



Specialty Glass Industry Advisor

Fall 2012



Investment Banking Solutions for the Middle Market



Industry Report

Investment Banking Solutions for the Middle Market

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I. Executive Summary

Industry Overview

The flat glass market comprises basic unfabricated float glass and value-added fabricated flat glass, including laminated, tempered, insulated, and mirrored products. According to The Freedonia Group ("Freedonia"), the domestic market for fabricated flat glass was nearly \$9.0 billion in 2011 and is projected to grow at a compound annual growth rate ("CAGR") of 5.1% to approximately \$13.3 billion in 2019P.

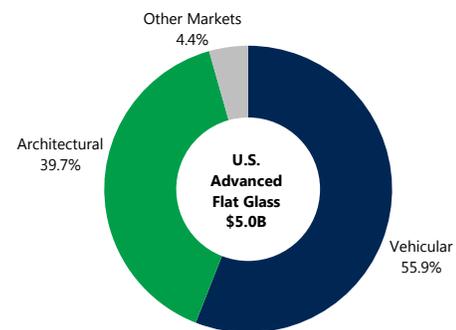
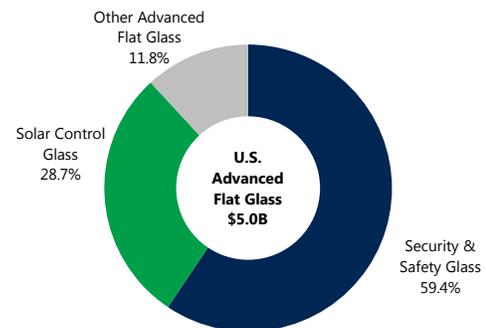
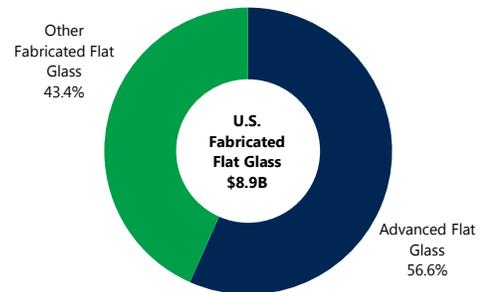
Through the forecast period, the fabricated flat glass market will be primarily driven by increasing demand for advanced flat glass, which is expected to grow from approximately 56.6% of the overall fabricated flat glass market in 2011 to 65.3% in 2019P. The advanced flat glass market comprises security and safety glass, solar control glass, and other advanced flat glass.

Domestic demand for advanced flat glass is directly associated with trends observed in the architectural, vehicular, and other end markets. Following the recent turmoil in financial markets, bursting of the housing bubble, and restructuring of the automobile industry in 2008 through 2009, companies participating in the advanced flat glass market have benefited from macroeconomic improvements, including rebounding new construction and motor vehicle production observed in 2011 through 2012.

This report will focus on the domestic advanced flat glass market, with particular attention paid to security and safety glass products for architectural applications.

Figure 1: U.S. Advanced Flat Glass Market Summary

% of total market



Sources: The Freedonia Group, League Park Estimates

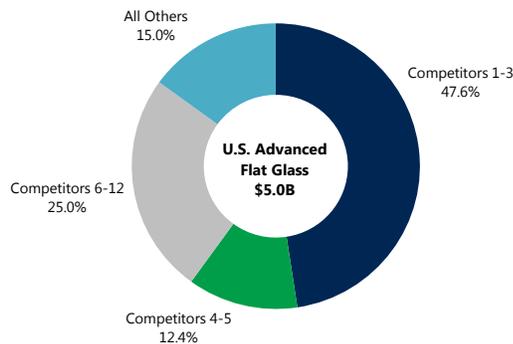
Industry Structure

The domestic advanced flat glass market represents a highly diverse industry comprised of more than 400 companies, ranging from primary manufacturers of basic unfabricated float glass to secondary fabricators of advanced flat glass products. Participants in the domestic advanced flat glass market can be segmented by (i) manufacturing and fabrication capabilities and (ii) value chain positioning:

- Manufacturers of basic float glass;
- Fabricators of laminated glass products for security, safety, and other specialty applications;
- Fabricators of tempered and heat- and chemical-strengthened glass products for the architectural and vehicular end markets;
- Fabricators of insulated glass units;
- Fabricators of mirrored and other decorative glass products;
- Suppliers of materials used in glass manufacturing, as well as laminating, tempering, insulating, and other processes;
- Distributors of advanced flat glass products; and
- General, building envelope, and glazing contractors.

Figure 2: U.S. Advanced Flat Glass Market Share

% of total market



Sources: The Freedonia Group

The domestic advanced flat glass market is moderately concentrated, with a relatively small number of companies accounting for the majority of domestic production. The top three manufacturers supply nearly 50% of total domestic advanced flat glass demand, and the top 12 participants represent approximately 85% of the market. The remaining 15% of the advanced flat glass market is highly fragmented, with more than 300 additional companies participating in the manufacturing and fabrication of advanced flat glass.

M&A Trends

The specialty glass industry remains highly fragmented and provides ample opportunities for consolidation, regardless of the general economic environment and specific end market conditions. While strategic mergers and acquisitions (“M&A”) activity in the specialty glass industry has been slow throughout the recession, opportunities for significant revenue and cost synergies will continue to provide the rationale and motivation for consolidation. As a result of these dynamics, specialty glass companies with (i) leading niche products and comprehensive product offerings, (ii) unique fabrication know-how and capabilities, (iii) diversified revenue across end markets and geographic regions, and (iv) established relationships with key stakeholders at all levels of the value chain will continue to generate a high degree of interest from both strategic and financial acquirers.

Despite excess capacity concerns and limited confidence in near-term recovery in the architectural end market, private equity firms are targeting opportunities for operational and financial improvement throughout the building products and construction materials sectors. Given expectations that these industries will eventually recover, investors view the current market as an ideal opportunity to acquire companies that will best position them to take advantage of a rebound in construction spending and exit the recession with a strong platform characterized by operational precision and strong financial performance.

