LIME DOSING SYSTEMS SDD

Lime storage and dosing Plants

MACHINE DESCRIPTION

The lime dosing system is used for the lime storage; the system can be combined to:
- A DISSOLVING SYSTEM.
- A MIXING SYSTEM (SYSTEMS).

The first one is used to dissolve the lime to obtain milk lime. The second one is used, instead, for the dehydration and/or conditioning of sludge, obtaining stabilised material. To identify the function, here we specify the four sections that compose itself. That four sections are:
1. STORAGE SECTION.
2. EXTRACTION SECTION.
3. DOSING SECTION.
4. LIME APPLICATION.

STORAGE SECTION

Storage section represents the first section of the process. The lime is pneumatically loaded into the storage section. The tank truck which delivers the lime shall not be at a distance higher than 4 meters from the loading point. Looking at the components it is possible to identify the path of the lime. Lime enters the silo through the quick coupling and the loading pipe.
The air used for the conveying is discharged through the filter installed on top of the silo. The filter type depends on the lime and the customers' needs.

Generally it is used a cartridge filter where number, dimensions and type of cartridges may vary upon the lime capacity and the layout. As per the **CE** norms the silo is fitted with all the safety devices: vertical shipladder with cage and handrail on the silo top. On the silo roof is installed the safety valve necessary to limit the pressure inside the silo during the filling operations and while emptying. The silo is fitted with 3 to 5 level indicators or an ultrasonic level meter. Silo shall be refilled when the level reaches the "**empty**" level. The tanker truck that delivers the lime shall have a compressor to provide the necessary air to convey the lime into the silo (**maximum working pressure of the conveying system is 1 bar**). The loading pipe shall not be damaged and must be loaded in such a way that there are no bends formed. Start loading the lime paying attention to stop filling as soon as the Full level is reached. During such operation the filter backwash system will be activated by the limit switch installed at the quick coupling. Once completed loading the lime the cover must be replaced to close the loading pipe.

EXTRACTION SECTION

The next section is the extraction. Depending on customer's needs it can be done eitherway by a vibrating bin activator or a pneumatic fluidization system complete with control board. The bin activator is installed at the silo hopper outlet, while the fluidization is composed of fluidizing pads installed inside the silo hopper. Both systems are aimed to increase the lime flowability. Installed at the outlet of either systems is located the manually actuated slide gate. During normal operation the gate is open. Gate shall be closed during loading or for any maintenance purpose. The status of the gate is shown by the limit switches installed inside the gate and their corresponding bulbs fitted on the control cabinet.

DOSING SECTION

The third section is the lime feeding and dosing which is done by the lime dosing screw conveyor. The dosing screw allows to achieve high dosing accuracy. Dosing is volumetric type. The screw can be installed at an angle between 0 and 40 deg. The drive can be eitherway installed at the loading or at the discharge end. For fine dosing or small feed rates a rotary valve is installed instead.

LIME APPLICATION

The last section does the lime application. Depending on the system configuration it can be:
1. DISSOLVER.
2. MIXER.

At the present the lime can be discharged into a dissolver to produce lime milk or in mixer where it is mixed together with the sludge to be conditioned. The number and type of components may vary depending on the customer needs. **ATTENTION: The use of quick lime (CaO) is not compatible with the lime milk production.**

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LIME STORING AND DOSING PLANT ACCESSORIES

1. BLOWER: It is used in compliance with the fluidizing system. The machine supplies to the plant the air required for lime fluidization in the silo.
It works continuously, with started plant. It should be positioned under the silo near the fluidizing panel.

2. LEVEL DETECTING PROBE FOR CONDUCTIVE LIQUIDS or ULTRASONIC SENSOR: It is an electrode designed for three probes and complete with terminal board guard. It is supplied mounted on lime milk dissolver complete with AISI 304 rods with adjustable length according to the capacity dissolver. On request, another electrode holder can be mounted to check the middle level in dissolver. That has to be connected to different relay. Alternatively an ultrasonic sensor can be installed.

