system before the first drop test from a height of 1.2 metres.



Figure 3: During the energy impulse no blocks were dislodged into the stope area.



Figure 4: The conditions of the props and hangingwall beam after the first drop test.

A second drop was performed on the deformed hangingwall beams and support system. The drop was identical to the first drop. No blocks were dislodged from the hangingwall beam during the second drop test (Figure 5).



Figure 5: The condition of the hangingwall beam and props were still good after the second drop.

The displacements measured after each drop test are presented in Figure 6 and 7.

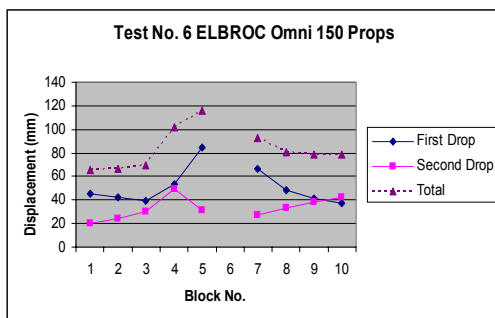


Figure 6: Plot of the block displacements during both drops.

No measurements were made for block No. 6, as the tape was dislodged during the first drop.

The first drop gave the most displacement with a maximum measured displacement of 85 mm. The second drop from the same height caused a further 49 mm of displacement, giving a total displacement in the blocks of 116 mm (Figure 6).

The displacements experienced by the individual hydraulic props were also measured during the two drops (Figure 7).

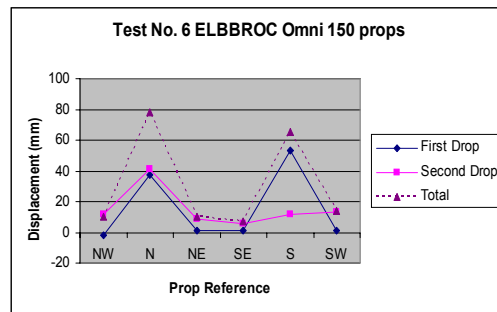


Figure 7: The displacement as measured on the individual support units.

The north and south props supporting the central beam showed a maximum displacement of 53 mm during the first drop and 41 mm during the second drop.

The total displacement measured in the north prop unit was 78 mm after both drops.

Test No. 7

Test 7 was conducted on 18 July 2002, which involved a second round of drop tests on the ELBROC Omni 150 props. The support set up was identical to test 6 except that the spacing of the props had been moved further apart to 1.5 metres centre to centre.

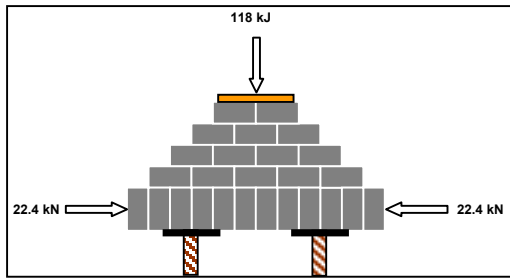


Figure 8: Test 7 configuration.

The drop weight was dropped from a height of 1.2 metres, which imparted 118 kJ of energy to the load distribution pyramid, with an impact velocity of 4.85 m/s.



Figure 9: No blocks were dislodged after first drop.

A second drop test was conducted from the same height. No blocks were dislodged during either drop test. The central beam deflected towards the stope centre, while the ends lifted (Figure 9 and 10).



Figure 10: The hangingwall beam condition after the second drop, showing the central beam deflection.

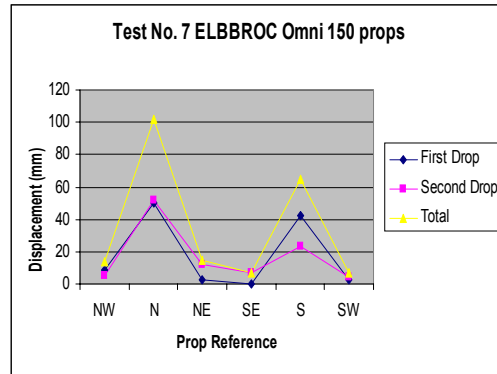


Figure 11: Displacement measured per individual support unit.

The maximum displacement measured in the north prop was 50 mm and 52 mm during the second drop, giving a total of 102 mm on the north prop, supporting the central beam.

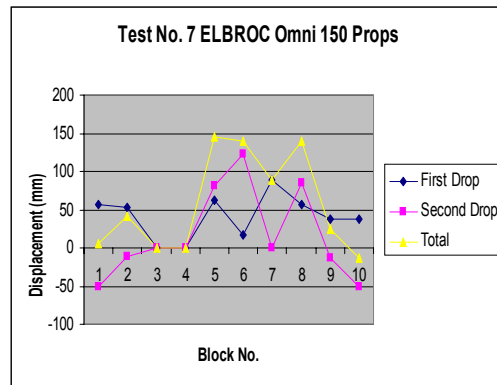


Figure 12: Displacement measured in the hangingwall blocks.

The maximum displacement in the blocks was 145 mm. During the second drop, outer blocks 1, 2, 9 and 10 of the central beam moved upwards as the beam deflected downwards in the middle (Figure 12).

No tapes were installed on blocks 3 and 4, due to interference with the load gauges installed on two of the hydraulic props. The objective was to record the maximum load generated in the hydraulic props during the drop test. Unfortunately, both gauges did pass the test, due to their maximum being exceeded during the drop test.

On the Lighter Side



Figure 13: A rare photograph: Duncan and Allan in a stope.

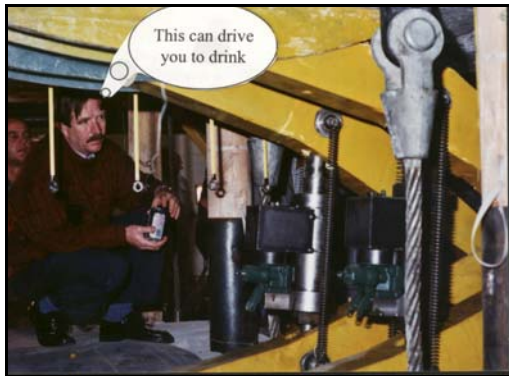


Figure 14: Matthew contemplating design work.

Planned Tests for August 2002

- Elbroc Omni 150 hydraulic prop – 1 test.
- Hydraulic walking stope support unit from Mingingtek.
- It is planned to start calibration tests during the months of August and September 2002.

As the growth of the interest group is vital to the success of the test facility, please do not hesitate to forward me e-mail addresses of people or companies who should be included in the interest group.

All feedback will be appreciated.

Regards

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