Recently, two private equity firms have led significant rollups within the specialty glass industry. To date, Sun Capital Partners (Boca Raton, FL) has acquired three manufacturers and distributors of specialty glass products. In addition, Grey Mountain Partners (Boulder, CO) has acquired nine manufacturers, distributors, and retailers of specialty glass products. These industry rollups are focused on the development of a strong financial platform through the integration of operations and personnel, elimination of redundancies, and realization of revenue and cost synergies.

II. Industry Overview

Market Definition

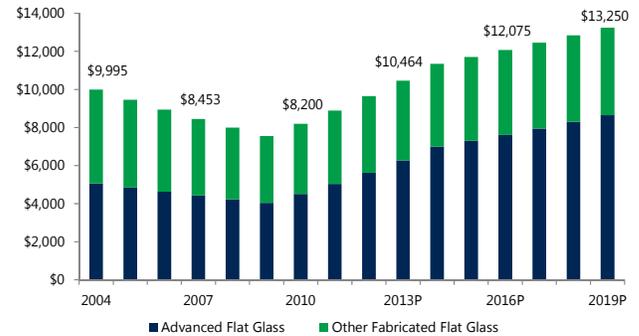
The global flat glass market comprises glass products ranging from basic unfabricated float glass to value-added fabricated flat glass. The fabricated flat glass market can be further segmented into advanced flat glass products – including security and safety, solar control, and other advanced glass products for applications in the architectural, vehicular, and other end markets – and other fabricated flat glass products.

Driven by macroeconomic improvements since the recession in 2008, including growth in new building construction and motor vehicle production, the domestic fabricated flat glass market is expected to grow at a CAGR of 5.1% from nearly \$9.0 billion in 2011 to approximately \$13.3 billion in 2019P. This projected growth in the domestic fabricated flat glass market will be primarily driven by increasing demand in the advanced flat glass segment, which is projected to grow at a CAGR of 7.0% from more than \$5.0 billion in 2011 to roughly \$8.7 billion in 2019P.

Through the forecast period, domestic demand for advanced flat glass is projected to increase at a CAGR of 4.2% from approximately 573 million square feet in 2011 to 795 million square feet in 2019P. Likewise, average advanced flat glass prices are projected to increase at a CAGR of 2.7% from \$8.79 per square foot to \$10.88 per square foot. As a result of this growth in both demand and prices, advanced flat glass is projected to increase from 56.6% to 65.3% of the overall fabricated flat glass market. In 2004, the domestic advanced flat glass market exceeded \$5.0 billion in revenue and 830 million square feet, validating the growth potential for this market as the economy improves.

Figure 3: U.S. Fabricated Flat Glass Market

Years Ended and Ending December 31, 2004 – 2019P
\$ in millions



Sources: The Freedonia Group, League Park Estimates

Figure 4: U.S. Advanced Flat Glass Demand and Price

Years Ended and Ending December 31, 2004 – 2019P
square feet in millions, \$ per square foot



Sources: The Freedonia Group, League Park Estimates

Market Segmentation

Domestic demand for advanced flat glass is driven by the architectural, vehicular, and other end markets. In 2011, the architectural and vehicular end markets represented approximately 55.8% and 39.6%, respectively, of the domestic advanced flat glass market.

Figure 5: U.S. Advanced Flat Glass by End Market

Years Ended and Ending December 31, 2004 – 2019P
\$ in millions



Sources: The Freedonia Group, League Park Estimates

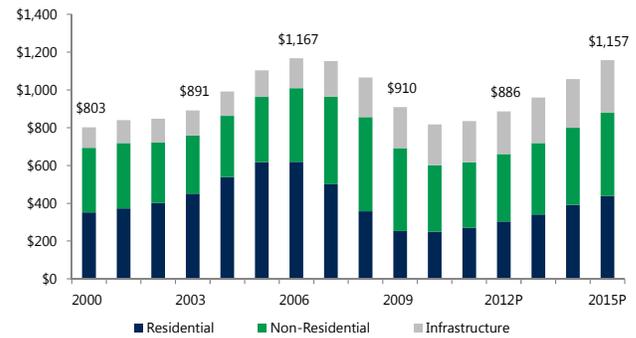
Architectural End Market

Demand for advanced flat glass for architectural applications is primarily driven by activity in the broader building products and construction materials sectors. After a significant decrease in construction spending from 2007 to 2010, these sectors are gaining momentum and are well positioned to rebound through at least 2015P. Total spending in the construction market is projected to increase at a CAGR of 8.5% from approximately \$835 billion in 2011 to \$1,157 billion in 2015P.

Through the forecast period, the expected recovery in construction spending will be principally driven by accelerated spending in the residential segment, balanced by moderate growth in the non-residential segment. In contrast, construction spending in the infrastructure segment has increased consistently since 2000, was supported during the recession by public investment, and is projected to continue to grow through 2015P.

Figure 6: U.S. Construction Spending

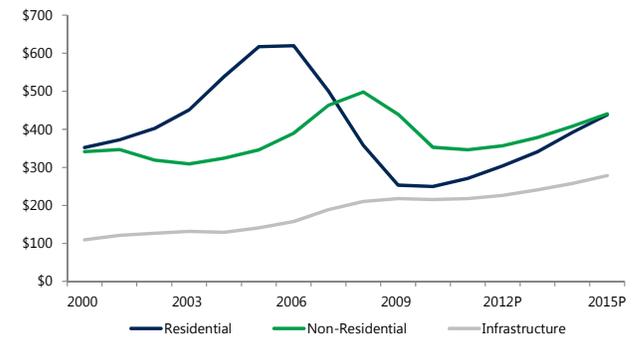
Years Ended and Ending December 31, 2000 – 2015P
\$ in billions



Sources: FMI Corporation

Figure 7: U.S. Construction Spending

Years Ended and Ending December 31, 2000 – 2015P
\$ in billions



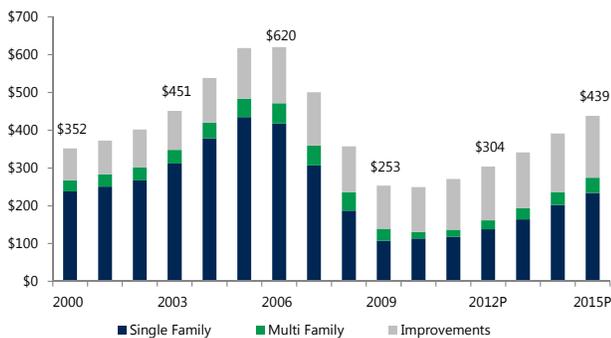
Sources: FMI Corporation

Residential Construction

Residential construction expenditures increased 8.6% in 2011, the first year-over-year increase since spending peaked in 2006. Spending in the residential construction market is forecasted to grow at a CAGR of 12.8% from \$271 billion in 2011 to \$439 billion in 2015P. While the single family and multi-family segments are projected to grow at CAGRs of 18.7% and 20.2%, respectively, through 2015P, spending in these segments will remain well below peak pre-recession levels observed in 2005 and 2006. Alternatively, spending on improvements is projected to increase at a CAGR of 5.2% through 2015P, returning to pre-recession levels by 2013P and continuing to grow through 2015P.

