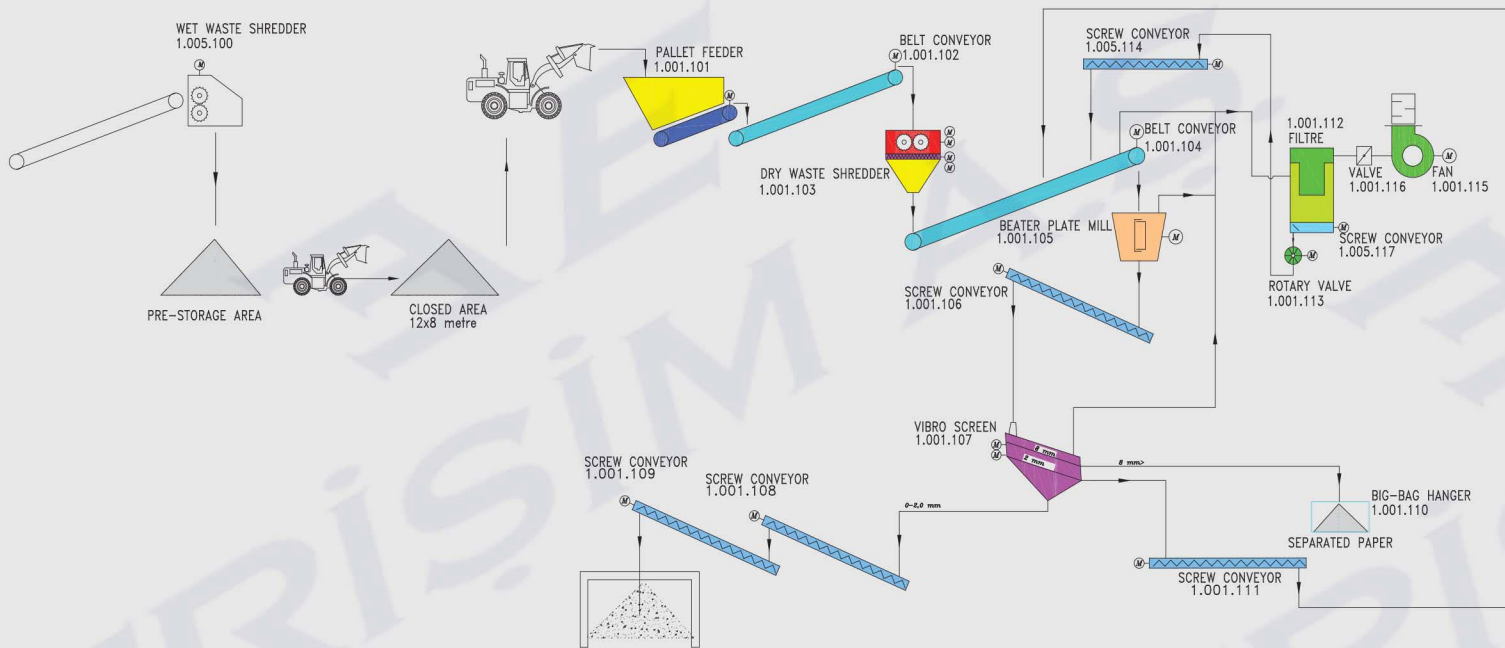


RECYCLING LINE FLOW DIAGRAM



ISSUE: Separation by shredding the waste dry and wet plasters as a paper and gypsum powder
PURPOSE: Make the waste materials available again by processing; bring the gypsum powder and paper in country's economy and prevent to environment pollution...

