PRE-ENGINEERED

QUICKLIME SYSTEM (BOX)

CARMEUSE SYSTEMS

DATA SHEET

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 four-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

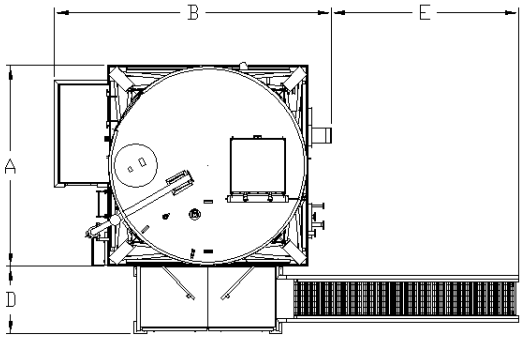
YOUR **LIME HANDLING** EXPERTS™

FEATURES	BENEFITS
Compact "system-in-a box"	Saves money and decreases equipment footprint enhancing plant utilization
Fully engineered and integrated silo, feed, and dust collection system	Receives, stores, feeds, and delivers quicklime to application point, optimizing material handling
Pre-assembled, piped, wired and factory tested	Reduces installation costs and time ensuring a seamless start-up
Four-piece plug-and-play design	Minimizes the amount of onsite assembly required saving on labor costs
12' square (box) footprint	Requires no pilot car to transport with 25% more space than conventional 12' silos
Single-piece welded silo construction (12'-0" diameter)	Ships preassembled limiting the amount of onsite construction needed
Low-profile, top access, bin vent filter mounted on roof	Minimizes dust emissions improving air quality and employee safety
Skirted interior lighting, ventilation, heating and insulation	Use in cold temperature regions provides flexibility in using similar systems across multiple locations
Complete automatic control system with PLC	Improves productivity limiting downtime adding value to the bottom line
ZMI Portec Detention Slaker	Produces a highly reactive lime slurry maximizing lime usage
Lower equipment modules shipped up-right	Reduces the chance for damage during shipment for faster installation and start-up

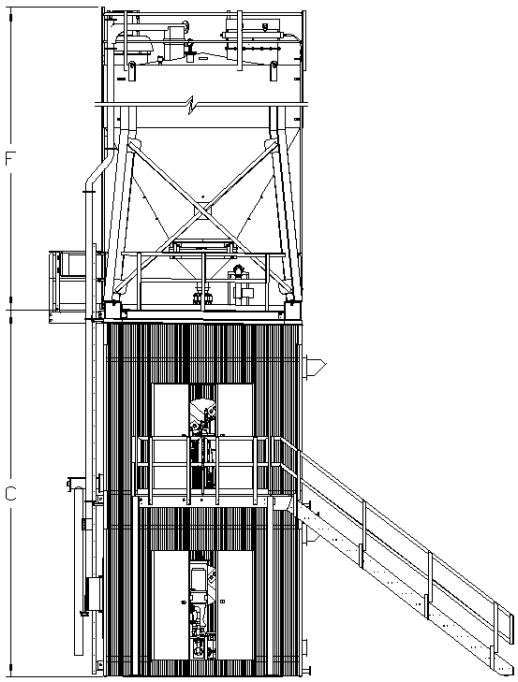
AVAILABILITY

	A (in. [mm])		B (in. [mm])		C (in. [mm])		D (in. [mm])	
Slaking System	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 ft³ [79.3 m³]		3600 ft³ [101.9 m³]		4200 ft³ [118.9 m³]		4800 ft³ [130.3 m³]	
135 $^{1}/_{2}$	[3442]	465	[11811]	501	[12726]	537	[13640]	573	[14555]

SPECIFICATIONS

- **Silo Capacity:** 2,800 to 4,800 ft³ [79 to 136 m³]
- **Throughput:** 300 to 2,500 lb/h [136 to 1,134 kg/h] of quicklime @ 56 lb/ft³ [897 kg/m³]
- **Slurry Concentration:** 5 to 20% by weight
- **Feeder:** Operates at variable speed for batch or continuous operation
- **Storage Tank Capacity:** 587 USgal [2.2 m³]
- **Dust Suppression System:** 113 CFM [192 m³/h] at 0.28 in [7 mm] w.c.
- **Slurry Pumps:** 50 USgpm [11.4 m³/h] at 50 ft [15.2 m] TDH
- **Electrical and Instrumentation Approval:** CSA, FM, $_{C}UL_{US}$, CE Marking
- **Process / Utility Requirements:**
  - Slaking Water: 19.5 to 43.6 USgpm [4.4 to 9.9 m³/h] at 40 psig [276 kPag]
  - Electrical Load: 38 kW (3Ø) and 7.2 kW (1Ø)
  - Instrument Air: Dry, oil-free, 67 CFM [114 m³/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)

CARMEUSE
SYSTEMS

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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