Figure 8: U.S. Residential Construction Spending

Years Ended and Ending December 31, 2000 – 2015P
\$ in billions



Sources: FMI Corporation

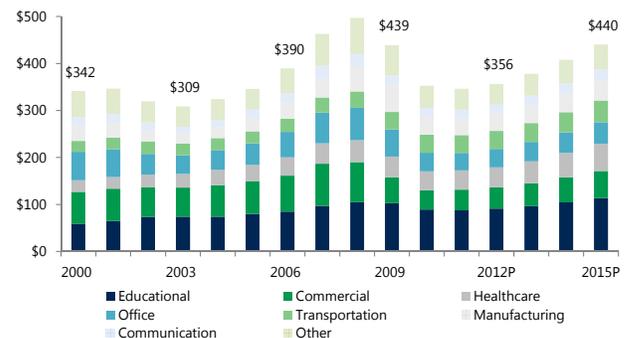
Key elements that precipitated the dramatic slowdown in residential construction were increased new housing inventories, a retrenchment in speculative production, a tightened mortgage lending environment, and the near extinction of alternative financing. As a result, building permits, housing starts, and homebuilders' margins steadily declined from 2006 through 2008 while foreclosures skyrocketed. In contrast, the current environment – characterized by relatively low mortgage rates, increasing disposable income, and projected domestic population growth – could fuel a long-term sector recovery. While data supporting a sustained recovery in the residential construction market has yet to be validated, the long-term fundamentals and current state of the market point to a near-term recovery.

Non-residential Construction

Non-residential construction spending is projected to grow 3.0% in 2012P, the first year-over-year increase since peaking in 2008. Spending in the non-residential construction market has demonstrated consistent growth over the past two years and is projected to increase at a CAGR of 6.2% from \$346 billion in 2011 to \$440 billion in 2015P. The non-residential construction market relies on fixed investment spending, which is dependent on economic growth, population growth, employment levels, vacancy rates, and manufacturing activity. As a result, spending in the non-residential construction market should continue to grow, albeit at lower rates than those observed from 2005 through 2008.

Figure 9: U.S. Non-residential Construction Spending

Years Ended and Ending December 31, 2000 – 2015P
\$ in billions



Sources: FMI Corporation

Through 2015P, growth in non-residential construction will be led by the educational, commercial and healthcare segments, which are projected to grow at CAGRs of 6.7%, 7.0%, and 8.9% to \$114 billion, \$57 billion, and \$58 billion, respectively. Likewise, the office, transportation, and manufacturing segments are projected to grow at moderate CAGRs of 5.5%, 5.2%, and 4.2% to \$46 billion, \$46 billion, and \$43 billion, respectively, through 2015P. Construction spending in the educational, healthcare, and transportation sectors was impacted the least during the recession due to the recession resistant characteristics of these industries as well as public investment made by the American Recovery & Reinvestment Act ("ARRA") of 2009.

Vehicular End Market

Demand for advanced flat glass for vehicular applications comprises (i) laminated windshields, tempered window and sunroof glass, mirror glass, electrochromic mirrors, and heads-up displays for motor vehicles, and (ii) laminated glass in aircraft, construction machinery, and agricultural equipment. In the vehicular end market, motor vehicles accounted for 78% of demand in 2011, with the remaining 22% derived from the aerospace and heavy equipment segments. Likewise, new vehicle production accounts for roughly 84% of demand in the vehicular end market, with the remaining 16% driven by repair and replacement.

Recently, key safety and regulatory trends have contributed to growth in the vehicular end market. For example, the National Highway Transportation Safety Administration is currently evaluating a mandate that would require side windows to be composed of laminated safety glass similar to windshields (i.e., rather than single-pane tempered glass for the prevention of injury and death due to passenger ejection in accidents as well as “smash-and-grab” vehicle theft).

In the absence of regulatory mandates, the expanded use of laminated safety glass in motor vehicles will initially be offered as an optional feature in luxury models with a gradual progression to a standard across the board. This transition will be facilitated by novel manufacturing capabilities that allow laminated glass to be fabricated with the same thickness as tempered glass. The market for other specialty glass products such as electrochromic mirrors and heads-up displays will also continue to grow at a steady rate, although overall penetration is expected to remain low through the forecast period as these products represent a small portion of total demand in the vehicular end market.

Other End Markets

Domestic demand for advanced flat glass in other end markets includes applications for appliances, furniture, and electronics, as well as picture frames, counters, display cases, and aquariums. While growth in other end markets will be primarily driven by appliance and furniture applications representing approximately 65% of demand in other end markets, the fastest growth rates will be observed in electronics applications for the foreseeable future.

Product Segmentation

Domestic demand for advanced flat glass can also be segmented by product type. In 2011, the security and safety and solar control segments represented 59.4% and 28.7%, respectively, of the domestic advanced flat glass market.

Figure 10: U.S. Advanced Flat Glass by Application

Years Ended and Ending December 31, 2004 – 2019P
\$ in millions



Sources: The Freedonia Group, League Park Estimates

Security and Safety Glass

Security and safety glass, which accounts for 59.4% of the advanced flat glass market, is projected to grow at a CAGR of 6.6% from approximately \$3.0 billion in 2011 to \$5.0 billion in 2019P. Growth will be driven by the forecasted recovery in the architectural and vehicular end markets. Architectural applications for security and safety glass include laminated burglary and ballistic resistant glass, laminated hurricane glass, and tempered fire-rated glass utilized in residential and non-residential construction. Likewise, vehicular applications for security and safety glass include laminated glass windshields and tempered side and rear window glass utilized in transportation equipment, including automobiles, trucks, aircraft, boats, trains, and snowmobiles; laminated glass for construction and agricultural equipment and industrial machinery; and ballistic resistant glass for military vehicles.

