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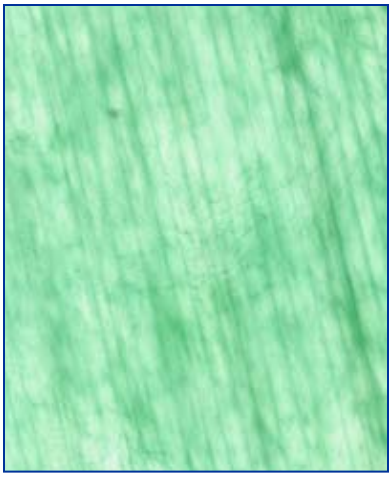

Glass Fibers

US Industry Study with Forecasts for **2011 & 2016**

Study #2199 | May 2007 | $4400 | 287 pages

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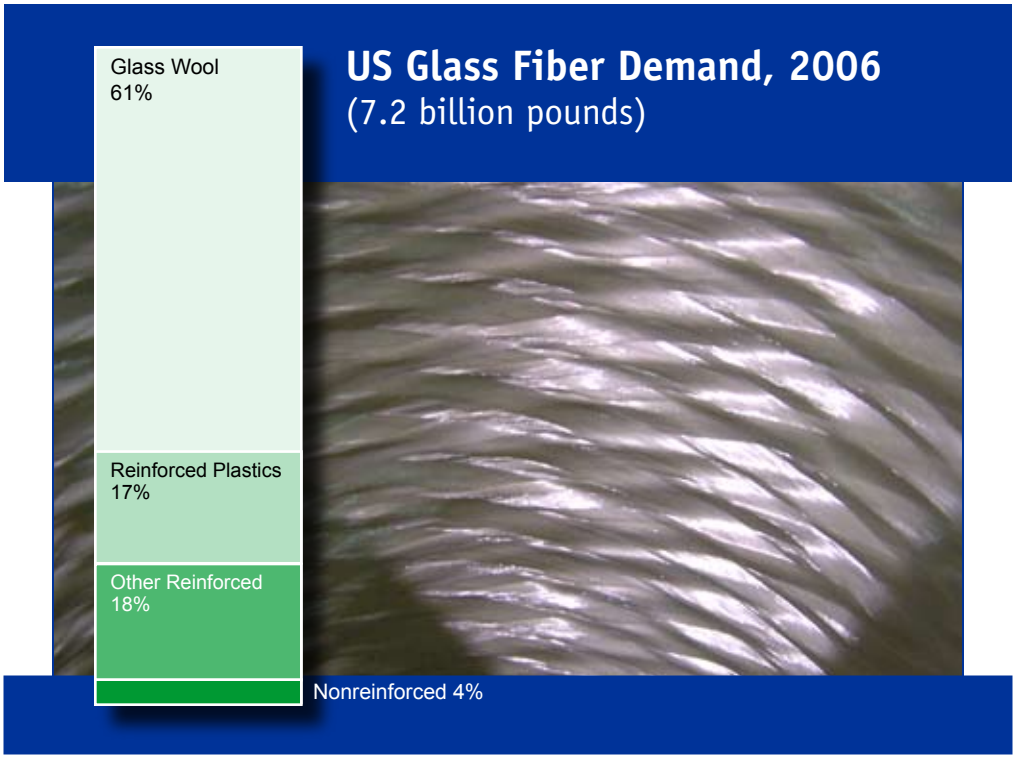
Rebounding demand in nonresidential building markets and increasing insulation use per structure will drive gains in the key fiberglass insulation market for glass fibers through 2011.

Glass wool fiber to offer best growth opportunities

Glass fiber demand in the US is projected to expand 2.3 percent annually to 8.1 billion pounds in 2011, valued at $7.0 billion. Best growth is anticipated for glass wool fiber (fiberglass insulation), with demand forecast to increase 3.0 percent yearly to 5.1 billion pounds in 2011. Gains will reflect rebounding demand in nonresidential building markets, particularly in the office and commercial segment. Efforts are also being made to improve energy efficiency in manufacturing and climate control functions, with increasing insulation use per structure. Further insulation advances will be threatened by declining single-family home construction. However, this will be somewhat offset by greater remodeling and renovation activity.



Reinforced plastics to pace textile glass segment

Textile glass fiber demand will increase at a 1.2 percent annual pace to three billion pounds in 2011. Reinforced plastics will present the best opportunities, expanding nearly two percent annually to 1.4 billion pounds. Textile glass fibers are low cost, versatile and corrosion resistant materials used in both reinforced and nonreinforced applications. Slow textile glass fiber growth will be attributable to maturing applications, intense competition and rapid inroads made by nanomaterials. Nanomaterial reinforcement advances into reinforced textile glass fiber markets are expected as supplies increase and prices become more competitive. Nanomaterial advantages as plastic reinforcements include their unique performance properties, clarity and significantly reduced loading factors.

