



The Worlds Only Commercially Available, High Performance & Sustainable Alternative To Traditional Portland Cement

Architect Overview





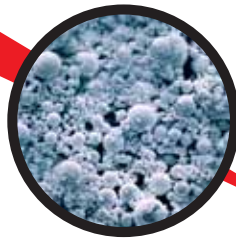
# Same Process, Same Equipment, Similar Costs



Coal

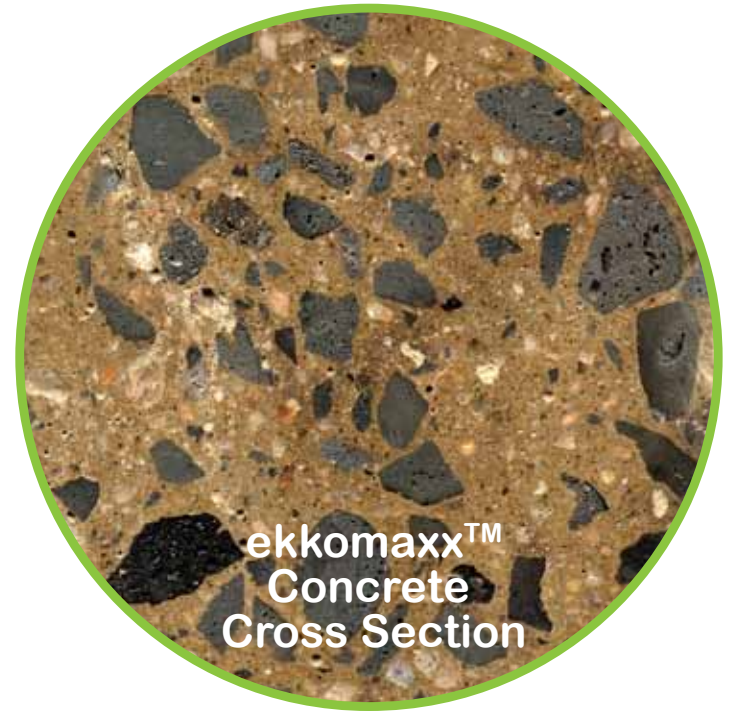
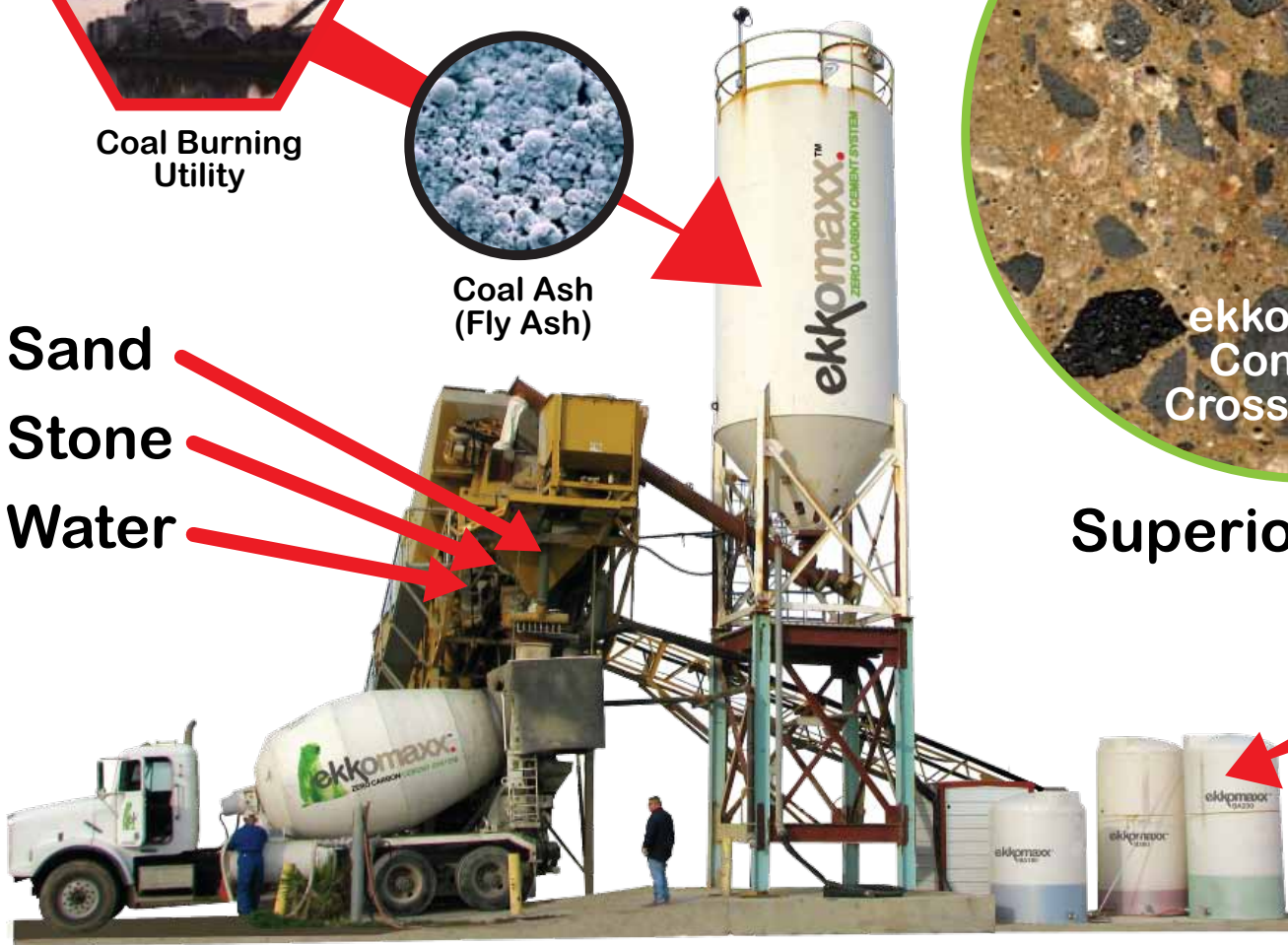