Solar Control Glass

The solar control glass segment, which accounts for 28.7% of the advanced flat glass market, is projected to grow at a CAGR of 8.0% from roughly \$1.4 billion in 2011 to \$2.7 billion in 2019P. Growth in the solar control glass segment will be driven by the forecasted recovery in the architectural end market combined with the increasing adoption and use of low emissivity (“low-e”) glass, smart glass, and double-pane insulated window units.

Solar control glass comprises reflective, low-e, and smart glass products designed to improve energy efficiency in architectural applications by altering the passage of light and heat through windows. Driven by government incentives and demand for products that mitigate rising heating and cooling costs, low-e glass is commonly used in energy-efficient, double-pane insulated window units and other green and sustainable building products. Likewise, smart glass products include electrochromic windows and mirrors, suspended particle device windows, and liquid crystal display windows capable of varying light transmission.

Other Advanced Flat Glass

Other advanced flat glass currently represents 11.8% of the advanced flat glass market and is projected to grow at a CAGR of 6.2% from roughly \$0.6 billion in 2011 to nearly \$1.0 billion in 2019P. Growth in this segment will be driven primarily by the accelerating adoption of innovative products such as self-cleaning glass for residential and non-residential construction and heads-up display windshields for motor vehicles.

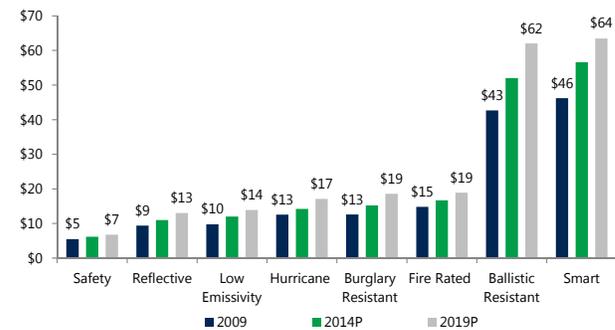
Alternatively, mature products – including ultraclear and colorless glass, monitor and television glass, and glass used in furniture and appliance applications – will grow at a slower rate through the forecast period. Other advanced flat glass products include anti-reflective glass, electrically conductive and heated glass, radiation shielding glass, and other glass used in electronics applications.

Advanced Flat Glass Prices

Advanced flat glass prices are projected to increase at CAGRs of 2.1% to 4.0% from 2011 to 2019P, depending on the type of product. Price increases will be driven by additional labor and energy costs as well as the use of higher cost materials. The largest price increases will be observed in burglary resistant, ballistic resistant, and low-e glass, balanced by moderate gains in hurricane, reflective, smart, fire-rated, and safety glass prices.

Figure 11: Advanced Flat Glass Prices

Years Ended and Ending December 31, 2009, 2014P, and 2019P
\$ per square foot



Source: The Freedonia Group

Industry Structure

The domestic specialty glass industry comprises more than 400 companies, ranging from large, multi-national, publicly-traded manufacturers of basic float glass to small, independent, privately-owned fabricators of various advanced flat glass products. The industry is led by a small number of primary manufacturers that produce basic float glass and are vertically-integrated into the supply chains for and have downstream manufacturing operations in a variety of advanced flat glass products. These firms benefit from cost advantages in basic float glass and are expected to continue to increase their output of higher value-added products to maximize profit margins. Alternatively, more than 300 secondary manufacturers fabricate many different types of advanced flat glass products from purchased float glass and other related supplies – including polycarbonate, polyurethane, and polyvinyl butyral – for a wide variety of applications and end markets.

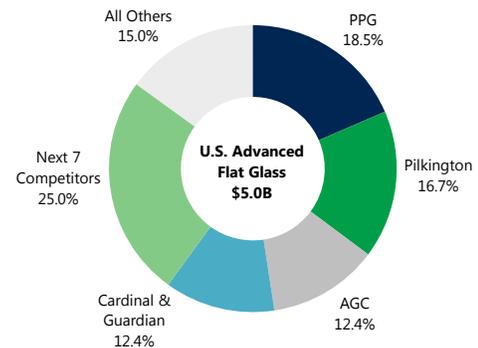
The leading participants in the specialty glass industry include the following companies:

- PPG Industries (Pittsburgh, PA) (NYSE:PPG);
- Pilkington (Toledo, OH), a subsidiary of Nippon Sheet Glass Company (TSE:5202);
- AGC Flat Glass (Alpharetta, GA), a subsidiary of Asahi Glass Company (TSE:5201);
- Cardinal Glass Industries (Eden Prairie, MN);
- Guardian Industries (Auburn Hills, MI);
- Gentex Corporation (Zeeland, MI) (NasdaqGS:GNTX);
- OldCastle BuildingEnvelope (Santa Monica, CA), a subsidiary of CRH (ISE:CRG); and
- Safelite Glass Corporation (Columbus, OH), a subsidiary of D'Ieteren (ENXTBR:DIE);
- Saint-Gobain Corporation (Valley Forge, PA), a subsidiary of Compagnie de Saint-Gobain (ENXTPA:SGO);
- Viracon (Owatonna, MN), a subsidiary of Apogee Enterprises (NasdaqGS:APOG);
- Vitro America (Memphis, TN), a subsidiary of Trulite Glass & Aluminum Solutions; and
- Zeledyne (Allen Park, MI).

The top five firms – PPG, Pilkington, AGC, Cardinal, and Guardian – are primary manufacturers collectively representing approximately 60% of the domestic advanced flat glass market. Likewise, the next seven largest firms –Gentex, OldCastle BuildingEnvelope, Safelite, Saint-Gobain, Viracon, Vitro, and Zeledyne – supplied approximately 25% of domestic advanced flat glass demand. Finally, the remaining 15% of the advanced flat glass market is highly fragmented, with more than 300 additional companies participating in the manufacturing and fabrication of various advanced flat glass products.

