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[Table of Contents 2](#)

[List of Tables & Charts 3](#)

[Study Overview 4](#)

[Sample Text, Table  
& Chart 5](#)

[Sample Profile, Table &  
Forecast 6](#)

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[About Freedonia,  
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Related Studies, 8](#)

# Refractories

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US Industry Study with Forecasts for **2016 & 2021**

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Study #2968 | December 2012 | \$4900 | 242 pages

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## Table of Contents

### EXECUTIVE SUMMARY

### MARKET ENVIRONMENT

General .....	4
Macroeconomic Trends .....	5
Capital Spending/Fixed Investment Trends .....	8
Manufacturing Sector Outlook .....	11
Durable Goods .....	13
Nondurable Goods .....	14
Refractory Technology .....	15
Basic Refractory Properties .....	17
Refractory Shapes & Forms .....	20
Refractory Materials .....	21
Other Technological Developments .....	22
Pricing Trends .....	23
Historical Market Trends .....	26
International Environment .....	29
World Supply & Demand .....	30
Trends in US Foreign Trade .....	34
Imports .....	35
Exports .....	38

### FORMS

General .....	41
Refractory Supply & Demand by Value ..	42
Refractory Supply & Demand by Volume	45
Refractory Bricks & Shapes .....	48
Standard Bricks .....	50
Preformed Shapes .....	53
Monolithic Refractories .....	56
Castables .....	59
Gunning Mixes .....	61
Plastic & Ramming Mixes .....	63
Bonding & Other Mortars .....	65
Other Refractory Forms .....	67

### MATERIALS

General .....	70
Refractory Supply & Demand by Value ..	71
Refractory Supply & Demand by Volume	73
Nonclay Refractory Products .....	76
Magnesite & Chrome .....	80
Zircon & Zirconia .....	83
Extra-High-Alumina .....	86

Silicon Carbide .....	88
Graphite & Carbon .....	90
Ceramic Fibers .....	92
Silica .....	95
Mullite .....	97
Dolomite & Other Nonclay Refractories ..	99
Clay Refractory Products .....	102
High-Alumina .....	106
Fireclay .....	108
Insulating .....	110

### MARKETS

General .....	113
Metals Industries .....	116
Outlook .....	118
Iron & Steel .....	119
Nonferrous Metals .....	121
Metal Casting & Fabrication .....	122
Refractory Market .....	123
Iron & Steel .....	124
Nonferrous Metals .....	129
Metal Casting & Fabrication .....	132
Nonmetallic Mineral	
Processing Industries .....	134
Outlook .....	135
Refractory Market .....	136
Ceramics .....	137
Glass .....	139
Cement, Lime, & Other	
Mineral Processing .....	142
Engineering Contractors .....	145
Nonmanufacturing Refractory Market .....	147
Petroleum & Chemicals .....	149
Other Manufacturing Industries .....	152

### INDUSTRY STRUCTURE

General .....	154
Industry Composition & Restructuring ...	155
Market Share .....	159
Leading Refractory Suppliers .....	160
Significant Raw Material Suppliers .....	164
Product Development & Manufacturing ..	166
Marketing & Distribution .....	170
Mergers & Acquisitions .....	172

### COMPANY PROFILES

Alcoa Incorporated .....	176
Allied Mineral Products .....	177
Almatis GmbH .....	179
Alteo Holding .....	182
AluChem Incorporated .....	183
ANH Refractories .....	184
Asbury Carbons .....	189
BNZ Materials .....	190
CerCo LLC .....	192
Cookson Group .....	194
Corning Incorporated .....	197
Imerys SA .....	199
Lhoist SA .....	205
Luossavaara-Kiirunavaara AB .....	206
Magneco/Metrel Incorporated .....	207
Magnesita Refratários .....	209
Materis Holding Luxembourg .....	211
McDanel Advanced Ceramic Technologies	212
Minerals Technologies .....	213
Morgan Crucible .....	216
Plibrico Company .....	220
Resco Products .....	222
RHI AG 224	
Rio Tinto Group .....	226
Saint-Gobain .....	228
TYK Corporation .....	232
Unifrax I LLC .....	233
Other Companies Mentioned in the Study	236

