Flow Behavior Of Mineral Particles Through Silos

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Abstract

Flow behavior of dry minerals in silos has been investigated initially with glass funnels with different orifices. Thereafter, funnel was scaled up to a pilot plant (Silo) with adjustable orifices at its discharge end. The flow rates vs particle size were investigated with beach mineral sands and quartz grains of varying sizes obtained from river sand. Zero flow rates were observed at d/D ratio of 1/5-1/4 for large size sand grains. For small grains of size about 200 microns zero flow rate was observed for orifice diameters 1.5, 2.0and 3.5cms respectively due to 'floc' effect arising probably from static electrical charges of the powder and the humidity of air prevailing at the time of investigation