Figure 12: U.S. Advanced Flat Glass Market Share

% of total market



Source: The Freedonia Group

Industry Trends

Regulatory Issues

According to Freedonia, the principal regulatory issues affecting the specialty glass industry include (i) environmental regulations, such as concerns regarding air and water pollution as well as waste disposal, (ii) automotive safety regulations for motor vehicles, and (iii) building codes imposed by state and local agencies. The state and local building codes demand significant attention from specialty glass fabricators, as they dictate multiple facets of construction and can have a very specific regional impact (e.g., in the use of hurricane-resistant laminated glass in coastal states).

Industry Standards

Specialty glass fabricators can differentiate their product offerings by demonstrating compliance with a variety of industry standards, performance requirements, and security and safety criteria for various applications, including the following:

- Abrasion and impact resistance;
- Physical attack, forced entry, and burglary resistance;
- Ballistic and blast resistance;
- Fire resistance;
- Weather and natural disaster resistance (e.g., tornado, hurricane, and earthquake resistance);
- Sound and noise resistance; and
- High quality manufacturing.

These standards are defined and administered by the following organizations:

- American National Standards Institute ("ANSI");
- American Society for Testing and Materials ("ASTM");
- H.P. White Laboratory ("HPW");
- Insulated Glass Certification Council ("IGCC");
- International Organization for Standardization ("ISO");
- National Fenestration Rating Council ("NFRC");
- Underwriters Laboratories ("UL"); and
- Walker-McGough-Floz & Lyerla ("WMFL").

Specialty glass fabricators may also seek to have their products certified under and/or approved by the following government agencies for highly-specified applications:

- Federal Emergency Management Association ("FEMA");
- Federal Railroad Administration ("FRA");
- Florida Building Code, Testing Application Standard ("TAS");
- National Institute of Justice ("NIJ");
- U.S. Consumer Product Safety Commission ("CPSC");
- U.S. Department of Defense ("DOD") and Unified Facilities Criteria ("UFC");
- U.S. Department of State ("DOS");
- U.S. Department of Transportation ("DOT"); and
- U.S. General Services Administration ("GSA").

Sustainability

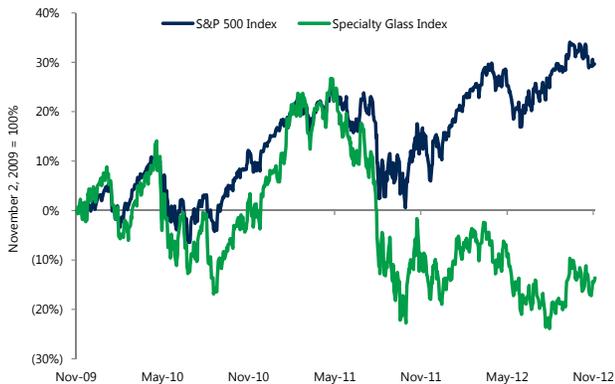
Leadership in Energy & Environmental Design ("LEED") standards provide a certification system developed by the U.S. Green Building Council ("USGBC") to promote sustainable practices. LEED provides a framework for identifying and implementing practical green building design, construction, operations, and maintenance solutions. Architects, contractors, and building owners and operators are increasingly seeking to invest in green products that comply with their overall sustainability initiatives and reduce operating costs by improving energy conservation, light transmission, and other sustainable practices. Specialty glass products that are designed and manufactured to satisfy credits for various LEED standards under specific LEED rating systems (e.g., the energy and atmosphere, materials and resources, environmental quality, and innovation and design components) will be well-positioned to address critical sustainability issues.

III. Financial Analysis

Since Q4 2009, publicly-traded specialty glass companies closely followed the broader equity market (i.e., S&P 500 Index) until a significant market-wide decline in performance observed in Q3 2011. While the broader equity market stabilized in Q4 2011 and improved throughout 2012, the performance of the specialty glass industry has remained volatile and failed to recover.

Figure 13: Relative Stock Price Performance

November 8, 2009 – November 7, 2012



Source: CapitalIQ

Figure 14: Industry Financial Analysis

As of November 7, 2012

\$ in millions

Company	Last Twelve Months (LTM)			LTM Margins			Year-over-Year Change			
	Revenue	EBIT	EBITDA	Gross	EBIT	EBITDA	LTM Revenue	LTM Margins Gross	LTM Margins EBIT	LTM Margins EBITDA
Compagnie de Saint-Gobain	\$54,662.8	\$4,115.9	\$6,060.9	23.8%	7.5%	11.1%	2.5%	72.2%	(6.9%)	(4.6%)
PPG Industries Inc.	15,069.0	1,823.0	2,286.0	40.0%	12.1%	15.2%	2.2%	4.5%	9.2%	6.8%
CRH plc	23,614.3	1,109.1	2,084.1	27.2%	4.7%	8.8%	3.5%	1.9%	6.0%	2.1%
Corning Inc.	7,753.0	1,409.0	2,386.0	42.8%	18.2%	30.8%	(0.2%)	(5.5%)	(20.8%)	(12.1%)
Asahi Glass Co. Ltd.	14,727.0	1,292.1	2,686.7	27.9%	8.8%	18.2%	(5.4%)	(21.8%)	(47.3%)	(30.3%)
Owens Corning	5,209.0	347.0	691.0	17.9%	6.7%	13.3%	(1.8%)	(7.0%)	(8.4%)	(1.3%)
Nippon Sheet Glass Co., Ltd.	6,687.9	(108.8)	346.9	23.7%	(1.6%)	5.2%	(5.0%)	(7.8%)	(248.6%)	(44.1%)
Gentex Corp.	1,099.6	236.4	283.4	34.0%	21.5%	25.8%	11.6%	6.7%	4.5%	5.5%
Vitro, S.A.B. de C.V.	1,779.9	205.7	312.3	31.1%	11.6%	17.5%	11.3%	30.0%	59.0%	17.9%
Apogee Enterprises, Inc.	673.6	18.0	44.5	20.0%	2.7%	6.6%	9.7%	40.4%	(252.8%)	168.8%
Low	\$673.6	(\$108.8)	\$44.5	17.9%	(1.6%)	5.2%	(5.4%)	(21.8%)	(252.8%)	(44.1%)
Median	\$7,220.4	\$728.0	\$1,387.6	27.5%	8.2%	14.2%	2.3%	3.2%	(7.7%)	0.4%
Average	\$13,127.6	\$1,044.7	\$1,718.2	28.8%	9.2%	15.2%	2.8%	11.4%	(50.6%)	10.9%
High	\$54,662.8	\$4,115.9	\$6,060.9	42.8%	21.5%	30.8%	11.6%	72.2%	59.0%	168.8%

Source: CapitalIQ



Financial Analysis

As of November 7, 2012, the median publicly-traded specialty glass company is currently trading at 80.3% of its 52-week high. League Park believes that the aforementioned long-term demand drivers in the architectural and vehicular end markets represent key elements that are driving share prices, and consequently, company valuations.

