

Highwall Safety

- **Highwall failures** can occur due to a variety of factors, including geological conditions, weather-related factors, improper design and operational practices, and lack of monitoring and maintenance.

Toppling: Occurs when the highwall's upper layers become unstable and fall over.

Sliding: Involves the sudden movement of a large mass of rock or soil along a plane of weakness.

Rotational failure: Occurs when a large mass of rock or soil rotates around a fixed axis, causing it to move downslope.

- **Regular inspection:**

- Implement a strict inspection routine to identify signs of highwall instability or deterioration.
- Establish communication protocols to report any abnormalities or concerns promptly.

- **Equipment and personnel safety:**

- Install catch benches and berms to intercept falling material and minimize damage to equipment and personnel.
- Ensure that heavy machinery is operated at a safe distance and positioning in regard to the highwall.
- Train miners on highwall safety procedures, emergency response protocols, and hazard recognition.
- Establish restricted areas near highwalls. Access will be restricted to essential personnel only.

- **Weather-related precautions:**

- Monitor weather forecasts and adjust mining operations accordingly, particularly during heavy rainfall or snowmelt events.
- Implement proper drainage systems to manage water infiltration and control erosion.
- Conduct regular inspections after significant weather events to identify any highwall damage or instability.