Coal Burning Utility



Coal Ash (Fly Ash)

- Sand
- Stone
- Water



ekkomaxx™  
Concrete  
Cross Section

## Superior Concrete

CERATECH  
Proprietary  
Liquid  
Activators





# Technology Overview



## 1994

Combine Coal Ash With Magnesium Phosphate To Produce A Ceramic Cement



## 2001

Commercialized Family of Ultra High Performance Concrete Repair Products



## 2006

Transition To All Coal Ash Bulk Cement Technology



## 2010

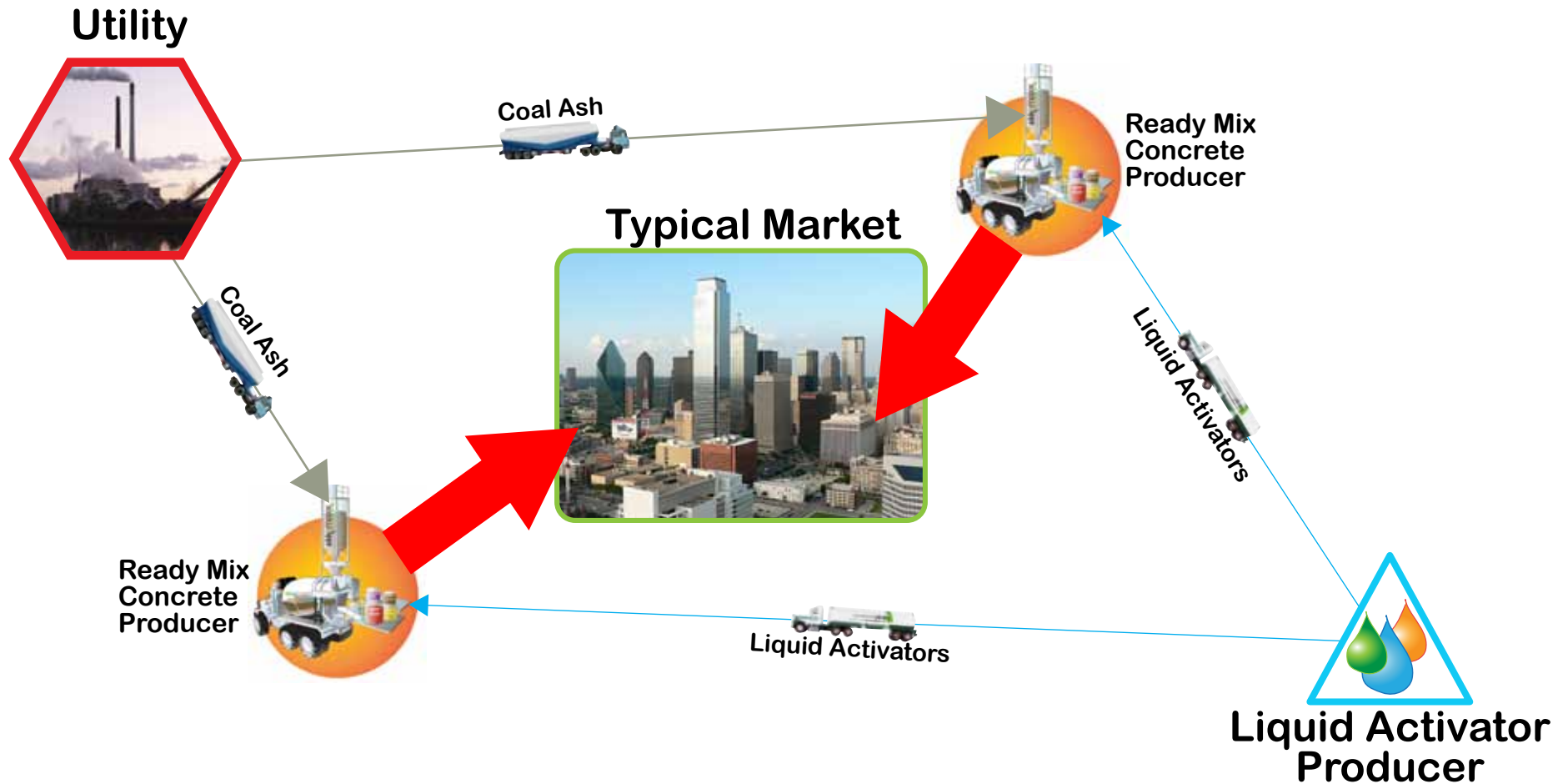
Formed Strategic Partnerships With Ash Sources & Ready Mix Concrete Producers.