## List of Tables

### EXECUTIVE SUMMARY

1 Summary Table .....	3
-----------------------	---

### MARKET ENVIRONMENT

1 Macroeconomic Indicators .....	8
2 Nonresidential Fixed Investment .....	11
3 Manufacturers' Shipments .....	13
4 Selected US Manufacturer	
Refractory Pricing .....	25

(continued on following page)

## List of Tables

(continued from previous page)

5 Refractory Market, 2001-2011.....	28
6 US Foreign Trade in Refractories .....	35
7 US Refractory Imports by Source .....	37
8 US Refractory Exports by Destination	40

### FORMS

1 Refractory Supply & Demand by Form in Value Terms .....	44
2 Refractory Supply & Demand by Form in Volume Terms .....	47
3 Refractory Brick & Shape Supply & Demand.....	50
4 Standard Brick Refractory Shipments .	53
5 Preformed Shape Refractory Shipments .....	56
6 Monolithic Refractory Supply & Demand.....	59
7 Castable Refractory Shipments .....	61
8 Gunning Mix Refractory Shipments....	63
9 Plastic & Ramming Mix Refractory Shipments .....	65
10 Bonding & Other Mortar Refractory Shipments .....	67
11 Other Refractory Form Supply & Demand.....	69

### MATERIALS

1 Refractory Supply & Demand by Material in Value Terms.....	72
2 Refractory Supply & Demand by Material in Volume Terms .....	75
3 Nonclay Refractory Supply & Demand.....	78
4 Magnesite & Chrome Refractory Shipments .....	83
5 Zircon & Zirconia Refractory Shipments .....	86
6 Extra-High-Alumina Refractory Shipments .....	88
7 Silicon Carbide Refractory Shipments	90
8 Graphite & Carbon Refractory Shipments .....	92
9 Ceramic Fiber Refractory Shipments ..	95

10 Silica Refractory Shipments .....	97
11 Mullite Refractory Shipments .....	99
12 Dolomite & Other Nonclay Refractory Shipments .....	102
13 Clay Refractory Supply & Demand ...	104
14 High-Alumina Clay Refractory Products .....	107
15 Fireclay Refractory Shipments .....	110
16 Insulating Clay Refractory Products.	112

### MARKETS

1 Refractory Demand by Market.....	115
2 Metals Industry Indicators.....	119
3 Metals Industry Refractory Market...	124
4 Iron & Steel Production Refractory Market.....	125
5 Nonferrous Metal Production Refractory Market.....	132
6 Metal Casting & Fabrication Refractory Market.....	134
7 Nonmetallic Mineral Product Shipments .....	136
8 Nonmetallic Mineral Product Refractory Market.....	137
9 Ceramics Refractory Market.....	139
10 Glass Refractory Market.....	142
11 Cement, Lime, & Other Mineral Processing Refractory Market .....	145
12 Engineering Contractor Refractory Market.....	147
13 Nonmanufacturing Refractory Market.....	149
14 Petroleum & Chemical Refractory Market.....	151
15 Other Manufacturing Industries Refractory Market.....	153

### INDUSTRY STRUCTURE

1 Revenue Data: Selected Refractory & Raw Materials Manufacturers, 2011.....	158
2 Capital Spending Patterns: Selected Refractory Manufacturers.....	169
3 Selected Acquisitions & Divestitures .....	174

## List of Charts

### MARKET ENVIRONMENT

1 Melting Points of Industrial Materials & Refractories .....	18
2 Selected US Manufacturer Refractory Pricing, 2001-2021 .....	26
3 Refractory Market, 2001-2011.....	29
4 World Refractory Demand by Region, 2011 .....	33
5 US Refractory Imports by Source, 2011.....	38
6 US Refractory Exports by Destination, 2011.....	40

### FORMS

1 Refractory Demand by Form in Value Terms, 2001-2021 .....	45
2 Refractory Demand by Form in Volume Terms, 2001-2021 .....	48

### MATERIALS

1 Refractory Demand by Material in Value Terms, 2001-2021 .....	73
2 Refractory Demand by Material in Volume Terms, 2001-2021 .....	76
3 Nonclay Refractory Shipments by Material, 2011: Value & Volume.....	79
4 Clay Refractory Shipments by Material, 2011: Value & Volume...	105