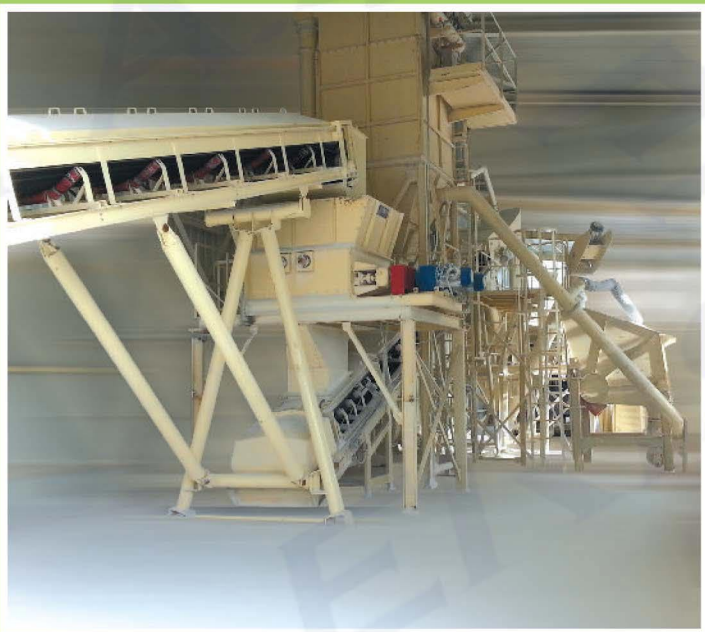
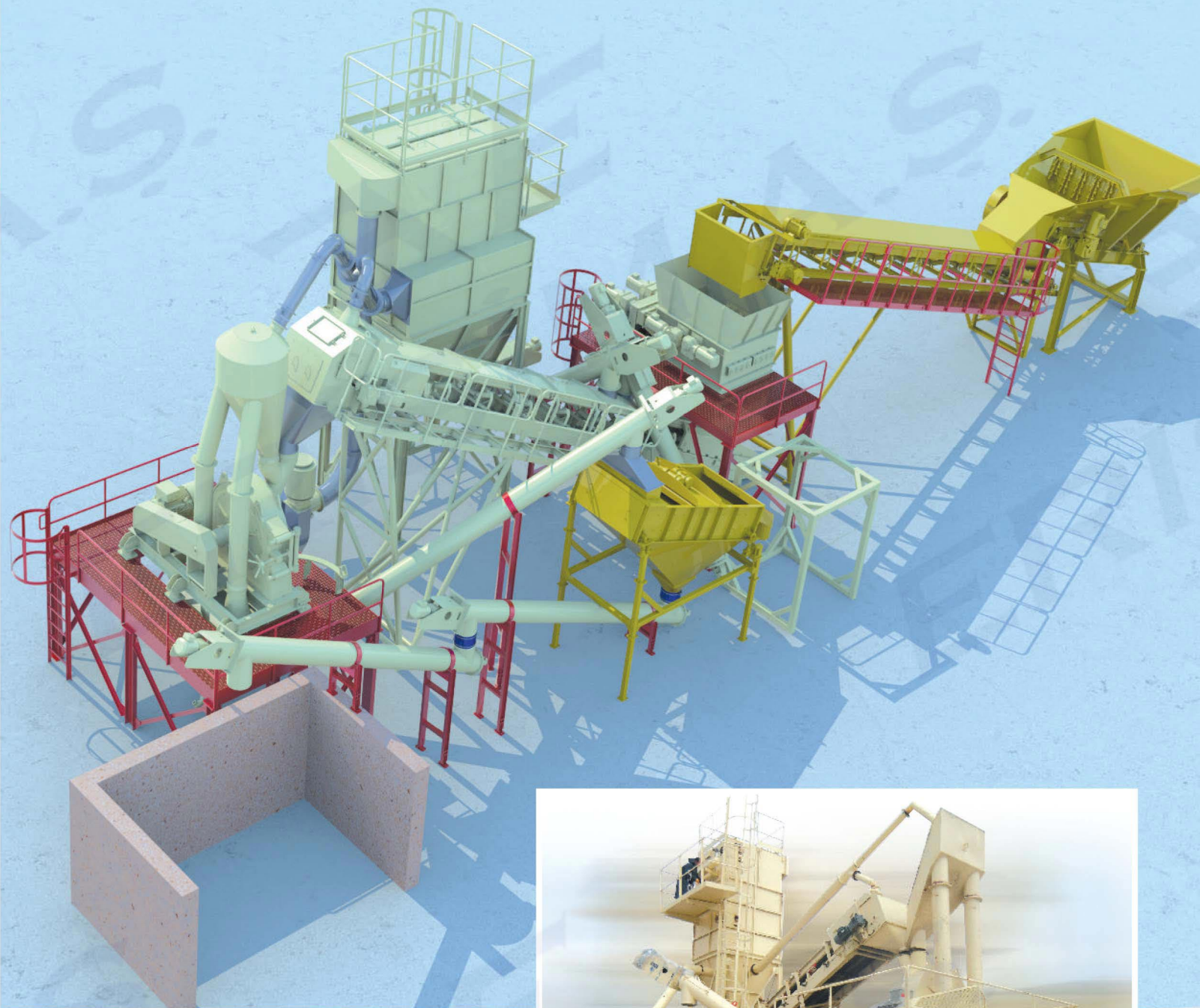
PROCESS STAGES

- APRON FEEDER
- BELT CONVEYOR
- SHREDDER
- BELT CONVEYOR
- BEATER PLATE MILL
- SCREW CONVEYOR
- VIBRATION SCREENING MACHINE
- DEDUSTING UNIT
- Filter - Fan - Rotary Valve



Some nonconforming wet plasters are dismissed from the system by the roll-out belt in the plasterboard production facility. This boards, being in from of mixed paper and gypsum powder with dimension of 5-15 cm are stored in the storage area, by being passed through the main shredder located on the outlets of roll-out belt.