Demand for textile glass fiber in other reinforced applications will increase less than one percent annually to 1.3 billion pounds in 2011. Subdued growth reflects slow advances in asphalt construction products, particularly asphalt shingles, based on their strong link to declining single-family housing starts. There is also a smaller base of houses needing roof replacement, which accounts for the vast majority of asphalt shingle demand.

Other reinforced uses such as mechanical rubber products, paper products and fabrics will also expand less than one percent annually through 2011.

Nonreinforcement applications for textile glass fibers will grow 2.0 percent per annum to 315 million pounds in 2011. Advances will reflect favorable opportunities for products such as insulating materials and filtration products. Continued growth is expected for textile glass fiber used to produce insulative gaskets for exhaust systems, ovens and other high temperature products, as well as thermal sleeving for wire and hose. Glass fibers are widely used in industrial, clean room and other high efficiency filters.

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Sample Text, Table & Chart

TABLE IV-3

GLASS WOOL FIBER DEMAND BY MARKET
(million pounds)

Item	1996	2001	2006	2011	2016
Bldg Construction Expend (bil 2000$)					
lbs glass wool/000$ construction					
Glass Wool Fiber Demand					
Residential Construction					
Nonresidential Construction					
Industrial & Equipment					
Appliances & Other					
$/lb					
Glass Wool Fiber Demand (mil $)					
% glass wool					
Glass Fiber Demand (mil $)					

SAMPLE TABLE

TEXTILE GLASS FIBERS

New Housing -- Demand for fiberglass insulation in n
applicati percent annuall
2011 to truction accou
48 perce for insulation
Further aker new housi
ment, ch and a decline in
ily hous energy efficien
will also housing start, as
features such as cathedral ceilings and acoustical insulation f
walls.

SAMPLE TEXT

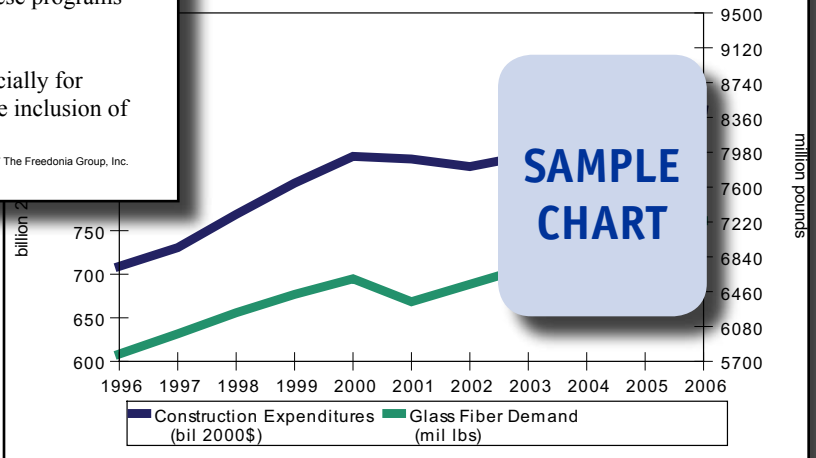
Recently, insulation has played a more prominent role i
ing of residential structures primarily because of upward fluctuations in fuel prices that focus potential homebuyers' interest on the energy efficiency profile of residences. The Department of Energy (DOE) made slight increases in its recommended insulation levels in the late 1990s, providing a boost to insulation demand in new construction applications.

ENERGY STAR is a joint program of the US Environmental Protection Agency and the US Department of Energy that promotes higher energy efficiency and creates partnerships with home builders to entice them to construct homes that use at least 30 percent less energy than homes satisfying the Model Energy Code. Energy efficient choices can save households about a third on their energy bill with similar savings of greenhouse gas emissions, without sacrificing features, style or comfort. The ENERGY STAR program is designed to help consumers and businesses make energy efficient choices.
Increased insulation is one method by which the goals of these programs can be attained.