### MARKETS

1 Refractory Demand by Market, 2011	116
-------------------------------------	-----

### INDUSTRY STRUCTURE

1 US Refractory Market Share by Company, 2011.....	160
---	-----

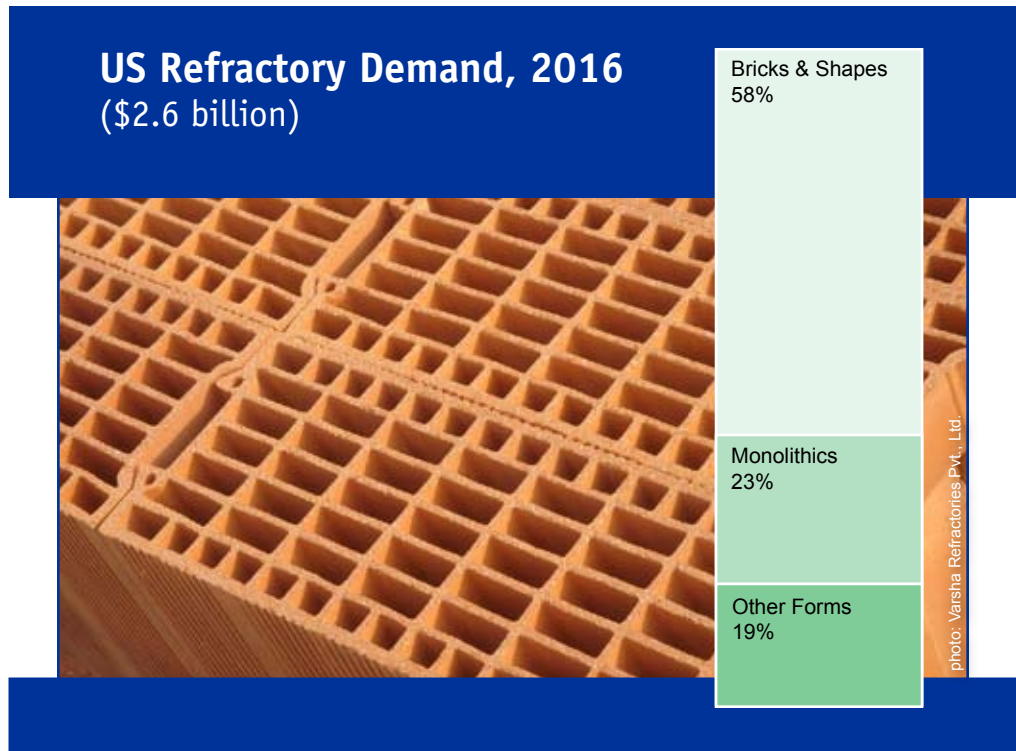
*Growth in the US output of steel following a period of decline, along with a resurgence in the manufacture of goods such as ceramics and glass, will drive demand for refractories.*

## US demand to rise 3.3% annually through 2016

US demand for refractories is projected to grow 3.3 percent per year to \$2.6 billion in 2016. Output of steel in the US will grow following a period of decline, driving demand for refractories. Gains will also come as nonresidential fixed investment spending returns to strong growth through 2016, prompting a resurgence in the manufacture of goods such as ceramics and glass. The market for refractories -- as measured by weight -- is expected to increase 1.2 percent annually to 2.3 million tons in 2016, an improvement from the losses registered over the past decade, but remaining below earlier peaks.

## Metals industries to remain dominant market

In 2011, sales of refractories to iron and steel manufacturers totaled \$990 million, making up 45 percent of all refractory sales. Following a decline in steel output caused by the most recent recession, steel manufacturing in the US -- and associated refractory demand -- will rise through 2016. A shift in consumption toward higher-priced, advanced refractories will bolster sales value. However, the development of longer lasting, more durable refractories will limit demand going forward. Most materials manufacturing industries have reduced their per-production-unit consumption of refractories by using these newer, more durable products and improved processes.



