



Portland Cement Association

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# **SURVEY OF PORTLAND CEMENT CONSUMPTION BY USER GROUP**

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SECOND QUARTER 2013

## **Market Intelligence Group**

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## Survey Overview

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The Portland Cement Association's (PCA's) Market Intelligence Group conducts a quarterly survey of portland cement consumption by user segment. The intent of this report is to help member companies, PCA/ CAC staff, and promotional allies better evaluate market conditions surrounding the use of concrete and other cement based products.

**Data for eighteen user segments is collected:**

- **Building Materials Dealers**
- **Concrete Brick & Block Manufacturers**
- **Fiber-Cement Siding**
- **Concrete Pipe**
- **Concrete Roof Tile**
- **Interlocking Pavers**
- **Oil & Gas Well Drilling**
- **Packaged Product Producers**
- **Precast Concrete**
- **Prestressed Concrete**
- **Ready-Mixed Concrete**
- **Full- Depth Reclamation (FDR) Paving**
- **Soil-Cement (SC) Paving**
- **Roller Compacted Concrete (RCC) Paving**
- **Soil-Cement/ Roller Compacted Concrete (SC/RCC)-Water Resources**
- **Streets & Highways Contractors**
- **Waste Solidification & Stabilization (S/S)**
- **All Other Manufacturers and Contractors**

Survey forms are sent to all PCA member cement companies in North America. Totals include U.S. and Canadian data and excludes masonry and white cement. Cement tonnage is reported in metric tons.

Survey results are adjusted to correspond to the U.S.G.S. (U.S.) and Statistics Canada (Canada) cement consumption volumes as reported by cement companies in their respective monthly surveys to those agencies. Although this survey excludes white cement, white cement consumption cannot be excluded from the U.S.G.S. nor Statistics Canada surveys and may account for up to 1.5% of quarterly volume. Cement segment graphs are a reflection of North American (U.S. & Canada) data. Regional graphs reflect U.S. volumes only.

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## Survey Response Rate

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The following companies/plants reported for the Second Quarter of 2013:

*Alamo Cement Company*  
*American Cement Company*  
*Argos USA Corporation*  
*Ash Grove Cement Company*  
*Ash Grove Texas, L.P.*  
*Buzzi Unicem USA*  
*CalPortland*  
*CEMEX*  
*Ciment Quebec, Inc.*  
*Continental Cement*  
*Drake Cement LLC*  
*Essroc Canada Inc.*  
*Essroc Cement Corp.*  
*GCC of America Inc.*  
*Lafarge Canada, Inc.*  
*Lafarge North America Inc.*  
*Lehigh Cement Company*  
*Mitsubishi Cement Corporation*  
*The Monarch Cement Company*  
*National Cement Company of Alabama*  
*National Cement Company of California*  
*Phoenix Cement Company*  
*St. Mary's Cement Inc. (Canada)/VCNA*  
*St. Mary's Cement Inc. (U.S.)/VCNA*  
*Suwannee American Cement/ VCNA*  
*Texas Industries Inc.*  
*Texas Lehigh Cement Co, LP*  
*Titan America LLC*

Industry response rate\*: 80%

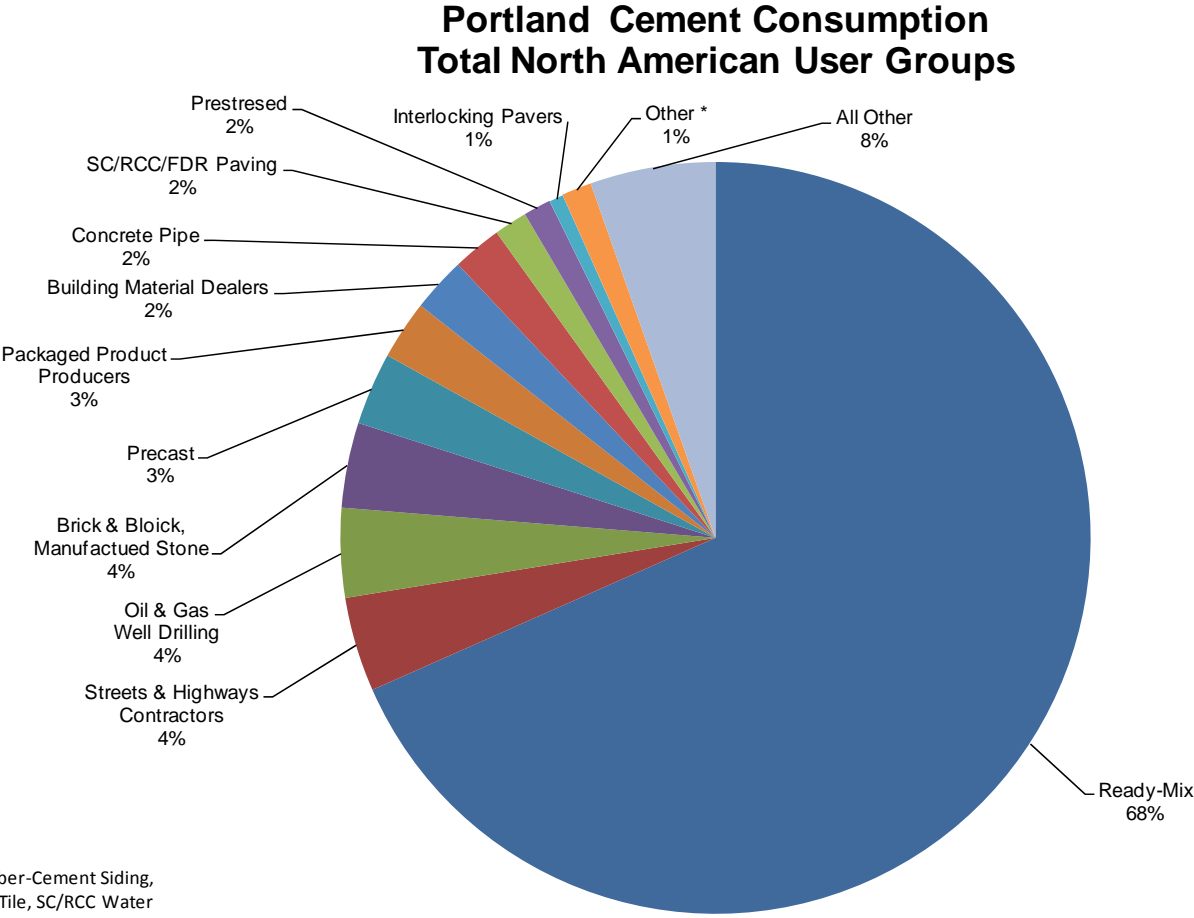
\*Typically, our survey response rate is approximately 94%. This change prompts PCA to change its footing methodology to better estimate for non-respondents.

# Portland Cement Consumption

## Second Quarter 2013

Cement consumption for the second quarter of 2013 was 23,618,172 metric tons (mt), down 0.3% from the second quarter of 2012. In second quarter 2013, Ready-Mixed Concrete captured 68.4% of total consumption, followed by All Other (5.4%), Streets & Highways Contractors (4.1%), Oil & Gas Well Drilling (3.9%), and the Brick & Block/Manufactured Stone (3.7%) segments.

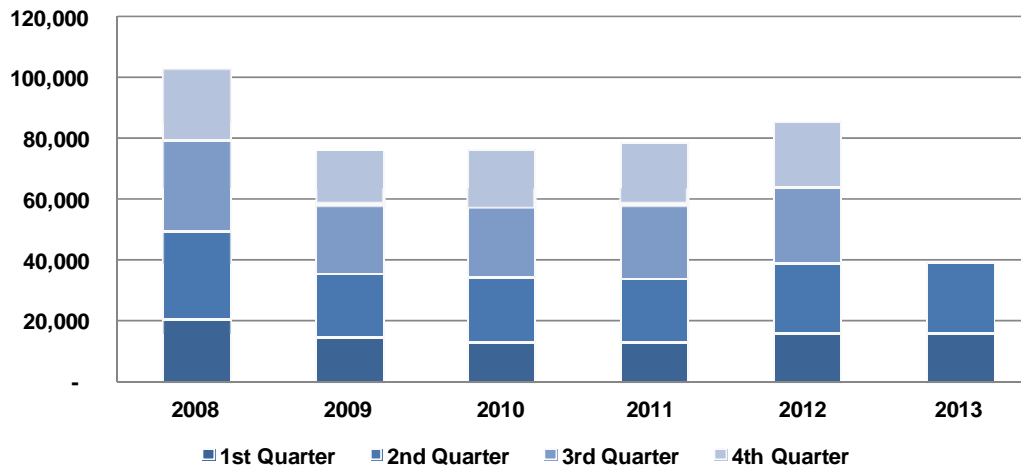
*NOTE: Portland cement consumed by the ready-mixed market and used in street and highway construction may be reported under Ready-Mixed Concrete and not under Streets & Highways Contractors.*



## Portland Cement Consumption, Second Quarter 2013: Data

Total North America (000 Metric Tons)	2nd Quarter			YTD		
	2013	2012	Change	2013	2012	Change
Ready-Mix	16,149	16,489	-2.1%	26,786	27,460	-2.5%
Streets & Highways Contractors	961	1,129	-14.8%	1,481	1,539	-3.8%
Oil & Gas Well Drilling	910	689	32.1%	1,747	1,375	27.0%
Brick & Block/ Manufactured Stone	865	842	2.8%	1,393	1,418	-1.8%
Precast	739	674	9.5%	1,329	1,250	6.3%
Packaged Product Producers	601	560	7.4%	1,071	1,011	6.0%
Building Materials Dealers	556	476	16.9%	867	854	1.5%
SC/RCC/FDR Paving	502	534	-6.1%	740	891	-17.0%
Concrete Pipe	339	369	-8.2%	581	634	-8.4%
Prestressed Concrete	279	261	6.9%	513	496	3.5%
Interlocking Pavers	145	157	-7.5%	227	243	-7.0%
Concrete Roof Tile Manufacturers	125	89	40.5%	219	168	30.4%
Fiber Cement Siding Manufacturers	113	106	7.0%	175	167	4.9%
Waste S/S	41	116	-64.5%	104	205	-49.1%
SC/RCC Water Resources	24	23	4.4%	30	33	-9.6%
All Other	1,272	1,167	9.1%	2,497	2,186	14.2%
<b>Total</b>	<b>23,618</b>	<b>23,680</b>	<b>-0.3%</b>	<b>39,831</b>	<b>39,925</b>	<b>-0.2%</b>

Portland Cement Consumption  
(Thousands of Metric Tons)

