

# PRE-ENGINEERED QUICKLIME SYSTEM (BOX)



## INTEGRATED SILO, FEED, AND DUST COLLECTION SYSTEM IN A BOX

Our quicklime feed system provides an integrated solution for receiving, storing, feeding, slaking and delivering up to 2,500 lb/h of quicklime from truck to the point of application. The three-piece modular design includes a 12 ft. storage silo with a bin vent filter, a ZMI Portec detention slaker module on the upper level, and a slurry storage tank module on the lower level under the lime silo.

Carmeuse Systems assembles, installs, pipes, wires, and integrates all components/equipment through an automated control panel at our facility prior to shipment. The two modular boxes are shipped pre-insulated and upright. The upper storage silo module is shipped separately for simple connection at site.

### APPLICATIONS & USE

#### Typical Bulk Materials Processed

- Quicklime

#### Typical Applications

- Water Treatment
- Chemical Processing
- Mining
- Oil and Gas
- Pulp and Paper / Precipitated Calcium Carbonate (PCC)

Applicability can vary by system make and model. For an evaluation, contact us: [salesinquiries@carmeuse.com](mailto:salesinquiries@carmeuse.com)

### FEATURES

Compact "system-in-a box"

Fully engineered and integrated silo, feed, and dust collection system

Pre-assembled, piped, wired and factory tested

Three-piece plug-and-play' design

12' square (box) footprint

Single-piece welded silo construction (12'-0" diameter)

Low-profile, top access, bin vent filter mounted on roof

Skirted interior lighting, ventilation, heating and insulation

Complete automatic control system with PLC

ZMI Portec Detention Slaker

Lower equipment modules shipped up-right

### BENEFITS

Saves money and decreases equipment footprint enhancing plant utilization

Receives, stores, feeds, and delivers quicklime to application point, optimizing material handling

Reduces installation costs and time ensuring a seamless start-up

Minimizes the amount of onsite assembly required saving on labor costs

Requires no pilot car to transport with 25% more space than conventional 12' silos

Ships preassembled limiting the amount of onsite construction needed

Minimizes dust emissions improving air quality and employee safety

Use in cold temperature regions provides flexibility in using similar systems across multiple locations

Improves productivity limiting downtime adding value to the bottom line

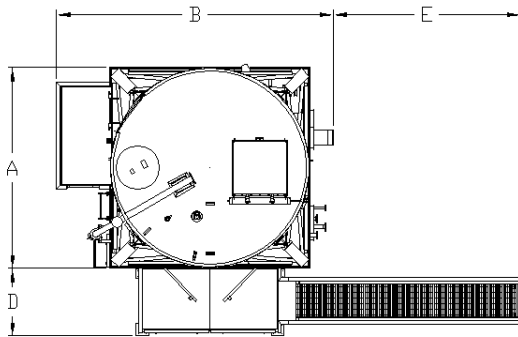
Produces a highly reactive lime slurry maximizing lime usage

Reduces the chance for damage during shipment for faster installation and start-up

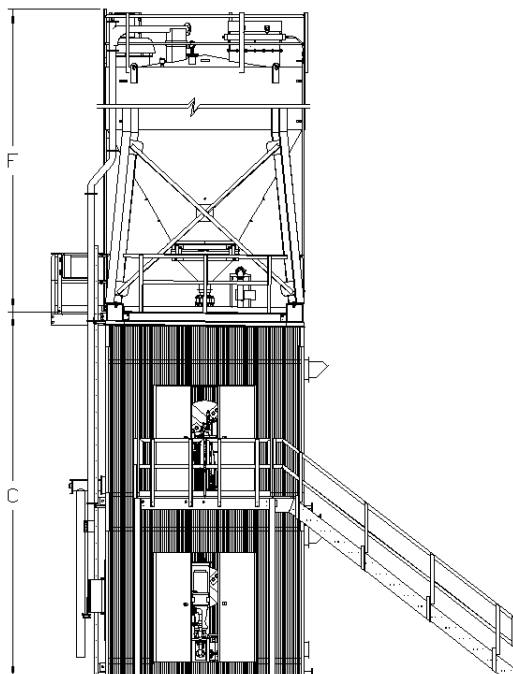
## AVAILABILITY

	A (in. [mm])		B (in. [mm])		C (in. [mm])		D (in. [mm])	
<b>Slaking System</b>	144	[3658]	200	[5080]	265 1/2	[6744]	48 1/2	[1232]

### PLAN VIEW



### ELEVATION VIEW



### BASIC SILO COMPONENTS

- Storage Silo c/w Truck Fill Line and Pressure/Vacuum Relief Manway
- OSHA Ladder c/w Safety Climbing Protection System
- Bin Vent Filter
- Fluidization System
- Bin Activator