The inactive products in the outlet of kiln will also be separated while getting shredded in order to reclaim in this unit.



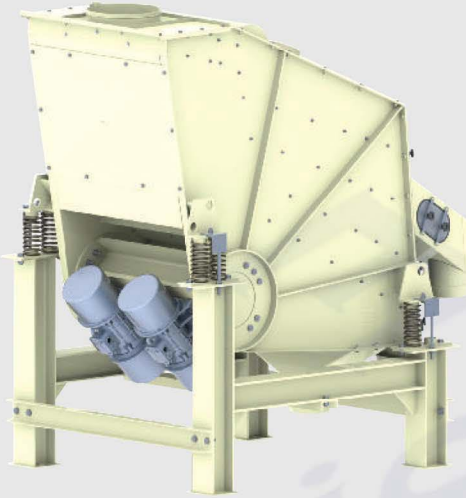
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VIBRATION SCREENING MACHINE 7

Working principle of the vibration screening machine; separating the waste plasterboard according to grain size-paper or gypsum powder- and regain them to the system, by this means products can be used over and over again.

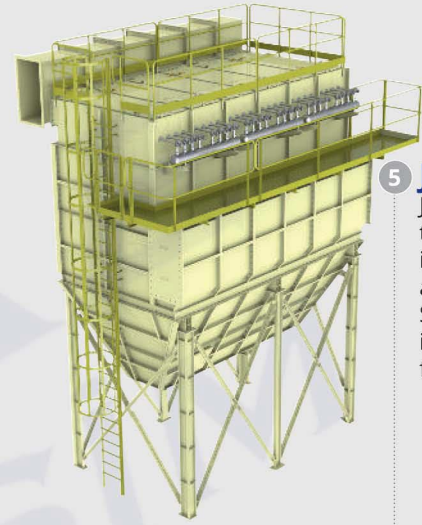
Vibration screening machine include two screen desks in the inside. The upper screen regards as decomposed paper whose material size is greater than 8 mm grain size. Following these papers are pulped by the Pulper again in the plasterboard facility, they are given as a contribution for the plasterboard. The lower screen's mesh size is 2,35 mm and the material which has smaller particle than this size is accepted as final product and they are transferred to a conveyer with the help of the screw conveyor.

The products have the grain size between 2,35 with 8 mm. collected in the filter hopper by the filter which has 6000 m³/h capacity, by adjusting the transmission rate of the material under favour of the rotary feeder that located under the filter, materials are sent to the belt conveyor and then beater plate mill again. Materials are re-added into the system after the grinding. Midmaterial recycling continuously repeated.



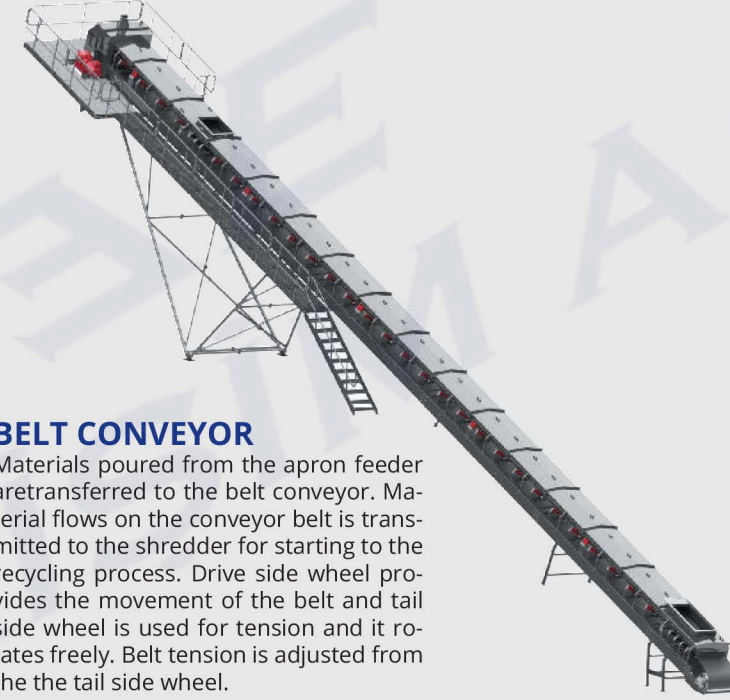
SCREW CONVEYOR 8

After the beater plate mill, the material flows through into the screw conveyor by the help of the material outlet port. The material in the screw conveyor conveys to the vibration screening machine. Because the gap between helicoids and the body is small, conveying may be efficient and easy. Material is conveyed by the helices. Thus, conveying material exits from the material outlet port and poured to the vibration screening machine.