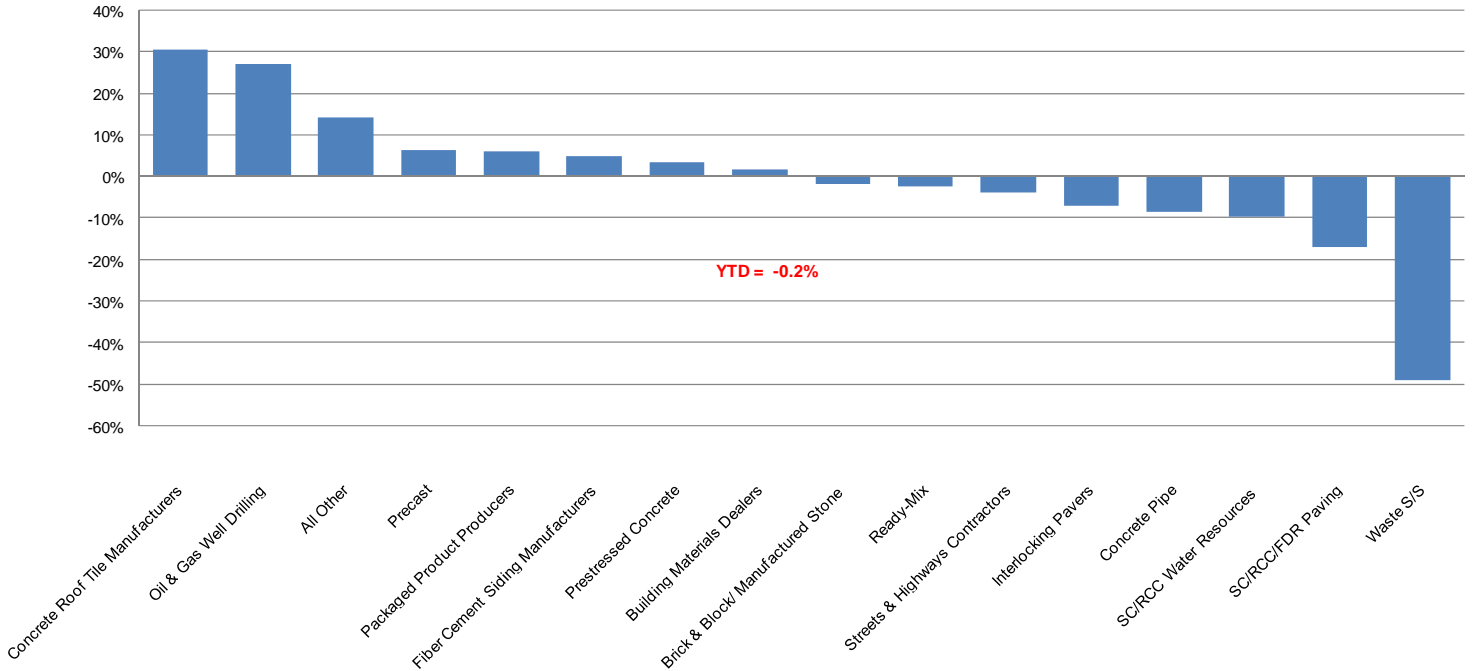




# Portland Cement Consumption, Second Quarter YTD 2013: Analysis

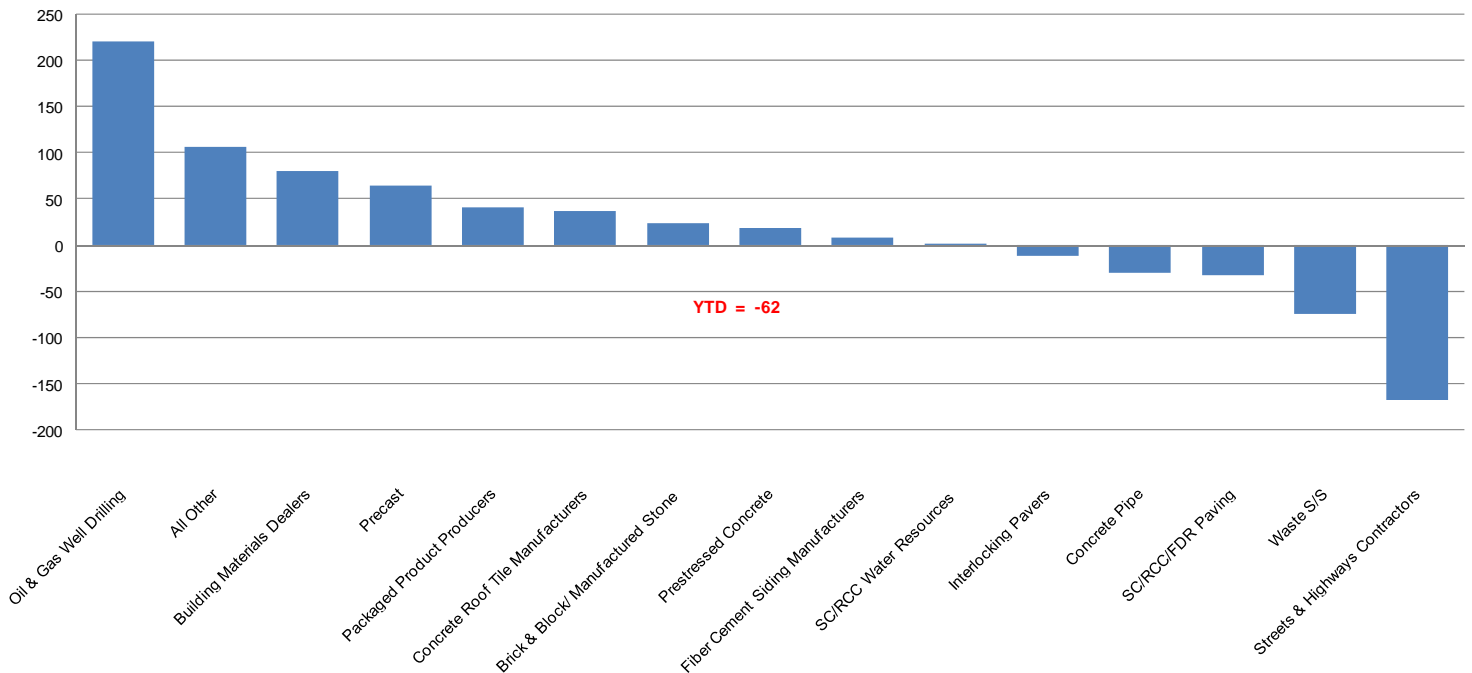
## Market Dynamics: Leaders & Laggards

YTD Change (%)  
2012-2013



## Market Dynamics: Leaders & Laggards

YTD Volume Change (000 mt)  
2012-2013



## Portland Cement Consumption, Second Quarter 2013: Analysis & Outlook

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North American portland cement consumption declined 0.3% in the second quarter 2013 against the same period in 2012 as the U.S. recorded little growth (0.4%) and Canadian consumption fell 6.1%. Tenuous growth in the second quarter is not the result of a change in market fundamentals, rather an unusually wet spring and early summer which postponed concrete projects. PCA maintains an optimistic medium term outlook for the U.S. economy, construction activity, and cement consumption. Weakness in the Canadian residential sector will result in negative growth in Canada this year, followed by a quick rebound in the residential starts market and government construction in 2014.

U.S. cement consumption in the first half of 2013 was approximately on par with 2012 levels — even with winter volumes compared against an unseasonably warm first quarter 2012 and an unusually wet second quarter 2013. Favorable weather in July and August facilitated gains of 12% and 4.9% respectively. September 2013's preliminary consumption figures indicate 15% growth, compared against weak 2012 levels. PCA's 2013 projections incorporate a flat fourth quarter which implies upside risk given improving fundamentals.

The fundamentals behind each construction sector have been continuing to improve slowly since the Spring forecast. Likewise, the market drivers for each user group have remained stable and positive — thus the thrust of each segment's forecast has changed little.

Residential construction is expected to be responsible for nearly two-thirds of growth in cement consumption this year. The two critical ingredients that signal homebuilders to accelerate building activity — lean inventories and rising prices — have materialized. Nearly one million housing starts are expected in 2013, with over one million starts projected in 2015. Not only will second half growth in employment and consumer sentiment aid residential cement demand, a recovery in cement intensities will expedite consumption gains in the residential sector. During the downturn, cement intensities retreated to record low levels — 21% lower than peak levels. As economic and construction activity returns to normal, cement intensities should approach historical levels. Finally, massive pent-up demand generated over the economic downturn may begin to gradually leak into the market in 2014 as favorable private debt ratios, dramatically improved corporate liquidity, and strengthened depository institutions have unfolded. The release of pent-up demand in residential construction could translate to 40 million annual tons of cement in residential buildings alone by 2018.

Nonresidential construction is expected to accelerate in 2014 and beyond. Expected ROI's have been plagued by low occupancy and usage rates, tight lending standards, and declining commercial asset prices. These adversities have been healing, albeit slowly. PCA expects cement consumed in commercial building will increase 13% this year, followed by 25% growth next year. While these rates are based off historically low levels, segments highly concentrated in the nonresidential sector will enjoy robust expansion throughout the forecast horizon.

Public construction will end 2013 with negative growth. As the economy gains momentum in 2014, however, tenacity in the labor market coupled with rising home prices will eventually translate into states' ability to fund construction projects. During the downturn, states reduced their share of discretionary spending on highway/road construction to attend to other priorities. After years of neglecting infrastructure, pent-up demand may have been generated and may be released in tandem with healthier state balance sheets. Further, a new highway bill representing a ten-fold increase in TIFIA funding compared to existing levels will facilitate larger-scale, perhaps more cement intensive, construction projects.

Collectively, the market dynamics of each construction sector have changed little since Q1. PCA's expected growth of 4% has materialized and given a flat Q4 forecast scenario, the presence of upside risk will exist for the remainder of 2013.

## Portland Cement Consumption: Forecast

Cement Consumption (000 mt)	Actual	PCA Projection		% Change YY	
	2012	2013	2014	2013	2014
United States	76,600	79,764	87,426	4.1%	9.6%
Canada	9,297	8,823	9,208	-5.1%	4.4%
<b>Total North America</b>	<b>85,897</b>	<b>88,587</b>	<b>96,634</b>	<b>3.1%</b>	<b>9.1%</b>
Ready-Mixed Concrete	59,996	61,673	67,758	2.8%	9.9%
Streets & Highways Contractors	3,984	3,934	3,948	-1.2%	0.4%
Concrete Brick & Block	2,640	2,694	3,002	2.1%	11.4%
Precast Concrete	2,626	2,758	3,027	5.0%	9.8%
Oil & Gas Well Drilling	2,927	3,056	2,954	4.4%	-3.3%
SC/RCC/FDR Paving	1,862	1,870	1,960	0.4%	4.8%
Building Materials Dealers	1,747	1,832	2,003	4.9%	9.3%
Packaged Product Producers	1,953	2,116	2,383	8.3%	12.6%
Concrete Pipe	1,274	1,243	1,288	-2.4%	3.6%
Prestressed Concrete	997	1,044	1,134	4.7%	8.6%
Interlocking Pavers	503	503	540	0.0%	7.4%
Fiber Cement Siding	269	291	319	8.2%	9.6%
Waste S/S	315	287	315	-8.9%	9.8%
Concrete Roof Tile	354	408	446	15.3%	9.3%
SC/RCC Water Resources	58	58	60	-0.4%	5.1%
All Other	4,443	4,820	5,497	8.5%	14.0%
<b>Total</b>	<b>85,897</b>	<b>88,587</b>	<b>96,634</b>	<b>3.1%</b>	<b>9.1%</b>

User group forecasts are developed using estimated distributions of segment cement volumes, allocated to primary construction sectors, and linked to PCA's most recent U.S. and Canadian forecasts.