### ROOF MODULE

- Isolation Knife Gate
- Volumetric Feeder
- Forced Draft Wet Scrubber Blower

### UPPER MODULE

- Isolation Knife Gate
- ZMI Portec Detention Slaker with Wetting Bowl
- Forced Draft Wet Scrubber
- Vibratory Grit Screen
- Lighting, Ventilation, Heating and Insulation
- Motor Starter Panel

### LOWER MODULE

- Storage Tank
- Storage Tank Agitator
- Slurry Pumps
- Piping Spools for Air, Water and Slurry Tie-Ins
- Lighting, Ventilation, Heating and Insulation
- Main PLC Control Panel
- Silo Fill Panel
- Motor Starter Panel

**NOTE:** Information / dimensions shown are for reference only and is subject to change based on final design and applications.

E (in. [mm])	F (in. [mm])									
	Silo Storage Capacity									
	2800 ft <sup>3</sup> [79.3 m <sup>3</sup> ]		3600 ft <sup>3</sup> [101.9 m <sup>3</sup> ]		4200 ft <sup>3</sup> [118.9 m <sup>3</sup> ]		4800 ft <sup>3</sup> [130.3 m <sup>3</sup> ]			
135 1/2	[3442]	465	[11811]	501	[12726]	537	[13640]	573	[14555]	

## SPECIFICATIONS

- **Silo Capacity:** 2,800 to 4,800 ft<sup>3</sup> [79 to 136 m<sup>3</sup>]
- **Throughput:** 300 to 2,500 lb/h [136 to 1,134 kg/h] of quicklime @ 56 lb/ft<sup>3</sup> [897 kg/m<sup>3</sup>]
- **Slurry Concentration:** 5 to 20% by weight
- **Feeder:** Operates at variable speed for batch or continuous operation
- **Storage Tank Capacity:** 587 USgal [2.2 m<sup>3</sup>]
- **Dust Suppression System:** 113 CFM [192 m<sup>3</sup>/h] at 0.28 in [7 mm] w.c.
- **Slurry Pumps:** 50 USgpm [11.4 m<sup>3</sup>/h] at 50 ft [15.2 m] TDH
- **Electrical and Instrumentation Approval:** CSA, FM, cUL<sub>US</sub>, CE Marking
- **Process / Utility Requirements:**
  - Slaking Water: 19.5 to 43.6 USgpm [4.4 to 9.9 m<sup>3</sup>/h] at 40 psig [276 kPag]
  - Electrical Load: 38 kW (3Ø) and 7.2 kW (1Ø)
  - Instrument Air: Dry, oil-free, 67 CFM [114 m<sup>3</sup>/h] at 100 psig [690 kPag]

## OPTIONS

- Upgrade primary equipment's material of construction to 304 or 316 Stainless Steel
- Inline pre-heater - to preheat slaking water to promote optimal slaking
- Grit removal screw - to transfer grits to nearby collection/disposal bin by others
- Air compressor module - to supply compressed air to equipment/instrument in the systems

## MATERIAL OF CONSTRUCTION

- **Storage Silo:**
  - Material: Carbon Steel
  - Surface Preparation: SSPC SP6
  - Exterior:
    - Primer: Sierra Paint, solvent based enamel
    - Finish: Sierra Paint solvent based enamel, 2-3 mils DFT
    - Finish Color: RAL 7038 Grey or RAL 9010 White
- **Slaker, Slurry Tank and Modular Structural Box:**
  - Material: Carbon Steel
  - Surface Preparation: SSPC SP6
  - Exterior:
    - Primer: Carboline Carboguard 635 VOC, 3-5 mils DFT
    - Finish: Carboline Carboxane 2000, 5-7 mils DFT
    - Finish Color: RAL 7012 Basalt Grey or RAL 9003 White
- **Tank Mixer:**
  - Material (shaft and impeller): 304 Stainless Steel
- **Slurry Pump:**
  - Material (casing and impeller): Cast Iron with High Chrome
- **Piping:**
  - Instrument Air: Galvanized Carbon Steel (interior), 304/304L Stainless Steel (exterior)
  - Water Piping: Galvanized Carbon Steel
  - Slurry: Chlorinated Polyvinyl Chloride (CPVC)



## YOUR LIME HANDLING EXPERTS™

Carmeuse Systems is your trusted partner for designing, integrating, and upgrading lime handling systems. As part of the Carmeuse Group, our teams have unrivaled expertise in understanding the role of lime handling equipment within your operation. From selecting the appropriate raw material, to system engineering, enhancements, and maintenance, our teams provide End-2-End support and guidance. We make complex projects seem simple and help our customers every step of the way. Let's start a conversation, contact us at:

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