Entered Bulk Cement Market





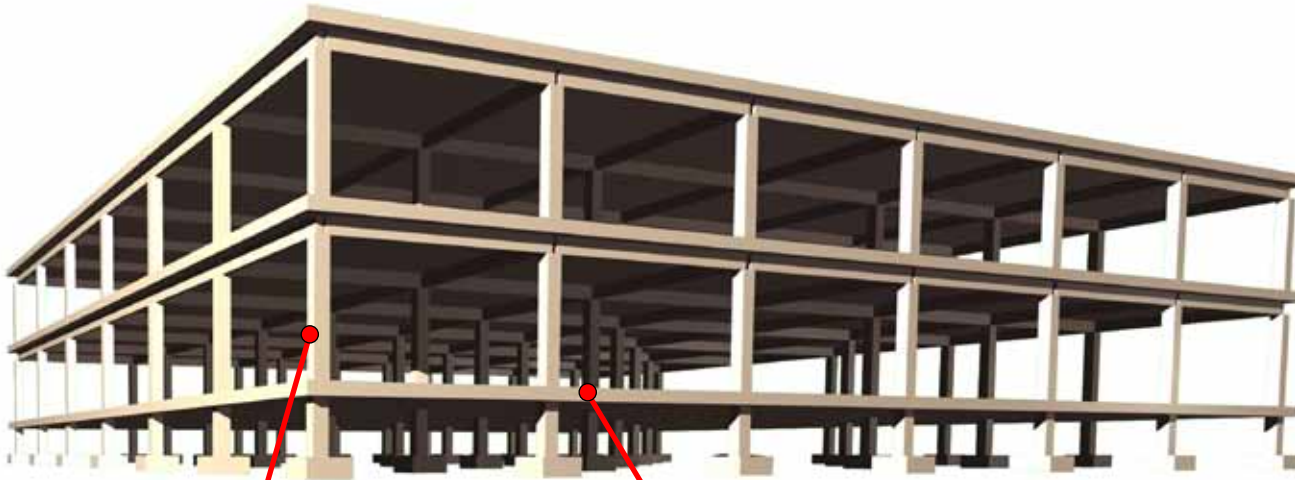
# Typical Distribution Model



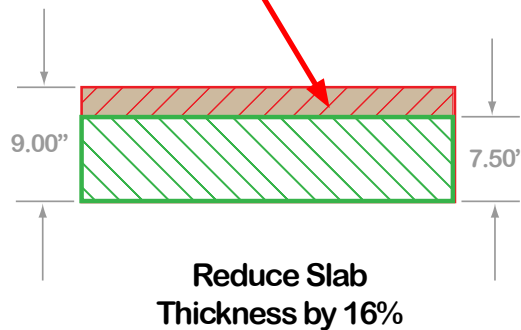
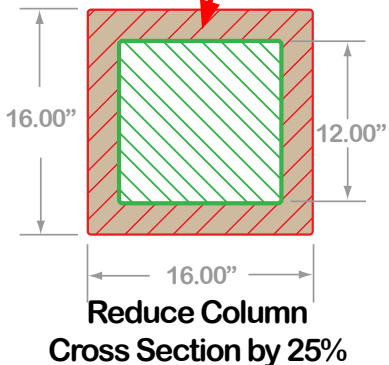


# Advantages

Typical 50,000 Sq. Ft. 3 story Commercial Building



- 239 Cu. Yds. LESS Concrete
- 37 Tons LESS Rebar
