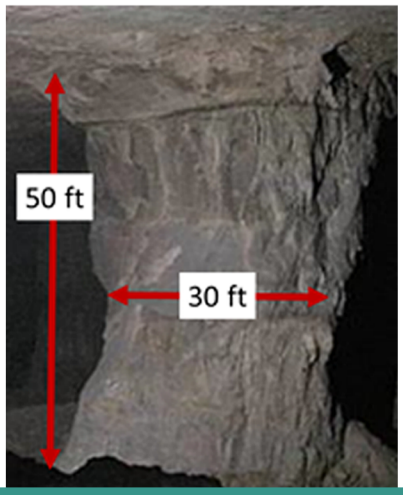
SAFETY ALERT

Stone Mine Massive Pillar Collapses

Four massive pillar collapses have occurred in limestone mines since October 2020



Width-to-Height Ratio Example: 30′/50′ = 0.6

Causes of Massive Pillar Collapses:

- Slender pillars are susceptible to sudden failure
- Benching can create these tall, thin pillars (width-to-height ratio <0.8)
- Collapses can occur in old and recently benched areas

What are the Dangers?

- Air Blasts
- Ground Falls
- Surface Sinkholes
- Loss of Mine Access

Be Alert for Spalling and Hourglassing

Address Potential for Future Massive Pillar Collapses:

- Properly design pillars for benching (width-to-height ratio >0.8 and assess pillar stability)
- Maintain planned dimensions
- Account for pillar raveling or blasting overbreak
- Assess geologic features in the pillar

Identify At-Risk Areas:

- Recognize signs, such as spalling and hourglassing, that may indicate a pillar is overstressed
- Assess benched areas and verify pillar dimensions
- Evaluate potential air blast pathways
  - Reduce exposure of miners to airpaths
  - Protect mine infrastructure

United States Department of Labor MSHA Mine Safety and Health Administration

For more information:
www.msha.gov/PillarInitiative