3. ROTARY VALVE: The rotary gate is an accessory mounted between slade valve and dosing screw. The rotary gate will dose the lime instead of the dosing screw which will only convey the lime; the present rotary gate it is complete of drive unit. This accessory is used for small dosages of lime.

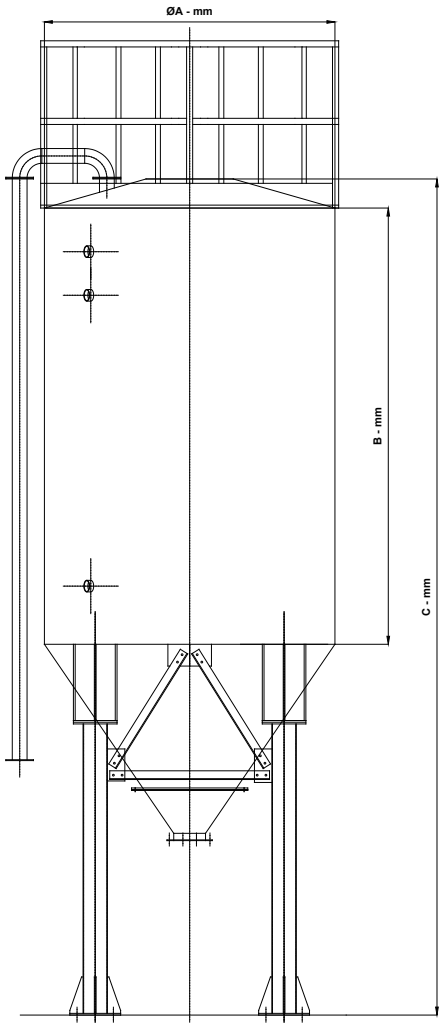
4. CONTROL CABINET: Lime dosing systems are generally supplied with our control cabinet as our experience has allowed us to develop the right handling and dosing expertise to provide the control with the optimized logic. Controls can be supplied with Ethernet interface and GSM remote control.

Configuration available:
1. SDD for QUICK LIME
2. SDD for Hydrated Lime
3. SDD for additives

R.E.M. SDD silos can be equipped with the following accessories:

- control cabinet
- ATEX or UL NEMA 7 EX-proof version
- Air compressor
- Electrically actuated valves
- Safety release valve
- Vibrating Dust filter

n.b.: the manufacturer may modify some dimensions or sizes without prior information



SDD MODELS	SDD10	SDD15	SDD16	SDD22	SDD29	SDD36	SDD43	SDD50/24	SDD50/28	SDD57	SDD60	SDD70
NOMINAL CAPACITY - m³/h	10	15	16	22	29	36	43	50	50	57	60	70
THEORETICAL MAX. CAPACITY - m³/h	11.47	16.18	16.18	23.78	30.56	37.34	44.12	51.69	51.69	58.84	60.81	70.89
NET MAXIMUM CAPACITY - m³/h	9.05	13.76	13.76	20.28	27.06	33.84	40.62	46.81	46.81	45.01	56.03	66.03
MEDIUM CAPACITY - m³/h	6.53	8.88	8.88	13.27	16.66	20.05	23.44	28.06	28.06	32.67	32.67	43.17
NET MINIMUM CAPACITY - m³/h	3.39	3.39	3.39	5.36	5.36	5.36	5.36	8.09	8.09	8.09	8.09	9.64

SDD MODELS	SDD10	SDD15	SDD16	SDD22	SDD29	SDD36	SDD43	SDD50/24	SDD50/28	SDD57	SDD60	SDD70
ØA - mm SILO DIAMETER	2000	2400	2000	2400	2400	2400	2400	2400	2800	2400	2800	2800
B - mm CYLINDER HEIGHT	3000	3000	4500	4500	6000	7500	9000	10500	7500	12000	9000	10500
B - mm TOTAL HEIGHT	6480	6820	7980	8320	9820	11320	12820	14320	11720	15820	13220	14700

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