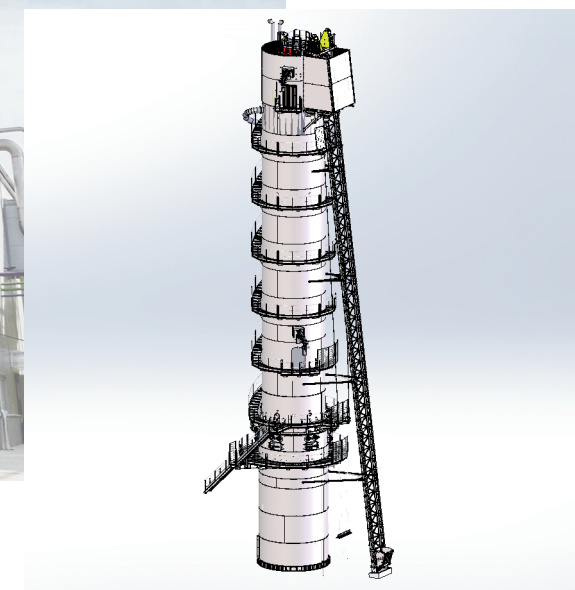
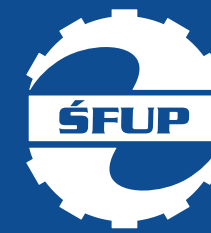


Technical specification

TYPE		underpressure	underpressure	with a blow	with a blow	with a blow	with a blow	with a blow
SIZE	m ³	65	100	150	200	250	300	400
INNER DIAMETER	mm	2260	2600	2800	3300	3570	3910	4300
TOTAL HEIGHT	m	36,6	39	44	44	44	45	49
WORKING HEIGHT	m	15	18	23	23	23	24	27
NUMBER OF VIBRATORS/CARRIAGES		3	4	4	4	4	4	6
CaO PRODUCTION	t/24h	35	55	80	60 – 110	80 – 130	120 – 160	150 – 220
CO ₂ CONTENT IN THE EXHAUST	%	35	35	35	35 – 38	35 – 38	35 – 38	35 – 38
GAS EXHAUST TEMPERATURE	°C	60 – 120						
LIME TEMPERATURE	°C	max 60						



LIME KILN

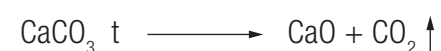


Application

The lime kiln is used for the production of quicklime called burnt lime. Solid products of calcination process are widely used in many industries such as sugar, fertilizer chemical industry and metallurgy. Depending on the sector, different parameters of limestone processing are to be applied. Some industries also use the second product coming from the kiln which is exhaust gas rich in carbon dioxide. The content of 35 ÷ 40% CO₂ has an effect that in the sugar industry exhaust gas is used in the process of saturation of sugar juice.

Design and principles of operation

The raw material for quicklime production is limestone containing calcium carbonate (CaCO₃). Under the heat influence, calcium carbonate decomposes into calcium oxide and carbon dioxide:



Heat in the process chamber of a solid fuel-fired lime kiln is generated by the combustion of coke or anthracite, which is fed into the kiln in the appropriate proportion together with limestone. The mixture is fed from the top. The air is injected from the bottom in the counterflow. The produced quicklime moves towards the lower parts of the lime kiln being cooled in contact with the process air. Above the zone where the calcination process takes place, there is a heating zone where the limestone heats up in contact with the hot exhaust gases. The temperature in the firing zone is maintained within the range of 800°C to 1250°C

The shaft type lime kiln is cylindrical construction. Its outer shell consists of the base of the kiln with the lime bunker, the portal with the lime emptying system and the process chamber with the top section. The standard equipment of the kiln is an inclined conveyor, along which the bucket with the fuel mixture moves. The movement of the bucket is carried out by the winch. On the top section of the lime kiln there is an upper closure installed. It is responsible for loading the mixture into the process chamber. The shaft type lime kilns are designed in two technologies: underpressure and positive pressure which is equipped with the process air blasting system. Our offer includes different sizes between 65 and 400 m³ of the working volume. We also offer batteries of kilns. Optionally lime kilns can be equipped with a dedusting system in the area of lime collection.

Base of the kiln

It is the supporting part of the lime kiln. Inside the base, there is a lime bunker installed in which the reserve of quicklime is stored. To the bottom flange of the lime bunker there a sluice system connected. Its function is to ensure tightness of the lime kiln and also a proper dosing of quicklime to the downstream equipment. An easy access to all service points is provided by the platform installed inside the base.

Portal with lime emptying system

A portal stays on the base of the kiln. It has two basic functions. The lime emptying system is responsible for control of the capacity of the kiln. The emptying process is carried out by a set of vibrators driven by motors or emptying carriages controlled by a hydraulic aggregate. The second function of the portal is performed by a cone, used to distribute the air transported by an air fan into the process chamber of the kiln. By controlling the efficiency of the fan we can adjust the pressure and the amount of air involved in the calcination process, including the location of the firing zone.

Process chamber

Inside this part of the kiln, the process of limestone calcination takes place. In order to monitor the process parameters, temperature sensors are installed at various levels of the chamber. They indicate where the firing zone in the kiln is located and also provide information about the current temperature of the calcination process. The inside of the process chamber is lined with a refractory to minimize heat losses and protect the outer shell of the kiln against overheating.

Noise shield

In order to minimize the negative effect to the surroundings, a noise shield is installed on the top section of the kiln. It is made of materials designed to partially absorb the noise generated during the loading process of the mixture into the kiln. It is also a barrier against wind gusts, which improves the comfort and safety of work on the top of the kiln.

The noise shield is a self-supporting structure. Optionally, a winch to transport small equipment to the top of the kiln can be mounted to the structure of the noise shield.

