



MSHA's Accident Prevention Program Safety Idea

**SAFETY
IS A
VALUE!**

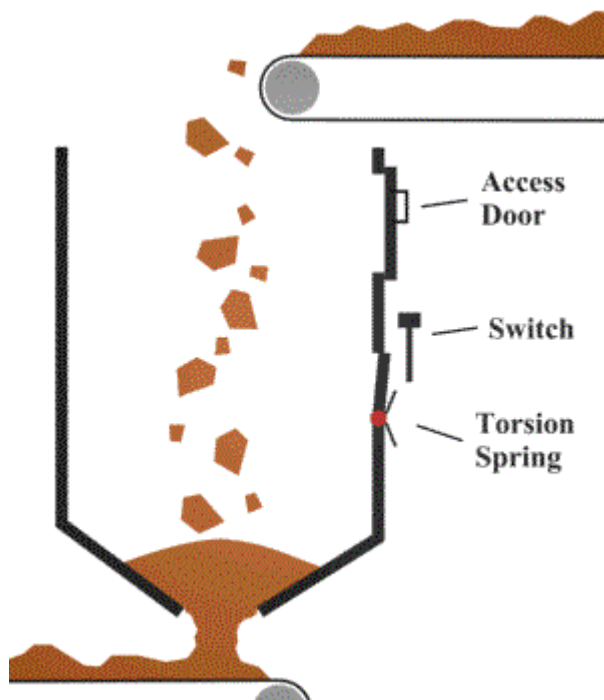
Chutes and Bins: Stop the Flow to Prevent Spillage

Category : All Mines
Mine Type: Material Handling and Storage

Recently a miner was seriously injured when he opened a rock chute access door and material unexpectedly poured out on him. The chute involved in the accident had several switches to shut off the flow of material to the chute, but none of them was effective in keeping the chute from over-filling.

Several methods are available to stop the flow of material to a chute or bin and prevent spillage. These include the use of sonic or optic sensors, tilt switches, and rotating-vane type indicators.

Aside from commercially available switches, you can fabricate and install a simple switch mechanism in the side of a bin or chute that will shut off the feed belt by sensing the pressure of material against the side of the enclosure. Switches of this type can be installed at any level and if placed right below an access door, will keep material from spilling when the access door is opened.



To install the switch, cut out a small panel, on the order of 8 by 8 inches, from the side of the bin at the level where you'd want to shut off the belt and limit any further material buildup. Cut this panel out carefully because the cut-out piece will be used as a hinged pressure plate. Attach the panel back in its original position using a hinge and a torsion spring mounted along the bottom of the panel. Position and wire an electrical switch such that when pressure on the side of the enclosure pushes the hinged panel outward, the switch will be activated and shut off the feed belt.

Whatever method you use, ensure that your bins and chutes are equipped to effectively prevent spillage. By stopping the flow of material before spillage occurs you not only eliminate manual clean-up work, but you prevent the type of accidents associated with such work.

Remember – Safety is a Value that you can LIVE with!