The fastest gains of any market in dollar terms will be posted by nonmetallic minerals. This market includes ceramics, glass, and cement producers. Output from these industries will rebound as the US economy continues to grow, fueling related refractory demand. Further growth will come from nonmanufacturing markets for refractories -- such as waste-to-energy plants, traditional power plants, and commercial ovens -- although these are all fairly small markets. The largest sales volume increases will be in the engineering contractors market, which will rise more than 50,000 tons between 2011 and 2016, recovering from declines posted during the 2006-2011 period.

## Monolithics, specialized shapes to lead gains

In value terms, market gains for refractories will be led by monolithic refractories and specialized shapes. The performance of monolithic refractories has improved greatly, boosting sales of these forms. Technological advancements have also made specialty shapes more cost effective and efficient, bolstering demand for those products. Buyers are increasingly choosing more expensive high grade refractories, which are formulated to perform well under specific operating conditions. As a result, demand for nonclay refractories in tons will outstrip that for clay refractories due to the performance advantages of nonclay types.

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## Sample Text, Table & Chart

### MATERIALS

#### Magnesite & Chrome

Shipments of magnesite and chrome refractories are for climb 27 per the sai the 20 increa trend remain

**SAMPLE  
TEXT**

Magnesite and chrome refractories are a type of refract blending varying amounts of magnesite or chrome based pro are available in a wide array of compositions. With regard to clature (i.e., "magnesite-chrome" versus "chrome-magnesite material used as the primary component in the refractory is n Magnesite-chrome refractories exhibit good mechanical stre are dimensionally stable at high temperatures. These materia resistant to chemical attack from basic slags, a common envi concern in steel and copper smelting. Chrome-magnesite refractories are more resistant to chemically basic environments than magnesite-chrome products, and are used extensively in cement production. Refractories containing magnesia are also considered to be part of the magnesite and chrome product family. These types are available in pure, chrome-free forms, such as dead-burned magnesia, or in chrome blends including chrome-magnesia and magnesia-chrome.

Although the volume of shipments of magnesite and ch refractory products is expected to increase going forward, a specialty refractory materials compete with this more basic t back further gains. Certain types of nonclay refractories are to continue to replace magnesite and chrome refractories as offers superior performance in extreme environments or easi

80

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TABLE IV-1

REFRACTORY SUPPLY & DEMAND  
BY MATERIAL IN VALUE TERMS  
(million dollars)

Item	2001	2006	2011	2016	2021
Nonresident Fixed Investment (bil \$)					
Crude Steel Production (mil tons)					
\$ refractory/000\$ NFI					
\$ refractory/ton steel					
Refractory Demand					
Nonclay					
Clay					
net exports					
Nonclay					
Clay					
Refractory Shipments					
Nonclay					
Clay					
\$/ton					
Refractory Shipments (000 tons)	3041	2918	2165	2310	2405

**SAMPLE  
TABLE**

CHART VI-1

US REFRACTORY MARKET SHARE BY COMPANY  
(\$2.2 billion, 2011)

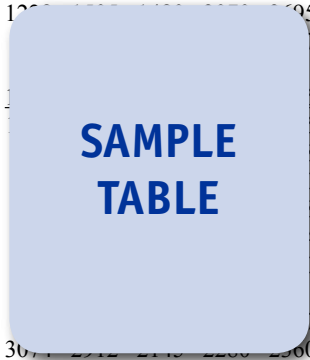


**SAMPLE  
CHART**

## Sample Profile, Table & Forecast

**TABLE V-1**  
**REFRACTORY DEMAND BY MARKET**

Item	2001	2006	2011	2016	2021
Nonresidential Fixed Invest (bil \$) \$ refractory/000\$ NFI	120	125	130	135	140
Refractory Demand (mil \$)					
Metals					
Nonmetallic Materials					
Engineering Contractors					
Nonmanufacturing Industries					
Petroleum & Chemicals					
Other Manufacturing Industries					
\$/ton					
Refractory Demand (000 tons)	307	312	317	322	327



### COMPANY PROFILES

#### BNZ Materials Incorporated

6901 South Pierce Street, Suite 260  
 Littleton, CO 80128  
 303-978-1100  
 http://www.bnzm.com

Annual Sales  
 Employment

**SAMPLE  
PROFILE**

Key Products: refractory bricks, insulating firebricks, mortars, cements, and castables.

