



The Dust Suppression Hopper: Towards Understanding the Science



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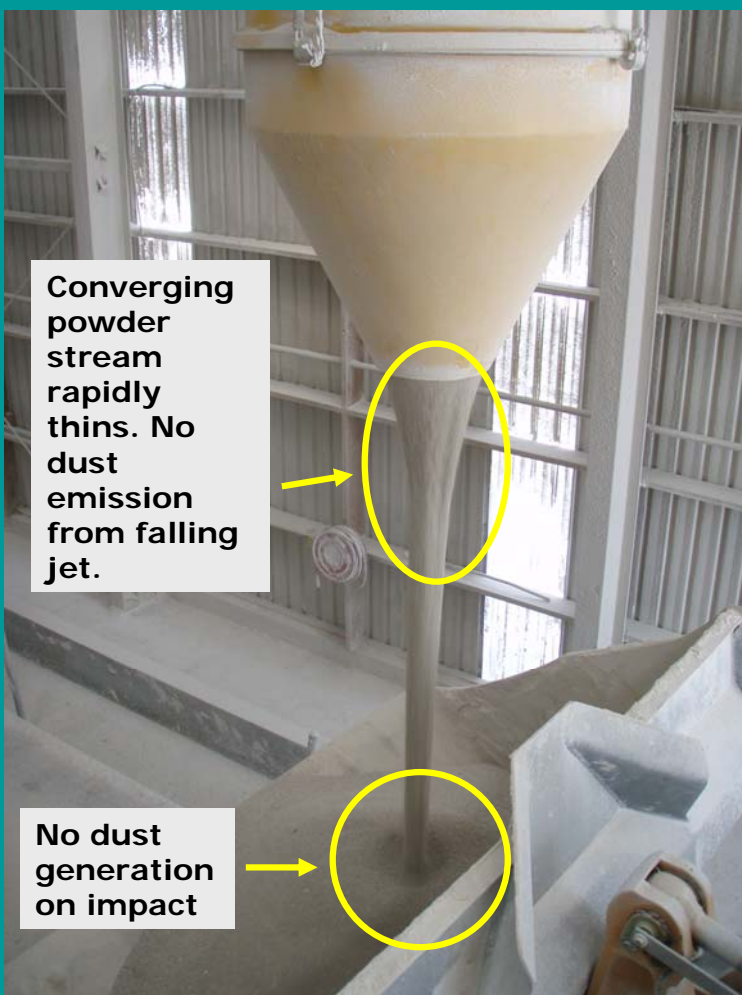


Dust generation by direct feed from conveyor belt.

(these are relatively low dust levels; higher levels could totally obscure the photograph)



Particle breakaway at the edge of the feed from conveyor belt



Converging powder stream rapidly thins. No dust emission from falling jet.

No dust generation on impact

System can be scaled up or down. Sand jet from model hopper, 28 mm in diameter.

Research Agenda includes:

- Flow paths of individual grains in falling jet and in other falling streams (e.g. from conveyor belt)
- Flow of surrounding air
- Effect of particle size
- Pressure distribution in jet
- Quantifying dust reduction
- Effects of scale
- Effects of system geometry



No Dust generation on impact. Radial flow away from impact point.