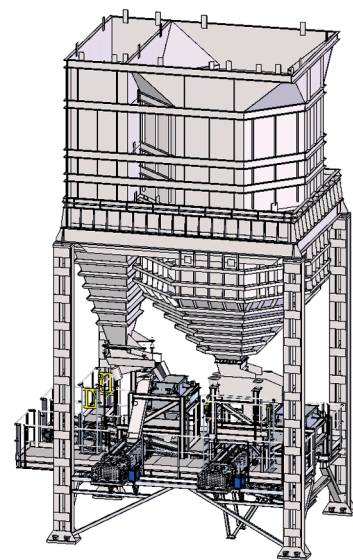




MIXTURE PREPARATION SYSTEM





Application

The feed mixture conditioning and storage system is responsible for the process of ensuring the appropriate amount of mix components and its preparation and feeding to the bucket of the inclined conveyor or other transport system. It is a standard part of a lime kiln plant or battery of kilns. The limestone and anthracite bunker is design to collect raw materials. The conditioning of a portion of the feed mixture with the desired parameters is a three-stage process, carried out in the feed mixture conditioning system.

Design and operating principles

The feed mixture preparation and storage system can be offered as a complete system as well as independently. In case there is an existing infrastructure installed we adapt our system to the current situation.

Lime stone and anthracite (coke) bunker

It consists of two rectangular chambers equipped in the lower part with funnels terminated with connection pipes. The whole tank is a steel structure built on a supporting frame staying on four pillars. As a standard, the capacity of the tank provides a 24-hour supply of raw materials. Its size is selected depending on the working capacity of the lime kiln. The larger chamber is used to store limestone. Coke or anthracite is loaded into the smaller chamber. Radar sensors are used to measure the level of material in each of the chambers. Materials are separated into individual chambers using a reversible conveyor or a two-way divider. The tank of raw materials is delivered with a staircase enabling access to the upper part of the tank and with a platform enabling the operation of devices supplying raw materials to the tank.

Feed mixture conditioning system

The system installed under the lime stone and anthracite bunker consists of four vibrating feeders, two sieves belt conveyors, two weighing systems and a mix conveyor. In the first stage, with the use of vibrating feeders equipped with grates, we remove a small fraction from the raw material, so that only the mixture with the appropriate grain size is delivered to the furnace. The material passing through the grate is discharged to the collection point using two belt conveyors. A larger fraction of each material is fed into weighing chambers where weighing cells are mounted. In the next step, the system receives information to fill the lime kiln with a feed mixture. A belt conveyor of the mixture is started, on which limestone and solid fuel are dosed in such a way as to obtain an even mixing and an appropriate percentage of components. Dosing takes place with the use of vibrating feeders, which are able to adjust the flow rate. The loading cycle ends when the mixture with the assumed weight in the operating system is loaded into the bucket of the inclined conveyor.

At the customer's request, it is possible to install an intermediate hopper, whose task is to speed up the process of loading the mixture into the inclined conveyor bucket and thus increase the efficiency of the process of preparing and loading the mixture into the lime kiln. All devices are equipped with the necessary measuring and control elements. The mixture preparation installation is offered together with the supporting structure and platforms providing access to service points.

Technical specification

DEVICE	–	Stone chamber	Anthracite (Coke) chamber
EFFICIENCY	m ³ /h	180	120
FEEDER TYPE	–	vibratory	
POWER	kW	2x 1,5	2x 1,5
TYPE OF WEIGHING SENSOR	–	tensometric	
VOLUME	kg	3 000	1 000