



ABSTRACT

Handling material equipment is one of equipments that have important role in industry. As example at shop factory, its so many use handling material equipment starting from material until soap that ready to packaging and transported to the market. Usage of conveyor must concern about the transported material. A mistake at conveyor selection will be cause low effectiveness and cause high production cost.

To transport soap material in granular form with horizontal direction and materials are sliced while in transit, its very effective when use screw conveyor. To transport soap material in granular form with vertical directions, its very effective when use bucket elevator. When use screw conveyor and bucket elevator, the material never scattered or affected by surrounding condition because its closed by casing.

Screw conveyor is one of the equipment to convey bulk material, its commonly in horizontal directions. Its can be in vertical or inclined directions, but must use special design. The screw conveyor usually consists of a shaft mounted screw rotating in a trough and of the drive unit setting the shaft in rotary motion. The principle by which the material is made to slide along the trough is similar to the manner in which a nut prevented from rotating receives translatory motion when the screw fitted into it is turned. Material that will be transported have density $0,25 \text{ ton/m}^3$, in chips form, small lumped ($a' < 60 \text{ mm}$).

Bucket elevator is handling material equipment that transport certain material from one place to another place in vertical or inclined direction. In the design of bucket elevator very influenced by material that transported and the typical operation of elevator. Material that will be transported have density $0,75 \text{ ton/m}^3$, in granular form, medium and large-lumped ($a' > 60 \text{ mm}$), temperature $40\text{-}100^\circ\text{C}$, and water content $0,5\% - 1\%$.



In this design will be designed screw conveyor and bucket elevator to transport soap material with each capacity 2 ton/hour and 10 ton/hour.

Key word : conveyor, screw, bucket, horizontal, vertical