Changes in the floor plans for home construction, especially for higher-end units, may also assist demand for insulation. The inclusion of

CHART III-1

GLASS FIBER MARKETS, 1996-2006



SAMPLE CHART

Glass Fibers

US Industry Study with Forecasts for ***2011 & 2016***

Sample Profile, Table & Forecast

TABLE XX-00

REINFORCED PLASTICS MARKET FOR TEXTILE GLASS FIBERS (million pounds)

Item	1996	2001	2006	2011	2016
Gross Domestic Product (bil 2000$)	8329	9891	11415	13150	15150
lbs reinforced plastics/000$ GDP	0.34	0.32	0.32	0.32	0.31
Total Reinforced Plastics Demand	2				80
% glass fiber reinforced					4.8
Reinforced Plastics Demand*	2				70
% glass fibers					5.5
Textile Glass Fiber in RF Plastics					10
Motor Vehicles					70
Construction					15
Electrical & Electronic Equipment					97
Marine					37
Consumer & Appliances					24
Aerospace & Other					67
$/lb					91
Textile Glass in RF Plastics (mil $)	1				80
% reinforced plastics					4.0
Textile Glass Fiber Demand (mil $)	169	179	192	202	2000

SAMPLE TABLE

COMPANY PROFILES

AGY Holding Corporation
2556 Wagener Road
Aiken, SC
803-648-
http://ww

Annual S ompa
Employr y)

Key Proc ed str
specialty

SAMPLE PROFILE

AGY Holding is a developer, producer and distributor of fiberglass reinforcements and yarns for electronic, telecommunication, automotive, industrial, recreational and military applications. In April 2006, AGY was acquired by Kohlberg & Company LLC, a private equity firm with offices in New York and California.

The Company is active in the US glass fiber industry through the manufacture of standard glass fibers, rovings, yarn and chopped strands under the S-2 GLASS brand name. AGY also makes several varieties of E glass yarn and various specialty products.

Standard S-2 GLASS Products -- S-2 GLASS glass fibers are designed by AGY to provide strength; achieve impact, temperature and fatigue resistance; and effect radar transparency. The use of S-2 GLASS products is purported to result in improved weight performance compared to conventional glass fibers, while delivering better cost performance in comparison to aramid and carbon fibers.

AGY's S-2 GLASS rovings are manufactured in several grades, including 449 and 463. AGY's 449 S-2 glass rovings consist of many

186

"Demand for glass fiber in reinforced plastics is expected to grow 1.9 percent yearly to 1.4 billion pounds in 2011, valued at $1.3 billion. Further advances will be threatened by competition from nanomaterial reinforcements. Textile glass fiber prices are expected to decline to $0.96 per pound in 2011 as a result of adequate capacity and growing imports of lower cost fibers ..."

--Section V, pg. 109

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Other Studies

World Nanomaterials

As nanomaterials reach the market, manufacturers of many types of products hope to avail themselves of the exceptional strength-to-weight ratios of carbon nanotubes and montmorillonite clay; the UV-blocking ability of titanium dioxide and zinc oxide; and other desirable properties of nanomaterials. This study analyzes the global nanomaterials industry with forecasts for 2011, 2016 and 2025 by product, market and region. The study also discusses R&D funding and activities and profiles leading industry players.

#2215 ..... 07/2007 ..... $5500

World Insulation

The world market for insulation products is analyzed in this study. It presents historical demand data (1996, 2001 and 2006) and forecasts to 2011 and 2016 by insulation material (e.g., foamed plastics, fiberglass, mineral wool); and by geographic region (North America, Western Europe, Asia/Pacific, Latin America, Eastern Europe, Africa/Mideast); and by major national market. The study also considers market environment factors, details industry structure, evaluates market share and profiles major players.

#2202 ..... 06/2007 ..... $5500

Nanotechnology in Construction

US demand for nanomaterials in construction will reach $100 million in 2011, and leap to $1.75 billion by 2025. Coatings will be the largest application, followed by composites and concrete additives. Nanoscale silica, titanium dioxide, and clay will post substantial gains. This study analyzes the US market for nanomaterials in construction, with forecasts for 2011, 2016 and 2025 presented by product, application and market. It also considers market environment factors and profiles leading industry players.

#2185 ..... 05/2007 ..... $4500

Reinforced Plastics

US reinforced plastics demand will reach 4.2 billion pounds in 2011, driven by broadened applications and enhanced competitiveness with steel and aluminum. Thermoset resins will remain dominant while thermoplastics will grow faster. Glass fibers will stay the top reinforcement material while nanomaterials will lead gains. This study analyzes the $6.7 billion US reinforced plastics industry to 2011 and 2016 by resin, market and reinforcement. It also evaluates company market share and profiles major players.

#2195 ..... 04/2007 ..... $4400

Geosynthetics

US geosynthetic demand will grow 4.4% annually through 2010, based on a recovery in nonbuilding construction and a wider range of uses. Geotextiles will remain dominant while geogrids, geonets and geocomposites will grow the fastest. The construction market will continue as the largest end use and show the fastest gains. The study analyzes the US geosynthetic industry to 2010 and 2015 by product, market and region. It also evaluates company market share and profiles major geosynthetic manufacturers.

#2153 ..... 01/2007 ..... $4300

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