Market	Residential	Nonresidential	Public
Ready-Mixed Concrete	32%	15%	53%
Streets & Highways Contractors	0%	0%	100%
Brick & Block/ Manufactured Stone	43%	47%	10%
Precast Concrete	7%	50%	43%
Oil & Gas Well Drilling	0%	100%	0%
SC/RCC/FDR Paving	3%	12%	85%
Building Materials Dealers	75%	15%	10%
Packaged Product Producers	75%	15%	10%
Concrete Pipe	35%	10%	55%
Prestressed Concrete	7%	50%	43%
Interlocking Pavers	79%	13%	8%
Fiber Cement Siding	85%	15%	0%
Waste S/S	0%	30%	70%
Concrete Roof Tile	80%	10%	10%
SC/RCC Water Resources	0%	10%	90%

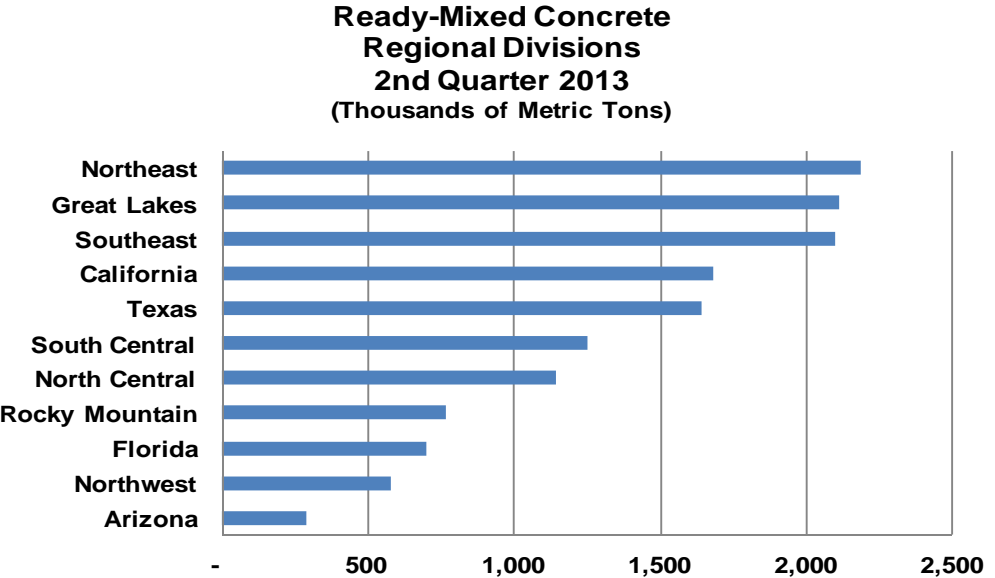
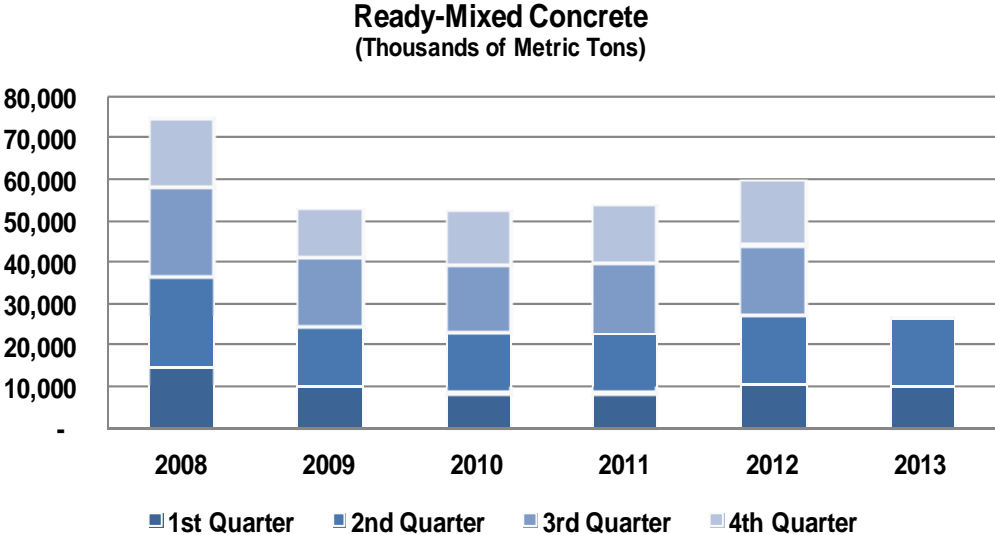


# USER GROUPS



# Ready-Mixed Concrete: Data

Ready-mixed concrete accounted for 68.4% of total North American cement consumption in the second quarter of 2013 (16,149,180 mt). This reflects a 2.1% decrease from second quarter 2012. The largest regional cement consumer for the ready-mixed segment was the Northeast with 2,183,232 mt, followed by the Great Lakes region with 2,110,414 mt.



## Ready-Mixed Concrete: Analysis

Ready-mixed refers to concrete that is batched for delivery from a central plant instead of mixed on the job site. Ready-mixed concrete is shipped to every market segment in North America. As a result, the market drivers for ready mix users generally mirror total cement demand. The principal exception is large highway construction projects which tend to rely on Street & Highway contractors.

Ready-Mixed Concrete (000 mt)							PCA Projection	
Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>15,101</b>	<b>10,306</b>	<b>8,630</b>	<b>8,688</b>	<b>10,971</b>	<b>10,637</b>		
% Change Y/Y	-12.0%	-31.8%	-16.3%	0.7%	26.3%	-3.0%		
% Change YTD	-12.0%	-31.8%	-16.3%	0.7%	26.3%	-3.0%		
<b>2nd Quarter</b>	<b>21,633</b>	<b>14,734</b>	<b>14,958</b>	<b>14,628</b>	<b>16,489</b>	<b>16,149</b>		
% Change Y/Y	-12.1%	-31.9%	1.5%	-2.2%	12.7%	-2.1%		
% Change YTD	-12.0%	-31.8%	-5.8%	-1.2%	17.8%	-2.5%		
<b>3rd Quarter</b>	<b>21,802</b>	<b>16,213</b>	<b>16,086</b>	<b>16,539</b>	<b>17,240</b>			
% Change Y/Y	-11.9%	-25.6%	-0.8%	2.8%	4.2%			
% Change YTD	-12.0%	-29.5%	-3.8%	0.5%	12.2%			
<b>4th Quarter</b>	<b>16,748</b>	<b>12,221</b>	<b>13,171</b>	<b>14,342</b>	<b>15,296</b>			
% Change Y/Y	-20.7%	-27.0%	7.8%	8.9%	6.7%			
% Change YTD	-14.1%	-29.0%	-1.2%	2.6%	10.7%			
<b>Total</b>	<b>75,285</b>	<b>53,474</b>	<b>52,846</b>	<b>54,197</b>	<b>59,996</b>	<b>26,786</b>	<b>61,673</b>	<b>67,758</b>
% Change Y/Y	-14.1%	-29.0%	-1.2%	2.6%	10.7%		2.8%	9.9%

Like overall cement consumption, ready-mixed volumes in the first half of the year were weak against 2012 levels. Distortions in growth rates attributable to weather, not market fundamentals, were responsible for this weakness. Ready-mixed volumes in the second half of the year are expected to strengthen and finish the year with around 3% growth.

Consumption of ready-mixed concrete will be led by the residential construction market. Home inventories stand at just under a 4 months supply at current daily selling rates, a significant improvement from year-ago levels. Furthermore, home prices are rising—creating the ideal environment for acceleration in home building. Favorable fundamentals in multifamily construction, such as increased household formation in the midst of damaged credit, an aging population which requires assisted living, and banks' diminished lending risk will position multifamily construction for double-digit growth for the next several years.

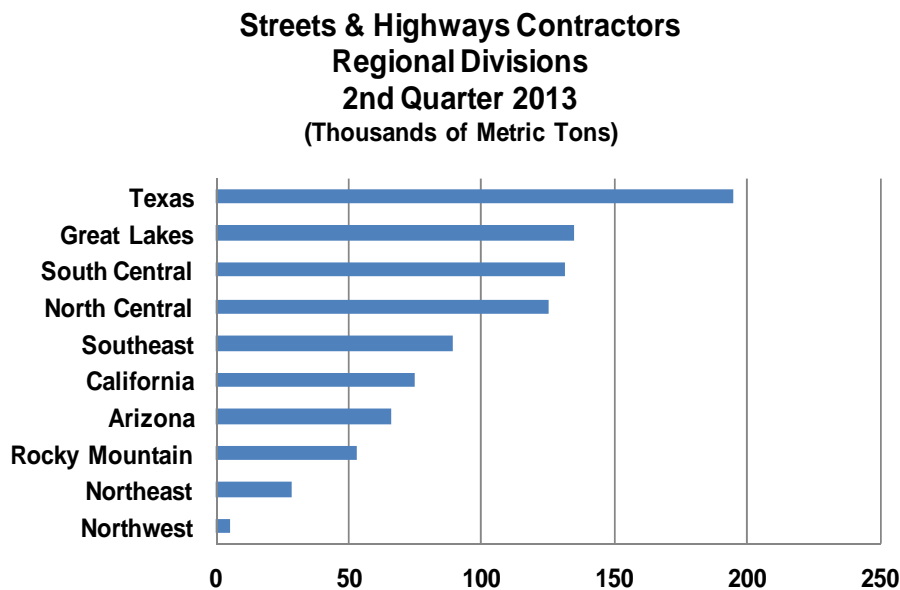
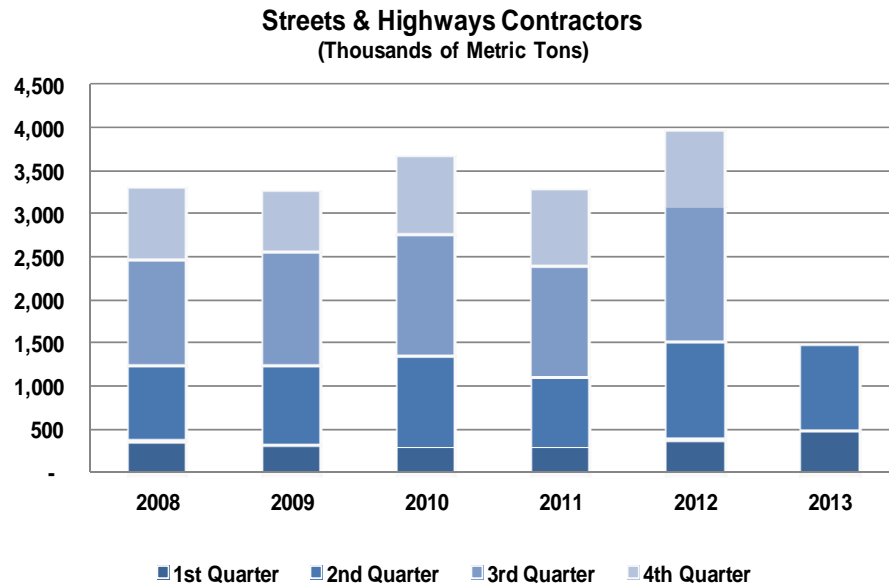
Ready-mixed concrete will also benefit from nonresidential construction, which is still recovering from depressed occupancy and usage rates and tight lending standards. PCA expects cement consumed by commercial projects to be approximately 13%, coming off double-digit growth in 2012. Public spending will constrain this segment's full potential in 2013, but is expected to turn into a small positive contributor to growth in 2014 as a more prosperous job market heals state balance sheets. PCA forecasts nearly 3% growth in 2013 followed by a 10% increase in 2014.



## Streets & Highways Contractors: Data

The Streets & Highways Contractors segment was responsible for 4.1% of total North American shipments in second quarter 2013, accounting for 961,378 mt, and translates to a 14.8% year-ago decline. In second quarter 2013, Texas was the largest regional cement consumer in this category with 194,616 mt, followed by the Great Lakes region with 134,799 mt.

*NOTE: This segment does not equal the total amount of portland cement used to pave streets and highways because it does not include cement used to make ready-mixed concrete, which is then used by streets and highways contractors.*



## Streets & Highways Contractors: Analysis

The outlook for Streets & Highways contractors cement volume is based on two key assessments including: 1) the adverse impact on discretionary public construction activity due to state deficits, and 2) highway funding through legislation as recently witnessed with MAP-21.