Publicly-traded specialty glass companies are currently trading at median total enterprise valuation ("TEV") multiples of 0.9x revenue and 8.2x earnings before interest, taxes, depreciation, and amortization ("EBITDA"). Valuation multiples for specialty glass companies are expected to sustain their current levels through the end of 2012, consistent with industry forecasts that the residential and non-residential construction markets have moved past their respective bottoms and will continue to grow through the foreseeable future.

Figure 15: Relative Stock Price Performance

As of November 7, 2012

Company	Price as of 11/7/2012	52 Week		% of High
		High	Low	
Compagnie de Saint-Gobain	\$ 35.99	\$ 48.02	\$ 30.50	75.0%
PPG Industries Inc.	120.64	128.42	78.80	93.9%
CRH plc	18.51	21.61	15.33	85.6%
Corning Inc.	11.51	15.75	10.62	73.1%
Asahi Glass Co. Ltd.	7.07	9.45	5.19	74.8%
Owens Corning	34.33	38.00	24.69	90.3%
Nippon Sheet Glass Co., Ltd.	0.93	2.03	0.66	45.7%
Gentex Corp.	17.43	32.21	14.38	54.1%
Vitro, S.A.B. de C.V.	1.45	1.67	0.84	87.0%
Apogee Enterprises, Inc.	19.85	20.85	9.27	95.2%
Low	\$0.93	\$1.67	\$0.66	45.7%
Median	\$17.97	\$21.23	\$12.50	80.3%
Average	\$26.77	\$31.80	\$19.03	77.5%
High	\$120.64	\$128.42	\$78.80	95.2%

Source: CapitalIQ

Figure 16: Industry Valuations

As of November 7, 2012

\$ in millions

Company	Market Cap 11/7/2012	Enterprise Value	Total Debt /		Enterprise Value / LTM		
			LTM EBITDA	Capital	Revenue	EBIT	EBITDA
Compagnie de Saint-Gobain	\$ 18,920.9	\$ 31,980.7	2.8x	47.2%	0.6x	7.8x	5.3x
PPG Industries Inc.	18,500.2	20,761.2	1.8x	17.8%	1.4x	11.4x	9.1x
CRH plc	13,423.3	18,721.0	3.2x	33.2%	0.8x	16.9x	9.0x
Corning Inc.	17,009.9	14,108.9	1.4x	16.7%	1.8x	10.0x	5.9x
Asahi Glass Co. Ltd.	8,175.0	13,922.3	2.5x	45.5%	0.9x	10.8x	5.2x
Owens Corning	4,056.8	6,256.8	3.2x	35.3%	1.2x	18.0x	9.1x
Nippon Sheet Glass Co., Ltd.	835.8	5,455.7	15.2x	86.3%	0.8x	n/a	15.7x
Gentex Corp.	2,488.2	2,085.6	0.0x	0.0%	1.9x	8.8x	7.4x
Vitro, S.A.B. de C.V.	502.5	1,626.3	3.7x	69.5%	0.9x	7.9x	5.2x
Apogee Enterprises, Inc.	563.4	539.7	0.7x	5.2%	0.8x	30.0x	12.1x
Low	\$ 502.5	\$ 539.7	0.0x	0.0%	0.6x	7.8x	5.2x
Median	\$ 6,115.9	\$ 10,089.5	2.7x	34.3%	0.9x	10.8x	8.2x
Average	\$ 8,447.6	\$ 11,545.8	3.5x	35.7%	1.1x	13.5x	8.4x
High	\$ 18,920.9	\$ 31,980.7	15.2x	86.3%	1.9x	30.0x	15.7x

Source: CapitalIQ

Recent public valuation multiples for specialty glass companies have been relatively stable since the last construction cycle that ended in 2010. Since 2010, specialty glass companies have been focused on minimizing their exposure to commodity prices and garnering market share. Key traits that have attracted private equity firms to the flat glass space are reasonable valuations (in reference to historical standards), a likely rebound in construction in the foreseeable future, and a high degree of fragmentation, and the potential for consolidation by large global strategic acquirers at the time of exit (i.e., known buyers and potential multiple/valuation expansion). As a result, owners of favorably positioned specialty glass companies have the opportunity to realize attractive valuations in the current market environment. In addition, as the public markets put pressure on companies to grow, it is anticipated that this will inherently create competition for acquisitions with the possibility for higher valuations.

Figure 17: Strategic and Financial Valuation Drivers

Strategic Valuation Drivers
<ul style="list-style-type: none"> • Leading market position • Product line extension • End market and geographic diversification • Vertical integration • Strong asset base • Unique fabrication know-how and capabilities

Financial Valuation Drivers
<ul style="list-style-type: none"> • Leading and sustainable market position • Niche products or end markets • Comprehensive product offering • Reputation for high quality customer service • Strong relationships with customers and suppliers • Opportunities for operational and financial improvement • Leverageable balance sheet or cash flows • Limited maintenance capital expenditure requirements • Management talent