BNZ Materials is a leading manufacturer of industrial insulation and refractories for the furnace, petrochemical, aluminum, electrical, glass, steel, and other industries. The Company is privately held.

The Company participates in the US refractory industry through the manufacture of calcium silicate (CaSiO<sub>3</sub>) structural insulation, insulating firebricks, mortars, cements, and castables. BNZ Materials' CaSiO<sub>3</sub> structural insulation is marketed under the CS85, MARINITE, TRANSITE, and ZELIEBLOK brand names. CS85 structural insulation board is designed to provide the Company's highest strength and electrical resistance properties in applications with temperatures of 1,800 degrees Fahrenheit and higher. Among other uses, these boards are suitable for platen press insulation, foundry core and blow plates, induction furnace casing, electrical resistance insulation, and hot glass handling. BNZ Materials' MARINITE structural insulation products comprise MARINITE A and MARINITE C boards, which are heat treated and engineered for use in the conveying, containing, and formation of molten aluminum and other nonferrous metals; and MARINITE P, MARINITE I, and MARINITE M oven-dried boards that can be utilized in heat insulating processes, fire protection applications, and

"Aggregate shipments of primary and fabricated metals from US producers are projected to grow 3.4 percent annually to \$703 billion in 2016. This pace is slightly faster than the 2006-2011 rate, driven by improving demand for refractories from a number of industry segments. Shipments of fabricated metal products will climb 4.8 percent per annum through 2016 to \$377 billion, outpacing the metals industry as a whole. However, ..."  
 --Section V, pg. 118

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**OTHER STUDIES**

**Gaskets & Seals**

US demand for gaskets and seals is forecast to increase 4.6 percent per annum to \$9.6 billion in 2016. Compression packings, body seals and expanded graphite gaskets will register the strongest growth. The growing use of better-performing, higher-priced gaskets and seals will help drive value gains. The marine and rail segment will post the fastest market advances. This study analyzes the \$7.6 billion US gasket and seal industry, with forecasts for 2016 and 2021 by type and market. The study also evaluates company market share and profiles industry players.  
 #2884 ..... May 2012 ..... \$4900

**World Kaolin**

The world market for kaolin is projected to grow 3.7 percent per year through 2015 to 28.4 million metric tons. The biggest gains will be in China, which will easily overtake the US to become the world's largest kaolin market. Paper will remain the largest segment while ceramics will grow the fastest. This study analyzes the 24 million metric ton world kaolin industry, with forecasts for 2015 and 2020 by market, world region and for 20 countries. The study also evaluates company market share and profiles industry players.  
 #2846 ..... February 2012 ..... \$5900

**World Abrasives**

Global abrasives demand will rise 6.3 percent annually to \$44.8 billion in 2015. The fastest gains will be seen in China and India, while gains in North America and Western Europe will be much improved over the 2005-2010 period. Loose grains and powders will be the fastest growing products in the key nonmetallic abrasives segment. This study analyzes the \$33 billion world abrasives industry, with forecasts for 2015 and 2020 by product, market, raw material, world region and for 23 countries. The study also evaluates company market share and profiles industry players.  
 #2837 ..... February 2012 ..... \$6100

**World Plastics Processing Machinery**

Global demand for plastics processing machinery is projected to rise 6.0 percent annually through 2015 to \$28.9 billion. Gains will be driven by developing nations, most notably in the Asia/Pacific region. Extrusion equipment will post the strongest gains by product, while construction will be the fastest growing market. This study analyzes the \$22 billion world plastics processing machinery industry, with forecasts for 2015 and 2020 by product, application, world region and for 30 countries. The study also evaluates company market share and profiles industry competitors.  
 #2833 ..... January 2012 ..... \$5900

**Welding Equipment & Consumables**

US demand for welding equipment and consumables will rise 6.4 percent annually through 2015. Arc and resistance welding systems will remain the dominant welding techniques. Welding electrodes and filler metal will remain the dominant consumables, while emergent products like flux-and metal-cored electrodes grow the fastest. This study analyzes the \$5.2 billion US welding equipment and consumables industry, with forecasts for 2015 and 2020 by technology, product and market. The study also evaluates company market share and profiles industry players.  
 #2785 ..... October 2011 ..... \$4900

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