Streets & Highways Contractors (000 mt)							PCA Projection	
Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>387</b>	<b>348</b>	<b>303</b>	<b>309</b>	<b>410</b>	<b>519</b>		
% Change Y/Y	1.0%	-10.2%	-12.8%	2.0%	32.7%	26.6%		
% Change YTD	1.0%	-10.2%	-12.8%	2.0%	32.7%	26.6%		
<b>2nd Quarter</b>	<b>861</b>	<b>890</b>	<b>1,068</b>	<b>825</b>	<b>1,129</b>	<b>961</b>		
% Change Y/Y	-4.0%	3.5%	20.0%	-22.8%	36.9%	-14.8%		
% Change YTD	-2.5%	-0.8%	10.8%	-17.3%	35.7%	-3.8%		
<b>3rd Quarter</b>	<b>1,217</b>	<b>1,332</b>	<b>1,403</b>	<b>1,268</b>	<b>1,547</b>			
% Change Y/Y	-10.7%	9.4%	5.3%	-9.6%	22.1%			
% Change YTD	-6.7%	4.3%	7.9%	-13.4%	28.5%			
<b>4th Quarter</b>	<b>857</b>	<b>706</b>	<b>900</b>	<b>894</b>	<b>897</b>			
% Change Y/Y	-6.7%	-17.6%	27.4%	-0.7%	0.4%			
% Change YTD	-6.7%	-1.4%	12.1%	-10.3%	20.9%			
<b>Total</b>	<b>3,322</b>	<b>3,276</b>	<b>3,674</b>	<b>3,295</b>	<b>3,984</b>	<b>1,481</b>	<b>3,934</b>	<b>3,948</b>
% Change Y/Y	-6.7%	-1.4%	12.1%	-10.3%	20.9%		-1.2%	0.4%

The Streets & Highways Contractors segment is expected to finish the year with slight contraction, as public sector conditions are expected to remain adverse in the near-term. As the economy gains traction in 2014, however, job gains and rising home prices will support stronger construction spending at the local level.

Perhaps a reprioritizing of state outlays will also come to the benefit of infrastructure projects. For instance, highway/road discretionary spending accounted for roughly 2.4% of total state expenditures in the years prior to the downturn. By 2010, this proportion dropped to 1.8% — to the detriment of infrastructure. PCA expects the share dedicated to roads to increase to 2.0%, mindful of competing budget priorities, but also recognizing that the neglect of roads may have generated pent-up infrastructure demand.

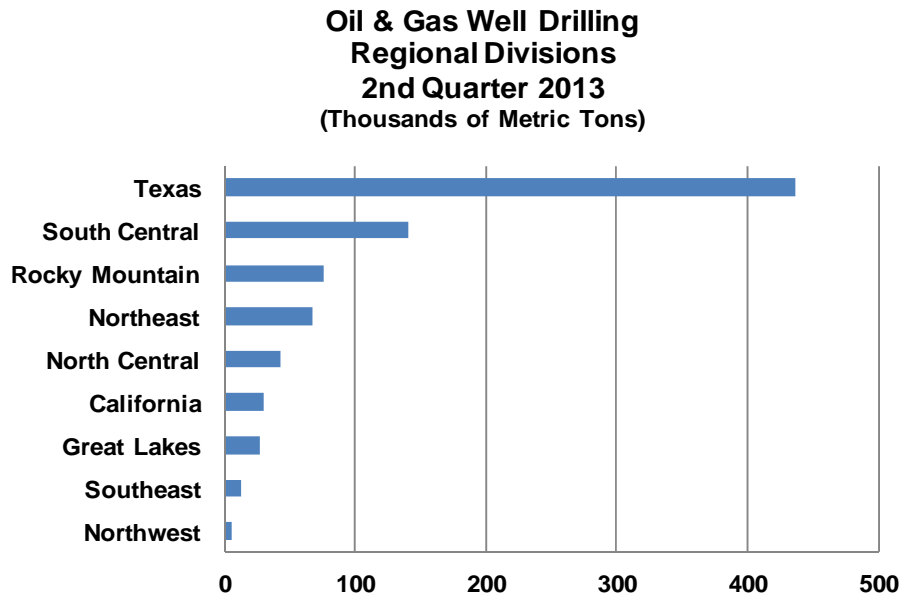
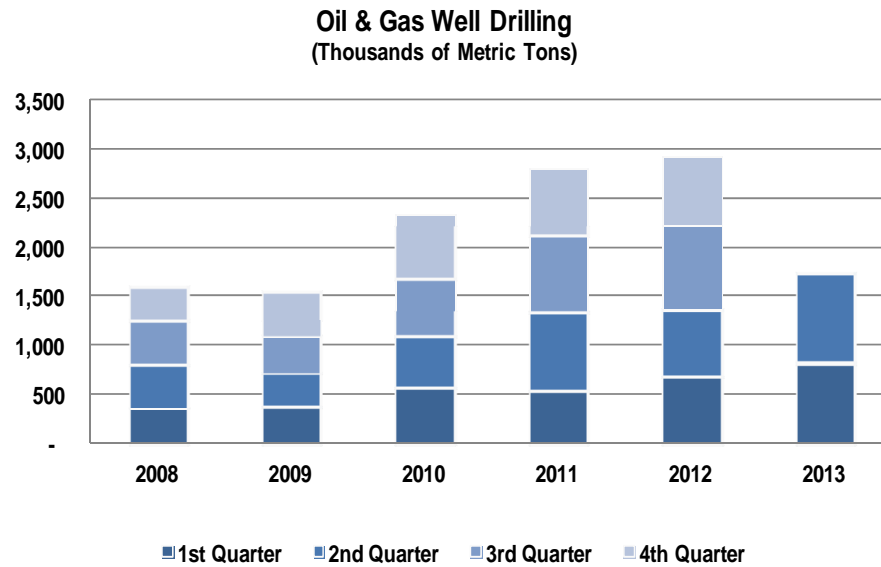
Not only will state and local budgets grow organically from strengthening of labor markets and increased revenue from rising home prices, a new highway bill represents a ten-fold increase to TIFIA funding. This will provide greater ability for state and local governments to finance larger, perhaps more cement-intensive projects.

The Streets & Highways Contractors segment finished 2012 with strong growth. These high growth rates are in contrast to PCA's estimates of only modest growth in Streets & Highways in 2012. PCA attributes some of the growth in this survey to the inclusion of ready-mixed concrete reported in this segment. Slight contraction is expected for this user-group in 2013 as lingering budget pressures will characterize its near-term path. Going beyond 2013, PCA expects successive gains throughout the back end of the forecast horizon.

## Oil & Gas Well Drilling: Data

In second quarter 2013, the Oil & Gas Well Drilling segment accounted for 910,213 mt of portland cement, translating into a 32.1% increase from second quarter 2012. The Oil & Gas Well Drilling segment represents 3.9% of total consumption. During second quarter 2013, Texas was the largest regional cement consumer in this category with 436,507 mt, followed by the South Central region with 140,364 mt.

*NOTE: Cement for oil and gas well drilling is primarily used for below ground casing and grouting.*



## Oil & Gas Well Drilling: Analysis

The stock of active rotary oil rigs averaged 1,607 through September in North America, which is virtually flat against the rig count in the same period of the prior year.

Oil & Gas Well Drilling (000 mt)							PCA Projection	
Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>374</b>	<b>394</b>	<b>580</b>	<b>535</b>	<b>686</b>	<b>836</b>		
% Change Y/Y	-34.4%	5.2%	47.2%	-7.7%	28.3%	21.9%		
% Change YTD	-34.4%	5.2%	47.2%	-7.7%	28.3%	21.9%		
<b>2nd Quarter</b>	<b>439</b>	<b>324</b>	<b>524</b>	<b>828</b>	<b>689</b>	<b>910</b>		
% Change Y/Y	-33.3%	-26.1%	61.7%	58.1%	-16.8%	32.1%		
% Change YTD	-33.8%	-11.7%	53.7%	23.5%	0.9%	27.0%		
<b>3rd Quarter</b>	<b>454</b>	<b>377</b>	<b>601</b>	<b>769</b>	<b>866</b>			
% Change Y/Y	-36.2%	-17.0%	59.5%	28.1%	12.5%			
% Change YTD	-34.7%	-13.6%	55.7%	25.1%	5.1%			
<b>4th Quarter</b>	<b>333</b>	<b>450</b>	<b>651</b>	<b>681</b>	<b>686</b>			
% Change Y/Y	-39.0%	35.4%	44.5%	4.6%	0.7%			
% Change YTD	-35.6%	-3.4%	52.4%	19.5%	4.0%			
<b>Total</b>	<b>1,600</b>	<b>1,545</b>	<b>2,355</b>	<b>2,814</b>	<b>2,927</b>	<b>1,747</b>	<b>3,056</b>	<b>2,954</b>
% Change Y/Y	-35.6%	-3.4%	52.4%	19.5%	4.0%		4.4%	-3.3%

The continuing weakness in world GDP growth has put downward pressure on commodity prices, including oil, in the near-term. As the European debt crisis and China's inflation targeting measures continue to ease, in tandem with a more ardent U.S. growth scenario, demand for oil will begin to accelerate, bidding up the cost per barrel. Beyond 2017, synchronized world demand — especially among developing and transitional economies — will cause a more sustained rise in oil prices.

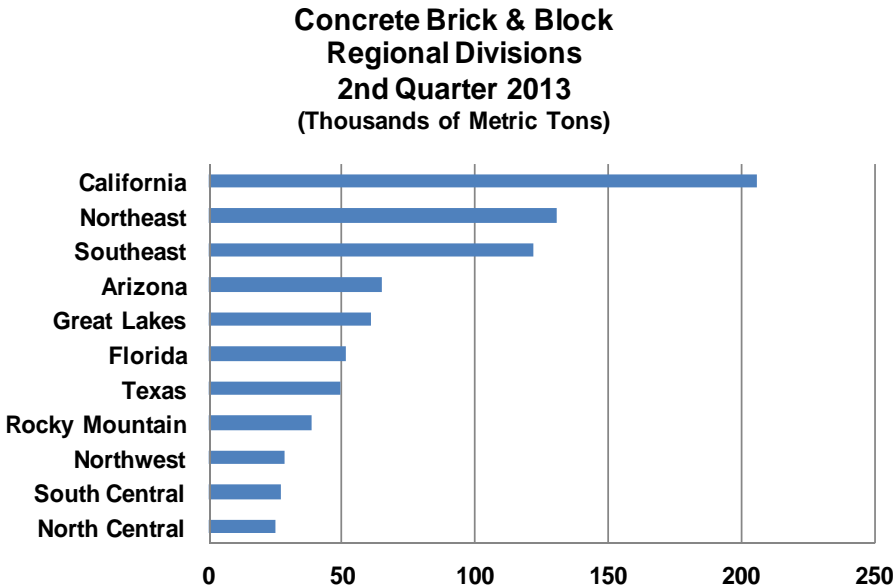
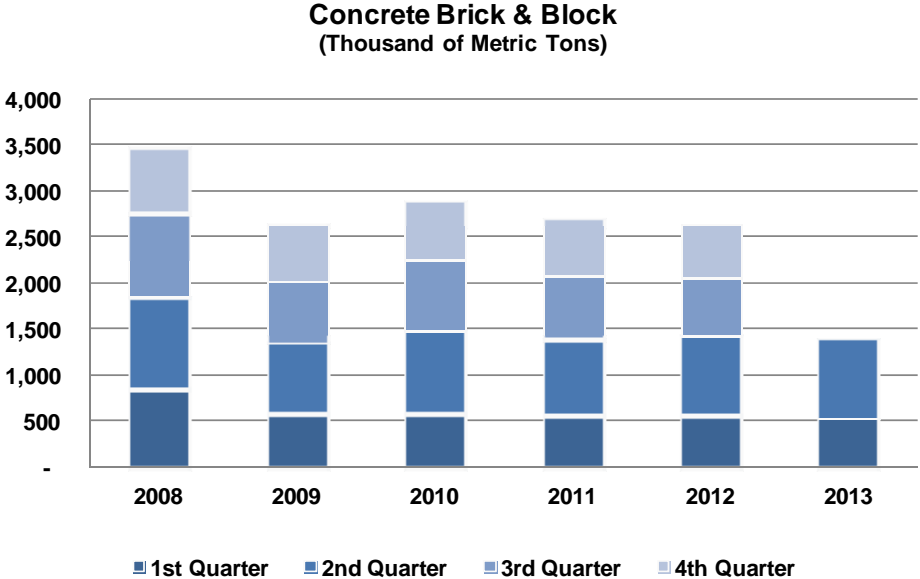
PCA expects the price of oil to fall in 2014, followed by a modest increase in 2015 and more sizable gains in ensuing years. The Oil & Gas Well Drilling segment is expected to finish the year with 4.4% growth, followed by a slowdown in 2014.