Source: League Park

Figure 18: Trends in Industry Valuations

As of November 7, 2012
multiples of TEV / EBITDA

Company	11/7/2012	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	12/31/2006	12/31/2005	12/31/2004	12/31/2003
Compagnie de Saint-Gobain	5.3x	5.2x	6.9x	7.5x	4.7x	6.7x	8.0x	6.6x	5.9x	5.4x
PPG Industries Inc.	9.1x	7.1x	9.3x	9.5x	5.5x	7.2x	6.8x	6.3x	8.7x	9.2x
CRH plc	9.0x	9.7x	9.4x	8.7x	5.5x	6.8x	9.7x	9.2x	8.7x	8.0x
Corning Inc.	5.9x	3.7x	6.7x	12.2x	3.7x	13.3x	12.3x	17.2x	15.5x	33.0x
Asahi Glass Co. Ltd.	5.2x	3.7x	4.5x	9.3x	3.4x	7.5x	8.6x	8.5x	8.1x	9.2x
Owens Corning	9.1x	7.5x	8.3x	10.2x	6.5x	5.9x	6.0x	0.0x	0.0x	0.0x
Nippon Sheet Glass Co., Ltd.	15.7x	7.2x	7.0x	19.6x	4.2x	5.8x	20.6x	9.9x	8.6x	11.4x
Gentex Corp.	7.4x	14.1x	16.9x	21.4x	5.2x	12.6x	12.3x	15.8x	13.7x	18.8x
Vitro, S.A.B. de C.V.	5.2x	7.4x	9.0x	8.4x	5.2x	6.4x	6.1x	6.0x	5.4x	6.1x
Apogee Enterprises, Inc.	12.1x	14.4x	31.0x	3.7x	2.7x	6.7x	9.5x	10.4x	12.9x	9.4x
Low	5.2x	3.7x	4.5x	3.7x	2.7x	5.8x	6.0x	0.0x	0.0x	0.0x
Median	8.2x	7.3x	8.7x	9.4x	4.9x	6.8x	9.0x	8.8x	8.7x	9.2x
Average	8.4x	8.0x	10.9x	11.1x	4.7x	7.9x	10.0x	9.0x	8.8x	11.1x
High	15.7x	14.4x	31.0x	21.4x	6.5x	13.3x	20.6x	17.2x	15.5x	33.0x

Source: CapitalIQ

IV. M&A Trends

The specialty glass industry represents a highly fragmented market, ranging from a few large, multi-national, publicly-traded manufacturers of basic float glass to more than 300 small, independent, privately-owned fabricators of various advanced flat glass products. This fragmentation provides ample opportunities for consolidation, regardless of the general economic environment and specific end market conditions. However, due to the unique characteristics of the architectural end market – including the high level of specification for advanced glass products as well as high freight costs and the importance of geographic location – the specialty glass industry needs to be assessed by individual products and potentially on a regional basis. As a result of these dynamics, specialty glass companies with (i) leading niche products and comprehensive product offerings, (ii) unique fabrication know-how and capabilities, (iii) diversified revenue across end markets and geographic regions, and (iv) established relationships with key stakeholders at all levels of the value chain will continue to generate a high degree of interest from both strategic and financial acquirers.

Strategic Acquirers

Fabricators of specialty glass products have demonstrated the ability to protect themselves from new competitors given the significant investment of resources, time, and effort necessary to develop the following competitive advantages:

- Acquire the necessary facility and manufacturing equipment;
- Test and certify products to demonstrate compliance with industry standards and other performance criteria, specifications, and requirements;
- Acquire expertise in specification writing, fabrication methods, and industry-specific know-how;
- Develop a unique network of relationships with intermediaries between fabricators and end customers, including architects, general contractors, glazing contractors, independent distributors, and other industry constituents; and
- Develop a comprehensive portfolio of products across multiple applications that enables revenue diversification, access to a large base of prospective customers, and generation of repeat business from existing customers.

While strategic M&A activity in the specialty glass has been slow throughout the recession, the fragmented nature of the industry, opportunities for significant revenue and cost synergies, and the ability of participants to develop defensible market positions with significant barriers to entry will continue to provide the strategic rationale for consolidation. The motivation for completing these acquisitions includes:

- Developing a more robust product offering enables fulfillment of all needs for a specific customer as well as leveraging customer and supplier relationships, distribution systems, and sales and marketing resources;
- Expanding geographic coverage reduces exposure to regional specific cycles and augments growth opportunities;
- Capturing market share creates a more sustainable and defensible market position;
- Leveraging operational expertise and/or proprietary information systems drives operational improvements; and
- Leveraging scale enables more efficient sourcing, better utilization of overhead expenses, and improved inventory and working capital management.

Financial Acquirers

Due to the decline in overall construction spending during the recession, the most active acquirers have been private equity firms with relevant experience in the building products and construction materials sectors. This environment provides opportunities for private equity firms to acquire platform companies and grow these businesses to a larger scale through add-on acquisitions, in many cases at a lower valuation than the initial platform due to size and market position.

As a class of financial investors, private equity firms typically make an investment with varied exit alternatives, including a sale or public offering. In conjunction with a sound exit strategy, private equity firms also have the opportunity to create value through multiple expansion. If a private equity firm transitions its investment from a small niche company into a dominant player, it can realize more value, since larger companies merit higher valuations due to greater (i) market share and pricing power; (ii) purchasing leverage; (iii) customer, end market, and geographic diversification; and (iv) perceived management talent.

Specialty glass companies with the following traits will receive significant interest from private equity firms, providing owners with a broad array of liquidity alternatives in a sale process:

- Leading and sustainable market positioning;
- A comprehensive offering of high quality products that are targeted towards security, energy efficiency, and other highly specified applications;
- Favorable lead times, reliable and timely product delivery, and high quality customer service;
- Strong relationships with customers and relevant stakeholders, including architects, general contractors, and building envelope and glazing contractors;
- Leverageable balance sheet or cash flows; and
- Limited maintenance capital expenditure requirements.

