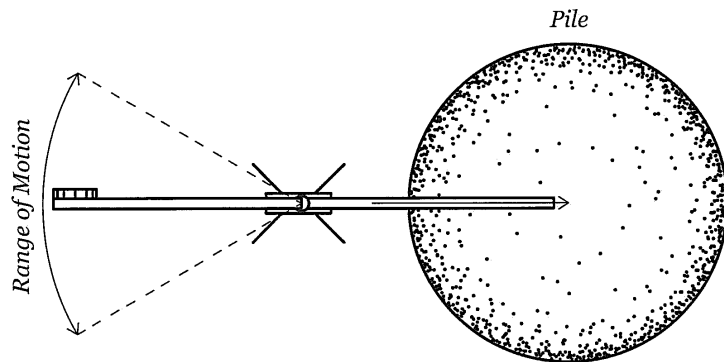
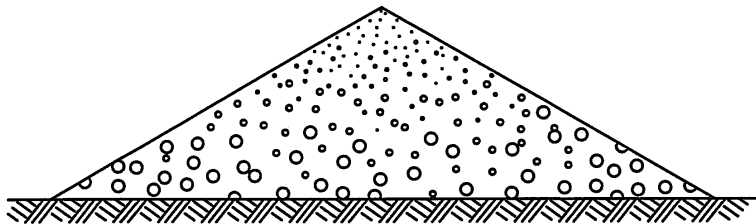


SUPER SPREADER

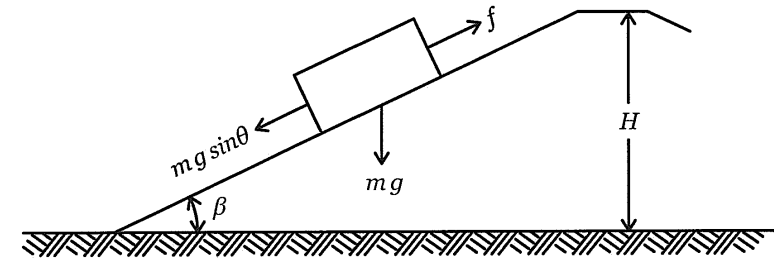


Spreaders are machines that operate at the end of a mining system and continuously dump or spread material received from transfer conveyors. The main design criterion is the length of the discharge boom, determined by the required dumping height as well as the properties of the material dumped.

Different-size pieces in a material being piled or disturbed have a tendency to separate from each other, so that a disproportionately large amount of coarse pieces will be found in one part of the pile and finer ones in another. When a pile is built from the top, material falls or settles onto the pile, picking up greater or less momentum from the downward movement. Small particles develop little energy, and tend to come to rest almost immediately. Larger ones have enough momentum to slide or roll down the surface, the biggest tending to reach the ground.



STABILITY OF SLOPES



The failure of a mass of soil in a downward and outward movement of a slope is called a slide or slope failure. Slides occur in almost every conceivable manner, slowly or suddenly and with or without any apparent provocation. They are usually caused by excavation, by undercutting the foot of an existing slope, by a gradual disintegration of the structure of the soil, by an increase of the pore water pressure in a few exceptionally permeable layers or by a shock that liquefies the soil. Two types of slope stability problems occur in clays; short-term stability (end-of-construction case) and long-term stability (steady seepage case). The short-term case applies after a cut is made in a slope and can be neglected in our case. Stability analysis determines whether the given or proposed slope meets the safety requirements: soil mass under given loads should have an adequate safety factor with respect to shear failure and the deformation of the soil mass under the given loads should not exceed certain tolerable limits.

$$m g \sin (\beta) = F$$

mass kg/m^3 frictional force N
 9.81 m/s^2 slope angle $^\circ$