- 66 Sq. Ft. MORE Floor Space
- 353 Tons LESS CO<sub>2</sub>
- 412 Tons of Coal Ash Diverted From Landfill



Reduce Reinforcing Steel Requirements By 12 - 18%

**! Meets or Exceeds ALL Requisite ASTM Specifications**





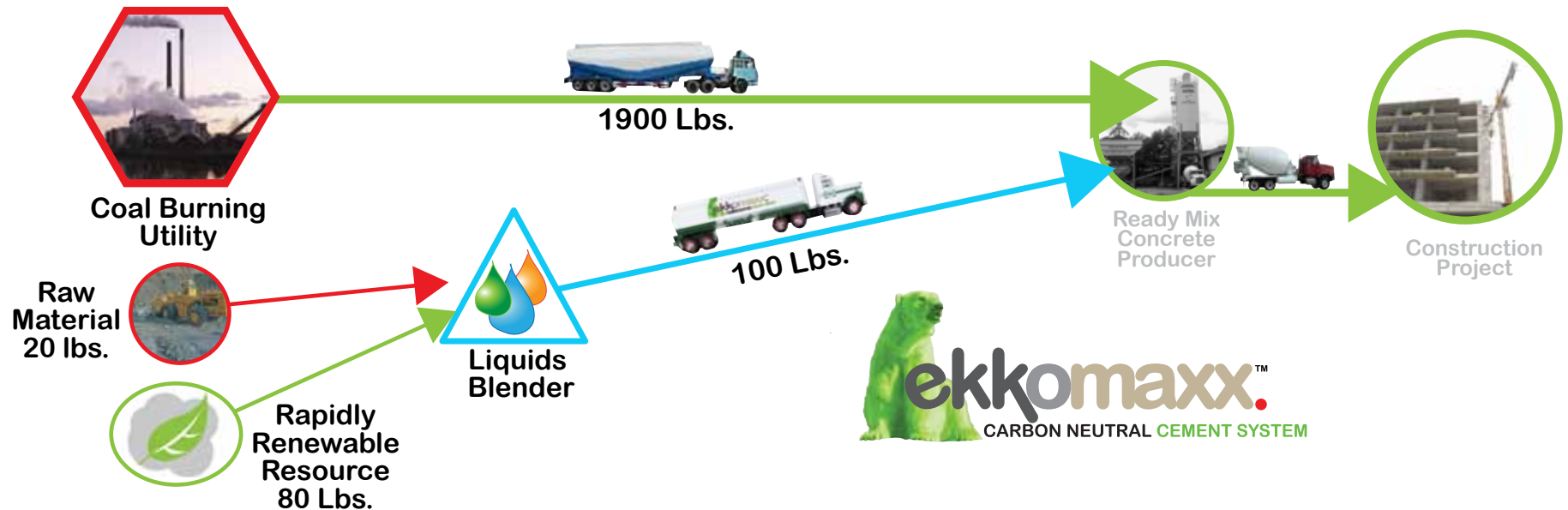
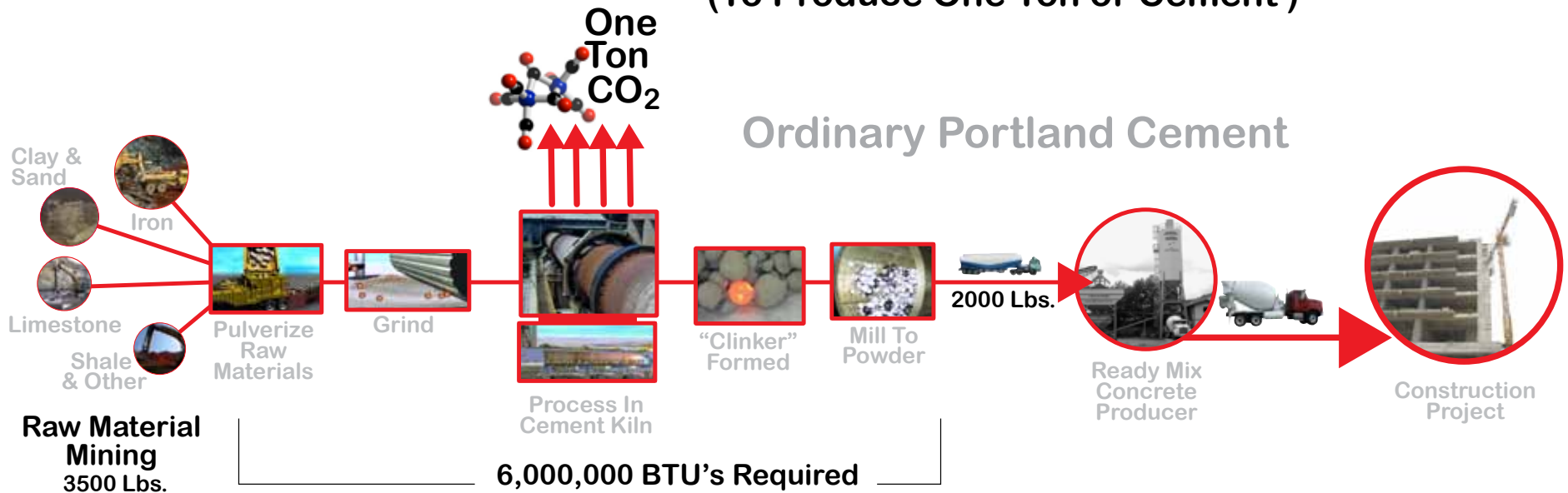
# Concrete Benefits