Recent Industry Rollups

Since 2010, two private equity firms have led significant rollups within the specialty glass industry. **Grey Mountain Partners** (Boulder, CO) has acquired nine manufacturers, distributors, and retailers of specialty glass products serving a variety of applications and end markets since October 2011. These companies, which have been rolled up into **Consolidated Glass Holdings**, include the following:

- **Global Security Glazing** (Selma, AL) – a designer and manufacturer of institutional security, custom architectural, and transportation glass and glazing solutions – in October 2011;
- **Binswanger Glass Company** (Memphis, TN) – a designer, retailer, and installer of architectural glass and aluminum products within the construction, residential, and automotive markets – in January 2012;
- **Custom Components** (Tampa, FL) – a manufacturer, fabricator, and supplier of aluminum, stainless steel, and glass architectural engineered products including interior and exterior railing systems, interior aluminum office fronts, and stile and rail doors – in January 2012;
- **Columbia Commercial Building Products** (Rockwall, TX) – a manufacturer of high-performance aluminum, commercial architectural windows, storefront, mall sliders, curtain wall and entrance doors for both new and replacement construction environments – in January 2012;

- **Hawkins Glass Wholesalers** (Stafford, VA) – a wholesale distributor of clear and tinted glass, as well as other insulated, laminated, tempered, and mirrored glass products for residential and commercial applications – in February 2012;
- **Insulpane of Connecticut** (Hamden, CT) – a fabricator of architectural glass products, including cutting, tempering, laminating, and insulating capabilities focused on serving the new construction and remodel markets – in September 2012;
- **Orchard Glass Distributors** (Hamden, CT) – a wholesale distributor of flat glass, mirrors, and shower doors, and a provider of just-in-time cutting services and delivery to a diverse set of customers – in September 2012;
- **North American Specialty Glass** (Trumbauersville, PA) – a fabricator of safety and security glass, specializing in high-performance transparency systems for transportation, architectural, military, and other specialty applications, as well the development of glass and polycarbonate laminate technology – in October 2012; and
- **Shaw Glass Company** (dba Solar Seal) (South Easton, MA) – a designer and manufacturer of architectural glass products – in November 2012.

In addition, **Sun Capital Partners** (Boca Raton, FL) has acquired three manufacturers and distributors of specialty glass products since January 2010. These companies, which have been consolidated into **Trulite Glass & Aluminum Solutions**, include the following:

- **Arch Aluminum & Glass Company** (Deerfield Beach, FL) – a fabricator of architectural glass and aluminum products, and distributor of architectural aluminum, extrusions, and insulated, tempered, laminated, mirrored, and decorative glass products – in January 2010;
- **United Glass Corporation** (Louisville, KY) – a manufacturer and supplier of architectural glass and aluminum products for the residential and commercial construction end markets, including tempered flat glass, insulated glass units, spandrel glass, and other architectural glass and aluminum products – in April 2011; and
- **Vitro America** (Memphis, TN) – a fabricator, distributor and installer of architectural glass and aluminum products serving the construction, automotive replacement, and furniture markets – in June 2011.

Combining companies operating within the same industry focuses on the development of a strong financial platform through the integration of operations and personnel, elimination of redundancies, and realization of cost synergies. In most cases, the new platform company will have fewer total sites than its constituents maintained prior to being acquired, keeping the best locations in the most significant regions, covering the same geographies, and providing the same or better customer service. Meanwhile, rigorous human resource policies will be put in place to evaluate teams with a focus on bringing together the best people from individual companies, maintaining important customer relationships, and merging cultures. Likewise, developing corporate infrastructure remains a key consideration, with particular attention made to centralized versus decentralized models and the level of operational autonomy granted to individual sites. Finally, developing strong relationships with major suppliers and establishing a track record of reliably paying invoices on time is critical to realizing the benefits of scale and consolidated purchasing.

Despite excess capacity concerns and limited confidence in near-term recovery and growth in the architectural end market, private equity firms are targeting opportunities for operational and financial improvement throughout the building products and construction materials sectors. Given expectations that these industries will eventually recover, investors view the current market as an ideal opportunity to acquire companies that will best position them to take advantage of a rebound in construction spending and exit the recession with a strong platform characterized by operational precision and strong financial performance. For example, industry experts have estimated that very few specialty glass fabricators (i.e., less than 10%) measure operational processes and track orders with data, limiting the amount of information available with respect to how many orders are shipping or not shipping on time and why. By implementing information systems and process-driven cultures in their portfolio companies, private equity firms can identify problems and opportunities for operational improvement, disseminate best practices, and educate management teams on how to implement the necessary changes.



League Park Overview

LEAGUE PARK OVERVIEW

League Park is a boutique investment bank that professionally and ethically advises clients on strategies aimed to maximize shareholder value. We assist middle market companies with transactions that generate value through mergers and acquisitions, recapitalizations, capital raising, and outsourced corporate development.

Whatever the transaction, our clients receive specialized attention from senior bankers at every step in the deal process. Our team has decades of investment banking, corporate development, private equity, and operational experience, completing over 300 transactions across a diverse range of industries in the past 25 years.

Advisory Capabilities:

Mergers and Acquisitions
Recapitalizations
Capital Raising
Outsourced Corporate Development

Industry Expertise:

Business Services
Healthcare
Technology
Retail and Consumer Products

Industrial

- Automotive
- Building Products and Construction
- Distribution
- Industrial and Specialty Gas
- Industrial Services
- Metals
- Paper, Print and Packaging
- Specialty Chemicals
- **Specialty Glass**

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GLOBAL SECURITY GLAZING



Company Overview

Global Security Glazing (“GSG” or the “Company”) designs, manufactures, and provides institutional security and custom architectural glass and glazing solutions, offering a complete line of all-glass laminates, glass-clad polycarbonates, laminated polycarbonates, and other specialty products. The Company’s products are fully tested and compliant with specific industry standards and threat levels for projects that require high quality manufacturing; abrasion, impact, blast, and fire resistance; and protection from ballistic, physical attack, forced entry, and burglary threats. To meet the needs of a broad and diverse customer base in the detention, government architecture, military, specialty architecture, transportation, and other end markets, the Company’s manufacturing facility is equipped with world class capabilities for glass laminating, tempering, heat and chemical strengthening, annealing, insulating, and other aesthetic processing.

Transaction Overview

As a family-owned business, GSG shared common ownership and management resources with two other specialty glass companies. Given GSG’s consistent historical performance and track record of success, the Company’s shareholders retained League Park to execute a process seeking a corporate carve-out through a sale transaction. As the exclusive sell-side advisor, League Park leveraged GSG’s leading market position, strong operating history, consistent financial performance, and diverse customer base to generate a high level of interest in the Company. A broad auction process and successful positioning of the Company drove a premium valuation, and the final purchase price exceeded valuation expectations. League Park views this successful outcome as evidence that the M&A market is strong for value-added manufacturers who are compliant with industry standards and provide mission-critical products for highly-specified applications.



SOURCES AND DISCLOSURE

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