While natural gas prices are expected to remain stable for some time, investment in the natural gas sector has provided upside benefit for cement demand. The development of conventional and non-traditional (shale fields) natural gas fields provides not only direct on-site cement demand but also in the form of secondary cement consumption. This secondary cement demand can often be reflected in non-traditional paving applications (FDR) for access and distribution roads.

# Concrete Brick & Block Manufacturers: Data

The Concrete Brick & Block Manufacturers segment was the fourth largest user segment in second quarter 2013 with 3.7% of total North American consumption. Consumption was 865,432 mt, up 2.8% from second quarter 2012. During second quarter 2013, the California region was the largest regional cement consumer in this category with 206,029 mt, followed by the Northeast region with 130,680 mt.

*NOTE: Some of the decline in tonnage after 2005 in this category can be attributed to the creation and distribution of volumes into the newly added Interlocking Pavers category in 2006. Interlocking Pavers were previously reported in this category.*



## Concrete Brick & Block Manufacturers: Analysis

The Concrete Brick & Block Manufacturers segment consumes cement that is used to produce bricks manufactured from regular aggregate concrete to various mixtures of lightweight aggregates.

Concrete Brick & Block (000 mt)							PCA Projection	
Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>852</b>	<b>594</b>	<b>589</b>	<b>572</b>	<b>576</b>	<b>527</b>		
% Change Y/Y	-13.4%	-30.3%	-0.8%	-2.8%	0.7%	-8.5%		
% Change YTD	-13.4%	-30.3%	-0.8%	-2.8%	0.7%	-8.5%		
<b>2nd Quarter</b>	<b>1,000</b>	<b>744</b>	<b>891</b>	<b>816</b>	<b>842</b>	<b>865</b>		
% Change Y/Y	-18.9%	-25.6%	19.7%	-8.4%	3.1%	2.8%		
% Change YTD	-16.4%	-27.7%	10.6%	-6.2%	2.1%	-1.8%		
<b>3rd Quarter</b>	<b>918</b>	<b>682</b>	<b>779</b>	<b>694</b>	<b>656</b>			
% Change Y/Y	-24.4%	-25.7%	14.3%	-11.0%	-5.5%			
% Change YTD	-19.3%	-27.1%	11.8%	-7.8%	-0.4%			
<b>4th Quarter</b>	<b>708</b>	<b>603</b>	<b>625</b>	<b>613</b>	<b>566</b>			
% Change Y/Y	-29.8%	-14.8%	3.6%	-1.9%	-7.6%			
% Change YTD	-21.6%	-24.6%	9.9%	-6.5%	-2.0%			
<b>Total</b>	<b>3,477</b>	<b>2,623</b>	<b>2,883</b>	<b>2,695</b>	<b>2,640</b>	<b>1,393</b>	<b>2,694</b>	<b>3,002</b>
% Change Y/Y	-21.6%	-24.6%	9.9%	-6.5%	-2.0%		2.1%	11.4%

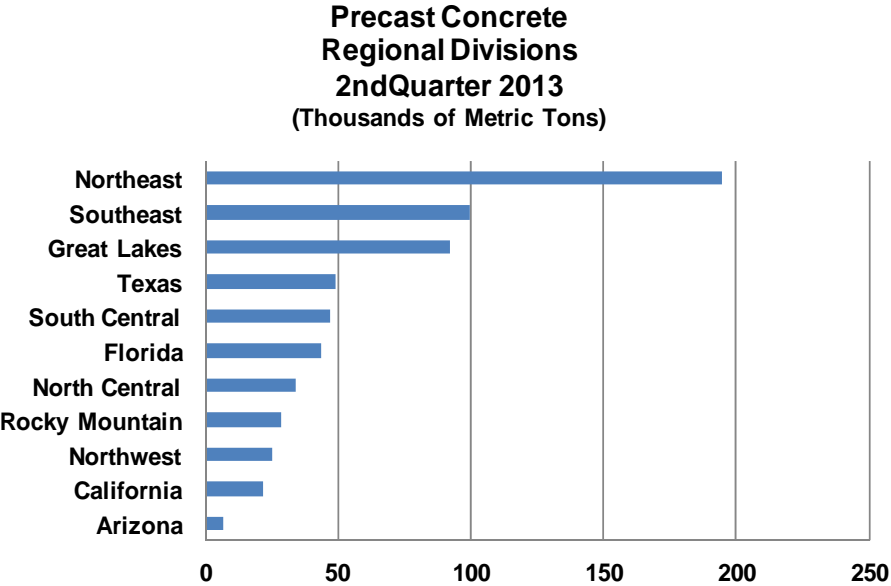
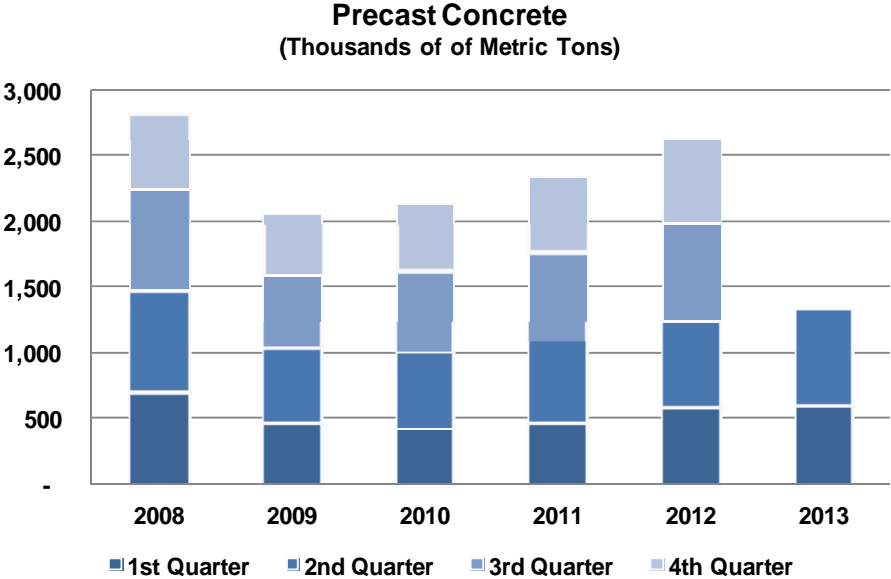
Cement consumption in the Brick & Block segment is concentrated in the residential (43%) and nonresidential (47%) sectors with the remaining 10% allocated towards public construction. PCA now expects nearly one million housing starts this year, which will aid volumes for this segment. Given this user-group's regional volume distribution, with shipments highly concentrated in the Southeast, Northeast, California, Florida, and Arizona, strong growth potential exists. Nonresidential construction gains will also provide upside demand as expected ROIs continue to heal.

The Brick & Block segment ended 2012 with negative growth on the backs of only tepid growth in the first two quarters. First half 2013 volumes stand relatively flat, much like many other user-groups when compared against a mild first quarter 2012 and given second quarter 2013's unusually wet weather. PCA expects subsequent quarters to record more significant volume gains, with this segment ending the year with modest growth. Double-digit growth is expected in 2014 and in subsequent years.

# Precast Concrete: Data

Shipments of portland cement to North American precast manufacturers increased 9.5% to 738,517 mt during the second quarter of 2013 when compared to the year-ago levels. Precast concrete accounted for 3.1% of total portland cement shipments in second quarter 2013. The Northeast region was the largest regional cement consumer in this category with 194,662 mt, followed by the Southeast region with 99,420 mt.

NOTE: Prior to 2006, Prestressed concrete was included in this category.



## Precast Concrete: Analysis

Precast concrete is concrete cast in forms in a controlled environment and allowed to achieve a specified strength prior to placement on location. Examples of products include, but are not limited to, architectural wall panels, catch basin covers, concrete furniture, and floor slabs.

### Precast Concrete (000 mt)

Year							PCA Projection	
	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>702</b>	<b>467</b>	<b>430</b>	<b>466</b>	<b>576</b>	<b>590</b>		
% Change Y/Y	-13.5%	-33.5%	-7.8%	8.3%	23.6%	2.5%		
% Change YTD	-13.5%	-33.5%	-7.8%	8.3%	23.6%	2.5%		
<b>2nd Quarter</b>	<b>774</b>	<b>571</b>	<b>577</b>	<b>633</b>	<b>674</b>	<b>739</b>		
% Change Y/Y	-22.2%	-26.2%	1.0%	9.7%	6.6%	9.5%		
% Change YTD	-18.3%	-29.7%	-3.0%	9.1%	13.8%	6.3%		
<b>3rd Quarter</b>	<b>773</b>	<b>563</b>	<b>615</b>	<b>663</b>	<b>736</b>			
% Change Y/Y	-24.4%	-27.1%	9.2%	7.8%	11.0%			
% Change YTD	-20.5%	-28.8%	1.3%	8.6%	12.8%			
<b>4th Quarter</b>	<b>580</b>	<b>461</b>	<b>509</b>	<b>580</b>	<b>640</b>			
% Change Y/Y	-36.2%	-20.6%	10.4%	13.9%	10.5%			
% Change YTD	-24.3%	-27.1%	3.3%	9.9%	12.2%			
<b>Total</b>	<b>2,829</b>	<b>2,062</b>	<b>2,131</b>	<b>2,341</b>	<b>2,626</b>	<b>1,329</b>	<b>2,758</b>	<b>3,027</b>
% Change Y/Y	-24.3%	-27.1%	3.3%	9.9%	12.2%		5.0%	9.8%

The collapse of nonresidential construction, which is responsible for half of precast cement consumption, led to a dramatic tonnage loss for this segment. The dissipation of stimulus funded public works projects also weighed on growth. Volume distribution for this segment is allocated 43% towards public construction, which PCA predicts will be negative in 2013 as federal cutbacks and lingering state and local budget pressure characterize the near-term public spending realities. While only minimally concentrated in the residential sector, it may pick up some upside potential from residential market gains.