- Lower Heat of Hydration
- Sulfate Resistant
- Reduced Permeability
- Low Shrinkage
- ASR Mitigation  
! Use Greater Variety of Aggregates Including Waste Glass
- Mild MoE  
! Stable Modulus of Elasticity As Compressive Strengths Increase Over Time
- Improved Early Flexural Strengths
- Rebar Corrosion Resistant



# Cement Manufacturing Process Comparison

## (To Produce One Ton of Cement)





# Sustainability



## Materials Usage




One Ton of Cement



One Cubic Yard of Concrete

(Based on 1/3 ton of cement)

	Portland Cement	ekkomaxx <sup>™</sup> CARBON NEUTRAL CEMENT SYSTEM	Portland Cement	ekkomaxx <sup>™</sup> CARBON NEUTRAL CEMENT SYSTEM
Virgin Resources	3500 lbs.	20 lbs.	667 lbs.	6.7 lbs.
Renewable Resources	0 lbs.	80 lbs.	0 lbs.	26.7 lbs.
Pre-Consumer Waste (Coal Ash)	None	1900 lbs.	200 lbs.	602 lbs.
Landfill Relief (Coal Ash)	None	1900 lbs.	200 lbs.	602 lbs.
Recycled Coarse aggregate (Crushed OPC concrete)	NA	NA	Cannot Use	50%
Recycled Fine Aggregate (Pulverized consumer waste glass)	NA	NA	Cannot Use	50%
Post Consumer Waste (Crushed glass as an aggregate)	NA	NA	Cannot Use	Yes
Crude Oil	55 gallons	0 gallons	0 gallons	0 gallons
Total Energy Req'd.	6 M BTUs	0 BTUs	1.7 M BTUs	0 BTUs
 Total CO <sub>2</sub> Production	2000 lbs.	12 lbs.	667 lbs.	84 lbs.



**LEED**



**! The Use of ekkomaxx™ Cement May Contribute To The Awarding of The Following LEED Points By The USGBC**

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- **Innovation In Design**
- **Rapidly Renewable Materials**
- **Recycled Content**
- **Materials Reuse**
- **Construction Waste Management**



# Project - Sulfur Flume Construction





# Project - Rapid Warehouse Construction





# Architectural Components

No ASR Issue ( Alkali Silica Reaction ) Enables Use of Glass As An Aggregate For Decorative Components

