Increased agility for the research and development of dynamic roof support products

Greig Knox
&
Adrian Berghorst
Agenda

• Dynamic Performance
• Dynamic Test Methods
• NCM DIT Overview & Instrumentation
• Data Processing
Requirement for Dynamic Testing

Typical Load-Displacement QS vs Dyn.
Requirement for Dynamic Testing

MP1-2024 Load-Displacement Q.S. Vs Dyn.
“...the main advantage of the drop test approach lies in the capacity to perform a relatively large number of tests at a reasonable cost without interfering with mining operations.”

(Hadjigeorgiou & Potvin, 2011)
NCM DIT

- 65 kJ  Energy (maximum)
- 551kg  Weight (minimum)
- 3171kg Weight (maximum)
- 2.1m  Drop Height (maximum)
- 6.4m/s  Velocity at Impact (maximum)
- 3.5m  Bolt Length (maximum)
NCM DIT: Measurement Overview

- Impact Load (kN)
- Toe Displacement (mm)
- Plate Displacement (mm)
- Plate Load (kN)

Time (s)

Load (kN)

Displacement (mm)
NCM DIT: Measurement Overview

Load Cells

User Interface & Report Generation

Line scan Cameras
NCM DIT: Data Processing

Overview: Load-Displacement NCM Products

- PAR1R Ø22 mm
- PAR1R Ø25 mm
- MP1 Ø20 mm
- Vulcan Ø20 mm
- PAR1R Ø20 mm
- Material Test Ø20 mm

215 Samples
500 Drops
References
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