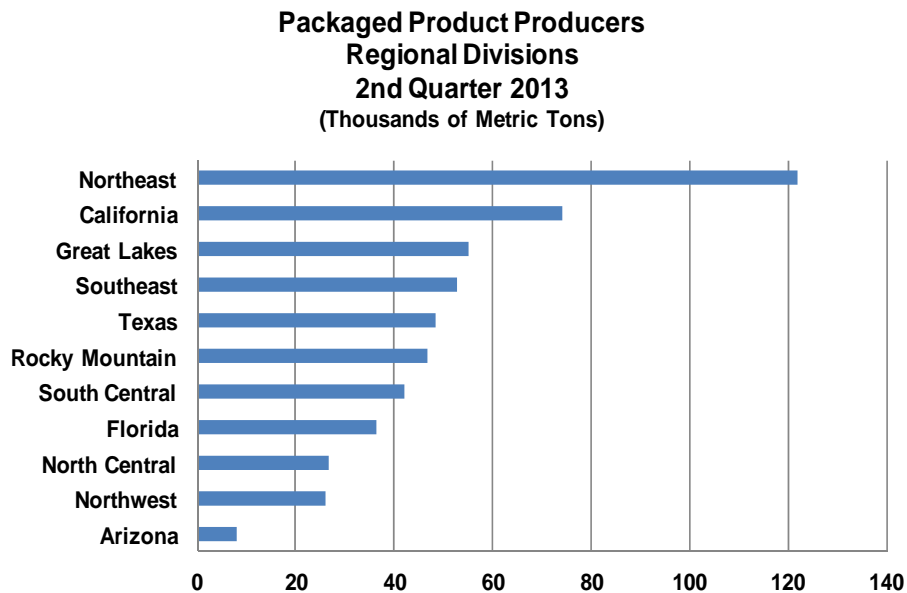
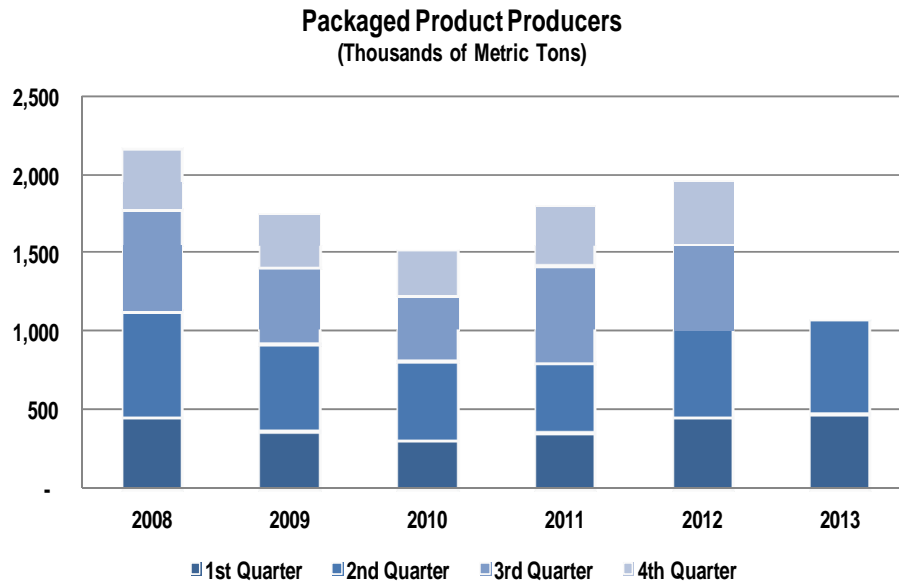
Cement consumed for nonresidential construction projects is expected to finish 2013 with double-digit growth—on top of similar growth rates in 2012. However, percentage gains for both precast and non-residential construction must be kept in the context that they are based off historically low levels. Even with three consecutive years of strong growth, this segment's volumes are still less than half of 2005 levels.

PCA's latest forecast suggests continued growth in expected ROI's on commercial properties, led by a stronger labor market and the mitigation of structural impediments to expected ROI's such as depressed occupancy and usage rates and tight lending standards. Further, uncertainty hampering consumer sentiment and investment spending continues to dissolve. As fiscal conditions at the state and local level continue to improve as hiring and home prices accelerate, this segment will enjoy positive public demand. PCA forecasts 5% growth in 2013 followed by stronger gains in 2014 and beyond.



## Packaged Product Producers: Data

This user segment consumed approximately 601,016 mt of portland cement during the second quarter of 2013, a 7.4% increase from second quarter 2012. The Packaged Product Producers segment accounted for 2.5% of total consumption. During second quarter 2013, the Northeast region was the largest regional cement consumer in this category with 121,929 mt, followed by the California region with 74,067 mt.



## Packaged Product Producers: Analysis

The Packaged Product Producers segment includes bagged cement and mixtures (i.e., SAKRETE®, QUIKCRETE®) producers.

NOTE: Prior to 2005, cement consumption in this user segment was captured in the All Other category.

Packaged Product Producers (000 mt)							PCA Projection	
Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>449</b>	<b>361</b>	<b>309</b>	<b>356</b>	<b>451</b>	<b>470</b>		
% Change Y/Y	-31.4%	-19.7%	-14.4%	15.4%	26.7%	4.2%		
% Change YTD	-31.4%	-19.7%	-14.4%	15.4%	26.7%	4.2%		
<b>2nd Quarter</b>	<b>677</b>	<b>557</b>	<b>494</b>	<b>441</b>	<b>560</b>	<b>601</b>		
% Change Y/Y	-24.3%	-17.7%	-11.3%	-10.7%	26.8%	7.4%		
% Change YTD	-27.3%	-18.5%	-12.5%	-0.7%	26.8%	6.0%		
<b>3rd Quarter</b>	<b>655</b>	<b>483</b>	<b>417</b>	<b>618</b>	<b>550</b>			
% Change Y/Y	-18.4%	-26.1%	-13.7%	48.0%	-11.0%			
% Change YTD	-24.3%	-21.3%	-12.9%	16.0%	10.3%			
<b>4th Quarter</b>	<b>389</b>	<b>351</b>	<b>306</b>	<b>389</b>	<b>393</b>			
% Change Y/Y	-28.6%	-9.6%	-13.0%	27.4%	0.8%			
% Change YTD	-25.1%	-19.2%	-12.9%	18.3%	8.3%			
<b>Total</b>	<b>2,169</b>	<b>1,753</b>	<b>1,526</b>	<b>1,804</b>	<b>1,953</b>	<b>1,071</b>	<b>2,116</b>	<b>2,383</b>
% Change Y/Y	-25.1%	-19.2%	-12.9%	18.3%	8.3%		8.3%	12.6%

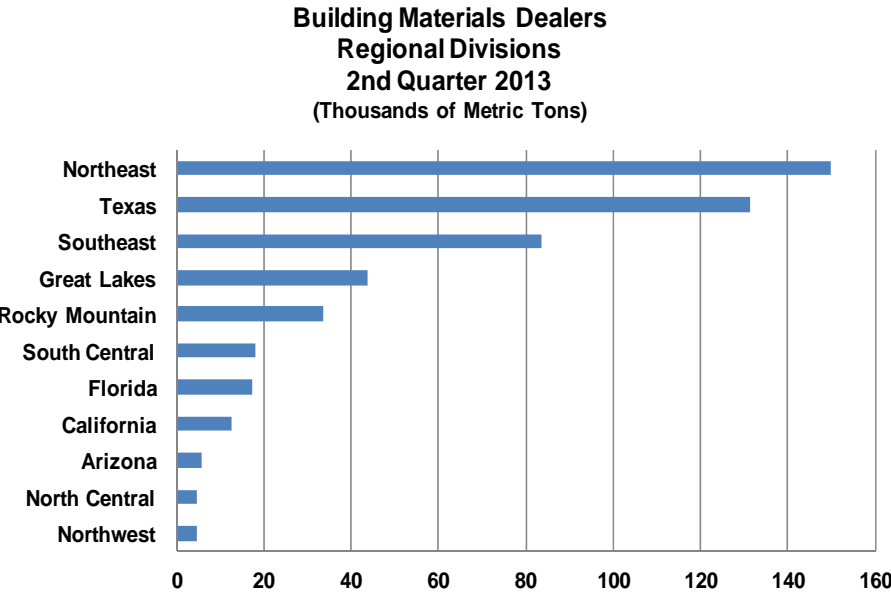
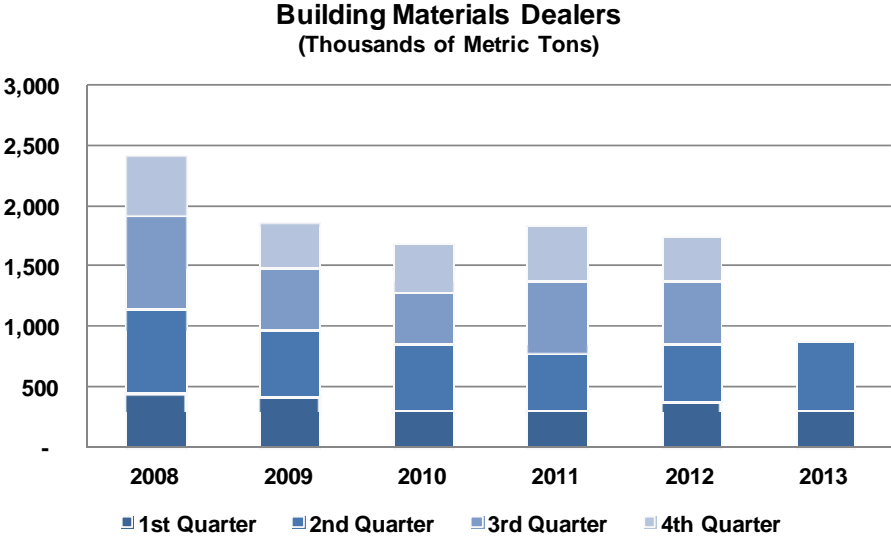
The residential sector accounts for 75% of this segment's consumption and as such is expected to grow alongside gains made in residential construction. Growth in this segment in 2011 may have been attributed to improvement spending which is generally less cyclical than overall construction spending. During a recession, builders are less inclined to invest in large projects. They may, however, be willing to do more maintenance and repair work, tackling smaller, more modest projects. Now that the residential sector has entered a stage of more genuine recovery, this sector is expected to record strong growth rates over the next several years.

Following over 8% growth in 2012, PCA expects the Packaged Product Producers segment to experience similar growth in 2013. As residential building continues to ramp up down the forecast horizon, double-digit growth is expected to be sustained for several years.

# Building Materials Dealers: Data

This user segment consumed approximately 556,084 mt of portland cement during second quarter 2013, a 16.8% increase from second quarter 2012. The Building Material Dealers segment accounted for 2.4% of total consumption. The Northeast region was the largest regional cement consumer in this category with 149,630 mt, followed by Texas with 131,491 mt.

*NOTE: This segment was added to the survey in 2006. Prior to 2006, consumption for this category was captured in the All Other segment.*



## Building Materials Dealers: Analysis

This segment consists of enterprises (i.e. Home Depot, Lowes, Menards) engaged in retailing products such as manufactured bagged cement, fencing, glass, doors, plumbing fixtures and supplies, electrical supplies, prefabricated buildings and kits, and kitchen and bath cabinets and countertops.