5 JET PULSE FILTER

Jet pulse filter is designed for collecting the dust as a result of material conveying and handling activities. The filter bags are cleaned by ejecting pressured air. Sprayed air and the dust materials flow in the dust outlet port and exits from the filter by the help of the discharge system.



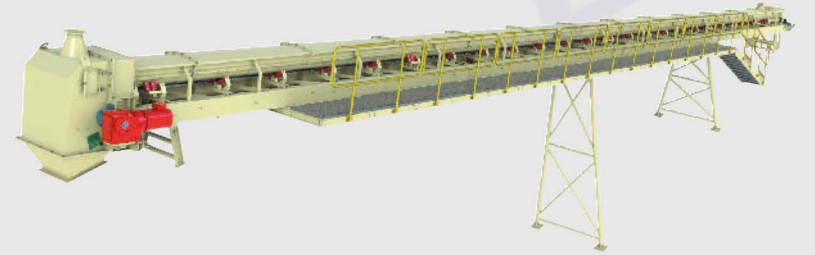
4 BELT CONVEYOR

Materials poured from the apron feeder are transferred to the belt conveyor. Material flows on the conveyor belt is transmitted to the shredder for starting to the recycling process. Drive side wheel provides the movement of the belt and tail side wheel is used for tension and it rotates freely. Belt tension is adjusted from the tail side wheel.



2 BELT CONVEYOR

Materials poured from the shredder are transferred to the belt conveyor. Material flows on the conveyor belt from the tension side and conveyed to the beater plate mill with the material outlet port. Drum at the drive side provides movement of the belt and drum at the tail side is used for tension and it rotates freely. Belt tension is adjusted from the drum located on the tail side.



ROTARY VALVE 10

Rotary valve is used at the material inlet and the outlet ports of the silos, hoppers, vertical and horizontal conveyors with the intent of the controlled feeding and discharging. Material inside of the body from the rotary valve's material inlet port and fills the channels on the rotor. The material moves towards exit of the rotary valve which is at the bottom of main body by rotation of the rotor.

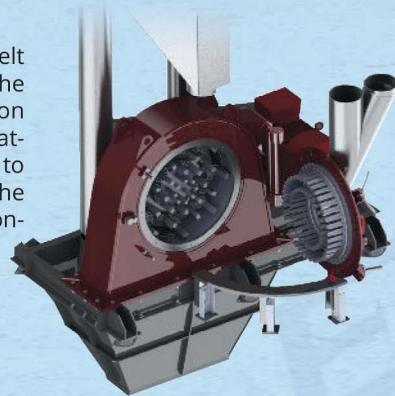


9 DEDUSTING UNIT

This unit composed of a filter, fan and rotary valve provides dedusting of the system. The working principles and the technical specification of the dedusting system equipments explained in this part of the manual.

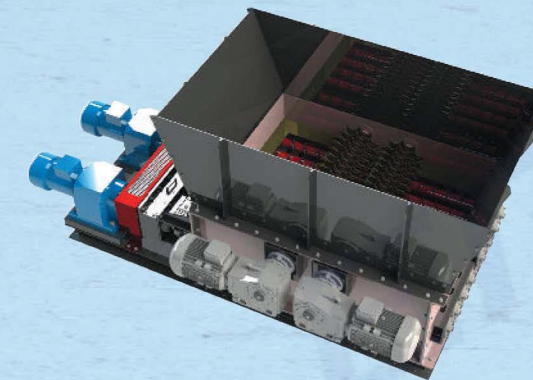
BEATER PLATE MILL 6

The material will be beat from the belt conveyor; sent on the rotor from the feeding unit which is tightly mounted on the machine cover. The material beat between the hammers connected to the rotor and the fixed hammers on the body. And then poured to the belt conveyor.



SHREDDER 3

Waste dry and wet plasterboard materials are firstly splitted by the shredder in the recycling line. The materials will be feeded to the shredder should be dry. The dimensions of the material processed in the shredder about 5-20 cm². The shredding process occurs with two shredder wheels located on the machine. Main gearmotor and 8 spirals moving in opposite direction, push the material toward shredder wheels. By this means, materials trapped between the wheels and they leave from the material outlet port by shredding.



APRON FEEDER 1

Apron feeder is used in feeding waste dry and wet plasterboard materials to the recycling line. Apron Feeder comprises of wear resistant palettes that have been mounted onto the chain. The subject chains are moved by the chain gears. Whereas the chain gears are driven through the speed reducer and the gear assembly. Apron feeder compose of the bin, feeder body and the carrier chassis. This is provide to regular material feeding by means of the machine bin. The supplied material can be transmitted to the system for recycling.