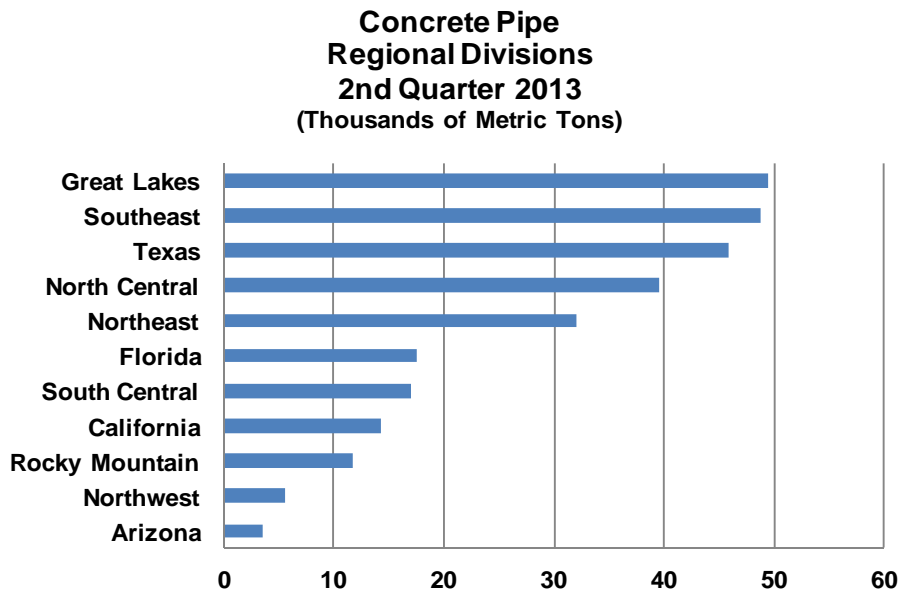
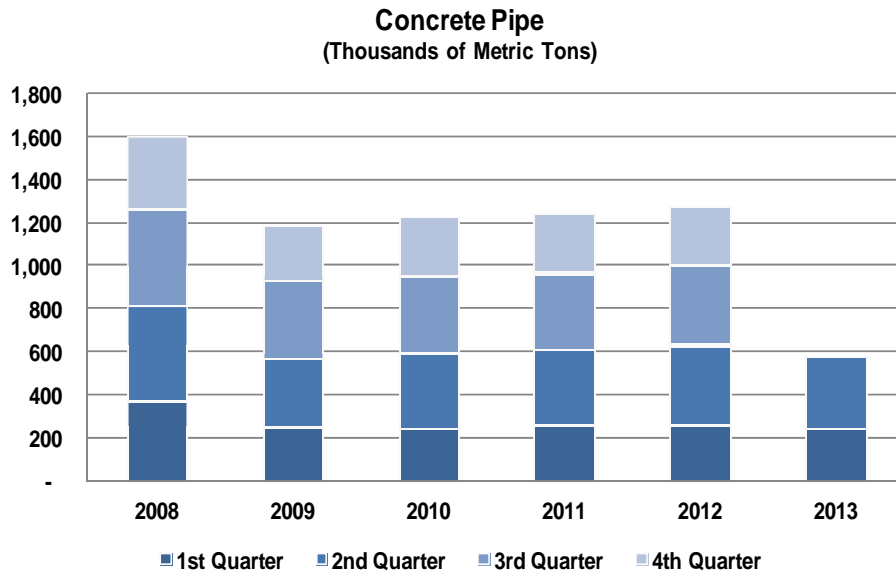
Building Materials Dealers (000 mt)							PCA Projection	
Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>447</b>	<b>414</b>	<b>312</b>	<b>307</b>	<b>379</b>	<b>311</b>		
% Change Y/Y	-17.1%	-7.4%	-24.6%	-1.6%	23.5%	-18.0%		
% Change YTD	-17.1%	-7.4%	-24.6%	-1.6%	23.5%	-18.0%		
<b>2nd Quarter</b>	<b>705</b>	<b>553</b>	<b>538</b>	<b>466</b>	<b>476</b>	<b>556</b>		
% Change Y/Y	-20.8%	-21.6%	-2.7%	-13.4%	2.1%	16.8%		
% Change YTD	-19.4%	-16.1%	-12.1%	-9.1%	10.6%	1.4%		
<b>3rd Quarter</b>	<b>770</b>	<b>517</b>	<b>436</b>	<b>612</b>	<b>523</b>			
% Change Y/Y	6.6%	-32.9%	-15.7%	40.4%	-14.5%			
% Change YTD	-10.6%	-22.8%	-13.3%	7.7%	-0.5%			
<b>4th Quarter</b>	<b>502</b>	<b>370</b>	<b>397</b>	<b>441</b>	<b>369</b>			
% Change Y/Y	-15.5%	-26.3%	7.3%	11.1%	-16.3%			
% Change YTD	-11.7%	-23.5%	-9.2%	8.5%	-4.3%			
<b>Total</b>	<b>2,424</b>	<b>1,854</b>	<b>1,683</b>	<b>1,826</b>	<b>1,747</b>	<b>867</b>	<b>1,832</b>	<b>2,003</b>
% Change Y/Y	-11.7%	-23.5%	-9.2%	8.5%	-4.3%		4.9%	9.3%

Similar to the Packaged Products Producers segment, the Building Materials Dealers industry is heavily reliant on performance in the residential sector (75%), and is fairly unsaturated in the nonresidential (15%) and public (10%) construction sectors. Consequently, its growth will be primarily contingent upon residential gains. Demand for this user-group is a combination of starts-related needs and improvement spending. PCA has upwardly revised its starts projections for 2013 and now expects nearly one million units to materialize this year. Cement designated for improvements projects is projected to grow more modestly, although still be a contributor to growth.

This segment ended 2011 with positive growth and, like the Packaged Products Producers segment, this may have been attributed to countercyclical improvement projects. Its 2012 volumes dipped due to weak performance in the last two quarters. PCA expects growth for this user-group to approach 5% this year with larger tonnage increases in following years as improvement-based cement consumption increases alongside a burgeoning starts market.

## Concrete Pipe: Data

The Concrete Pipe segment consumed approximately 338,605 mt of portland cement during the second quarter of 2013 (1.4% share of total cement consumption). This reflects an 8.2% decrease from second quarter 2012. During second quarter 2013, the Great Lakes region was the largest regional cement consumer in this category with 49,454 mt, followed by the Southeast region with 48,732 mt.



## Concrete Pipe: Analysis

Concrete pipe serves as a conduit material for irrigation, water supply lines, sanitary sewers, culverts, and storm drains.

### Concrete Pipe (000 mt)

#### PCA Projection

Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>374</b>	<b>252</b>	<b>242</b>	<b>261</b>	<b>265</b>	<b>242</b>		
% Change Y/Y	-22.8%	-32.8%	-3.7%	7.7%	1.7%	-8.7%		
% Change YTD	-22.8%	-32.8%	-3.7%	7.7%	1.7%	-8.7%		
<b>2nd Quarter</b>	<b>439</b>	<b>324</b>	<b>353</b>	<b>353</b>	<b>369</b>	<b>339</b>		
% Change Y/Y	-27.0%	-26.1%	8.7%	0.1%	4.6%	-8.2%		
% Change YTD	-25.2%	-29.1%	3.2%	3.2%	3.3%	-8.4%		
<b>3rd Quarter</b>	<b>454</b>	<b>358</b>	<b>365</b>	<b>353</b>	<b>367</b>			
% Change Y/Y	-19.5%	-21.1%	1.8%	-3.2%	4.0%			
% Change YTD	-23.2%	-26.3%	2.7%	0.8%	3.6%			
<b>4th Quarter</b>	<b>333</b>	<b>246</b>	<b>270</b>	<b>272</b>	<b>273</b>			
% Change Y/Y	-29.8%	-26.1%	10.0%	0.8%	0.0%			
% Change YTD	-24.7%	-26.2%	4.2%	0.8%	2.8%			
<b>Total</b>	<b>1,600</b>	<b>1,180</b>	<b>1,230</b>	<b>1,239</b>	<b>1,274</b>	<b>581</b>	<b>1,243</b>	<b>1,288</b>
% Change Y/Y	-24.7%	-26.2%	4.2%	0.8%	2.8%		-2.4%	3.6%

The collapse of the residential construction sector (35% concentration) exerted a sharp adverse effect on the Concrete Pipe segment's volumes. Demand in 2010-2012 has been supported by government stimulus, resulting in moderate gains. While public works construction absorbed some of the cement demand lost by the battered residential market in recent years for this user-group, the rebounding housing environment will give concrete pipe further traction.

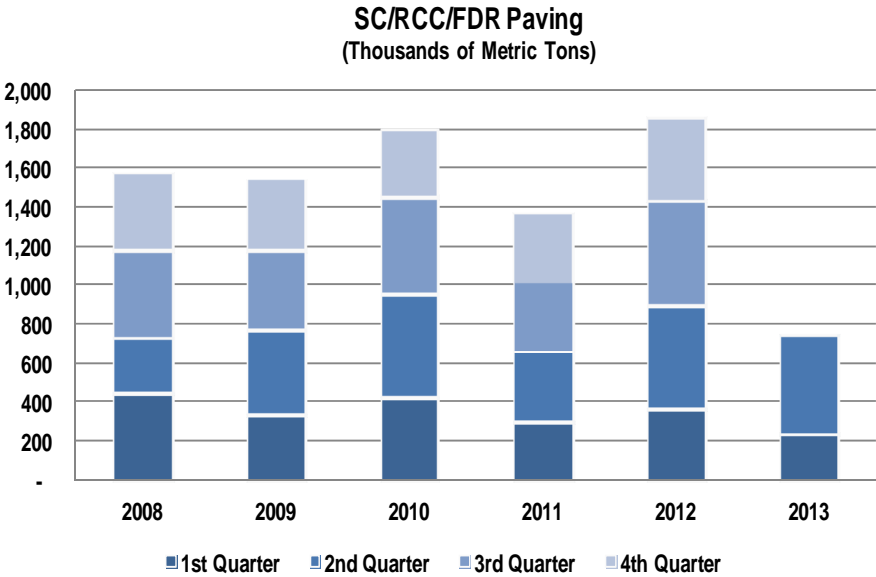
Presently, an estimated 55% of cement targeted to the concrete pipe segment is invested in public works projects. ARRA funded projects may have supported these gains in recent years; however, with ARRA nearly exhausted, the opportunity for improvement in this segment from a public position remains minimal. Further, forced cut-backs due to budget sequestration will further depress volumes in the near-term. Growth potential exists in the residential (35% concentration) and nonresidential sectors (10% concentration). Fortunately, PCA's expects both these sectors to perform earnestly in 2013 and in subsequent years due to the release of large pent-up demand.

Unlike the Streets & Highways segment, which presently has dedicated funds through Congressional legislation, budget constraints and sequester spending cuts will adversely affect this segment. PCA expects a slight dip in volumes for this user-group in 2013 due to continuing state and local budget pressures. As job creation and higher home prices ameliorate public finances and a full housing market turnaround unfolds, this segment will turn positive quickly.

# Soil-Cement/ Roller Compacted Concrete/ Full-Depth Reclamation for Paving: Data

SC/RCC/FDR paving projects consumed approximately 501,598 mt in the first quarter of 2013 (2.1% share of total cement consumption). This was a decrease of 6.1% from second quarter 2012.

*NOTE: In 2008, cement consumption for the soil-cement and roller compacted concrete paving segments was split into three segments (SC, RCC, and FDR Paving), after having been combined in prior years.*



*NOTE: Regional data withheld due to confidentiality restrictions*

## Soil-Cement/ Roller Compacted Concrete/ Full-Depth Reclamation for Paving: Analysis

Soil-cement or cement-treated base (CTB) is a highly compacted mixture of soil/aggregate, portland cement, and water. Soil-cement is used as a base material under both asphalt and concrete applications such as streets, highways, parking lots, and commercial pavements.

Roller compacted (RCC) concrete is placed with modified asphalt type pavers and compacted. It is typically used for heavy-duty pavements due to its high strength, economy, and ease of placement.

Full-depth reclamation (FDR) with cement is a type of CTB that utilizes the existing asphalt and underlying base materials through an in-place recycling process that creates a strong, durable base that can be surfaced with either concrete, asphalt, or a chip seal.

### SC/RCC/FDR Paving (000 mt)

### PCA Projection

Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>436</b>	<b>334</b>	<b>417</b>	<b>298</b>	<b>357</b>	<b>238</b>		
% Change Y/Y	20.1%	-23.5%	25.0%	-28.7%	19.9%	-33.2%		
% Change YTD	20.1%	-23.5%	25.0%	-28.7%	19.9%	-33.2%		
<b>2nd Quarter</b>	<b>293</b>	<b>437</b>	<b>537</b>	<b>364</b>	<b>534</b>	<b>502</b>		
% Change Y/Y	-21.0%	49.3%	22.8%	-32.3%	47.0%	-6.1%		
% Change YTD	-0.7%	5.7%	23.7%	-30.7%	34.8%	-17.0%		
<b>3rd Quarter</b>	<b>452</b>	<b>416</b>	<b>499</b>	<b>357</b>	<b>545</b>			
% Change Y/Y	-3.0%	-8.0%	20.0%	-28.5%	52.7%			
% Change YTD	-1.6%	0.5%	22.4%	-29.9%	41.1%			
<b>4th Quarter</b>	<b>402</b>	<b>357</b>	<b>353</b>	<b>347</b>	<b>426</b>			
% Change Y/Y	2.3%	-11.3%	-1.0%	-1.6%	22.6%			
% Change YTD	-0.6%	-2.5%	17.0%	-24.4%	36.4%			
<b>Total</b>	<b>1,584</b>	<b>1,544</b>	<b>1,806</b>	<b>1,365</b>	<b>1,862</b>	<b>740</b>	<b>1,870</b>	<b>1,960</b>
% Change Y/Y	-0.6%	-2.5%	17.0%	-24.4%	36.4%		0.4%	4.8%

SCC and FDR are primarily public works applications executed by state, county, or municipal DOT's. Parking lots and access roads offer private sector opportunities. As such, these applications are highly determinant on state and local fiscal positions as well as the municipalities' comfort with the applications' advantages. As PCA's latest forecast suggests, state and local tax revenues have been increasing and a faster job creation scenario will ease current budget perils. Budget constraints can, ironically, provide upside potential for these segments due to their cost effectiveness and politically correct sustainable solutions.

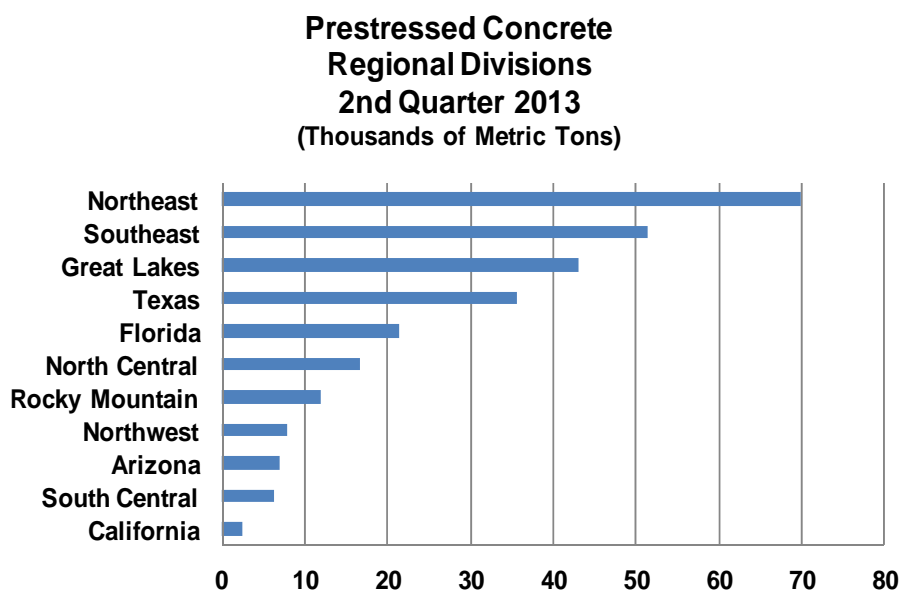
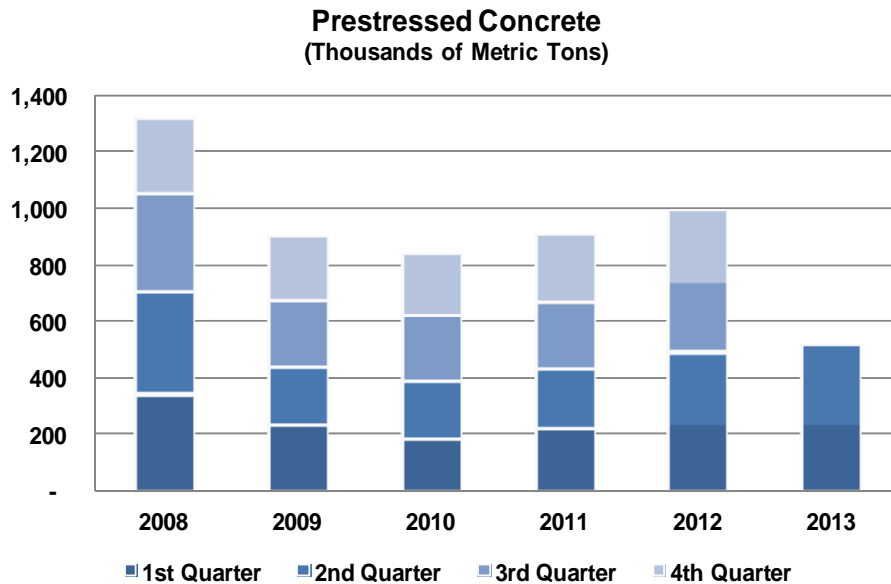
RCC is mixed between private and public applications. The private sector includes commercial and industrial applications such as warehouse facilities, intermodal yards, and ports. In the public sector, applications include military facilities, highway shoulders and bases, and exposed RCC for streets and local roads. With the increased cost and potential supply constraints of asphalt, RCC is being considered as a cost effective alternative. Continued high asphalt cost will provide more opportunities for RCC to compete on an initial cost basis. 2012 ended with an impressive 36% year-over-year growth, but was followed by a dramatic first quarter loss, perhaps indicative of this segment's volatility. Nonetheless, PCA expects flat to modest growth in 2013 and stronger expansion down the forecast horizon as the public sector increasingly has the means to executive paving initiatives.



## Prestressed Concrete: Data

During second quarter 2013, the Prestressed Concrete segment consumed 278,926 mt of cement, up 6.9% from second quarter 2012. This segment accounted for 1.2% of total cement consumption. During second quarter 2013, the Northeast region was the largest regional cement consumer in this segment with 69,962 mt, followed by the Southeast region with 51,416 mt.

*NOTE: Prestressed concrete was added as a new segment in 2006. This user segment includes tons for the concrete railroad tie user segment which was eliminated in 2008. Prior to 2006, portland cement consumption for the Prestressed Concrete user segment was captured either in the All Other segment or the Precast segment.*



## Prestressed Concrete: Analysis

This segment includes cement applications in which compressive stresses are induced by high-strength steel bars in a concrete element. Loads are then applied to the element which will balance the tensile stresses imposed in the element during service. Applications include high-rise office buildings, landmark bridges, parking structures, correctional facilities, stadiums, and schools.

### Prestressed Concrete (000 mt)

PCA Projection

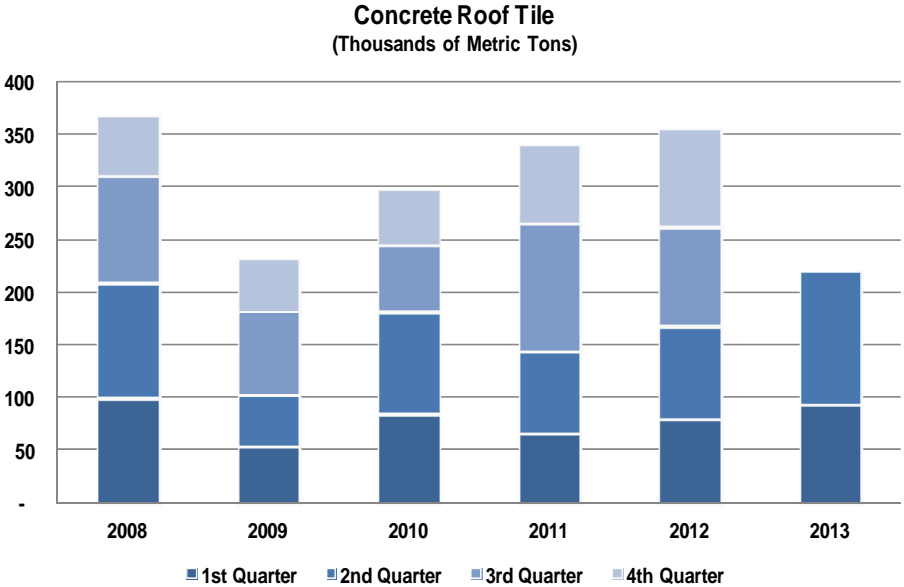
Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>342</b>	<b>231</b>	<b>189</b>	<b>216</b>	<b>235</b>	<b>234</b>		
% Change Y/Y	-14.7%	-32.4%	-18.4%	14.7%	8.7%	-0.2%		
% Change YTD	-14.7%	-32.4%	-18.4%	14.7%	8.7%	-0.2%		
<b>2nd Quarter</b>	<b>369</b>	<b>208</b>	<b>197</b>	<b>215</b>	<b>261</b>	<b>279</b>		
% Change Y/Y	-10.9%	-43.6%	-5.3%	9.2%	21.1%	6.9%		
% Change YTD	-12.8%	-38.2%	-12.2%	11.9%	14.9%	3.5%		
<b>3rd Quarter</b>	<b>348</b>	<b>235</b>	<b>238</b>	<b>238</b>	<b>249</b>			
% Change Y/Y	-10.1%	-32.6%	1.4%	-0.1%	4.6%			
% Change YTD	-11.9%	-36.4%	-7.5%	7.3%	11.2%			
<b>4th Quarter</b>	<b>265</b>	<b>223</b>	<b>216</b>	<b>233</b>	<b>252</b>			
% Change Y/Y	-29.0%	-15.9%	-3.2%	8.2%	8.1%			
% Change YTD	-16.0%	-32.3%	-6.4%	7.5%	10.4%			
<b>Total</b>	<b>1,324</b>	<b>897</b>	<b>839</b>	<b>903</b>	<b>997</b>	<b>513</b>	<b>1,044</b>	<b>1,134</b>
% Change Y/Y	-16.0%	-32.3%	-6.4%	7.5%	10.4%		4.7%	8.6%

The prestressed concrete market closely mirrors the dynamics of the precast segment and will, therefore, reflect market assumptions and potential assumed in PCA's current forecast. While the nonresidential market is continuing to heal structurally, the gradual turnaround in expected ROIs will aid this segment's near to midterm outlook. With volumes standing just over 55% of peak 2005 levels, even modest increases in volume will result in rather high growth rates.

Growth in this segment will be subdued by depressed public spending levels. While state and local spending levels will likely exert a neutral impact on overall public outlays, federal austerity measures will stagnate growth in segments highly concentrated in the public sector. It is, however, expected to record moderate gains this year due to its saturation in the nonresidential market, followed by stronger growth in 2014 and beyond when state and local surpluses materialize.

# Concrete Roof Tile: Data

The Concrete Roof Tile user segment consumed 125,371 mt of portland cement during the second quarter of 2013, a 40.5% increase from 2012 levels. This segment accounted for 0.4% of total cement consumption.



*NOTE: Regional data withheld due to confidentiality restrictions*

## Concrete Roof Tile: Analysis

Concrete roofing tiles offer elegant, enduring aesthetics for house designs and improved marketability for the builder. They are also very versatile and provide greater protection to the homeowner.

### Concrete Roof Tile (000 mt)

Year							PCA Projection	
	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>100</b>	<b>53</b>	<b>84</b>	<b>66</b>	<b>79</b>	<b>94</b>		
% Change Y/Y	-54.1%	-46.9%	57.5%	-21.0%	19.4%	19.1%		
% Change YTD	-54.1%	-46.9%	57.5%	-21.0%	19.4%	19.1%		
<b>2nd Quarter</b>	<b>108</b>	<b>50</b>	<b>98</b>	<b>78</b>	<b>89</b>	<b>125</b>		
% Change Y/Y	-48.2%	-53.4%	96.0%	-21.3%	15.1%	40.5%		
% Change YTD	-51.2%	-50.3%	76.3%	-21.1%	17.1%	30.4%		
<b>3rd Quarter</b>	<b>103</b>	<b>78</b>	<b>64</b>	<b>122</b>	<b>94</b>			
% Change Y/Y	-46.2%	-23.6%	-18.6%	91.6%	-23.2%			
% Change YTD	-49.7%	-41.5%	35.3%	8.1%	-1.4%			
<b>4th Quarter</b>	<b>56</b>	<b>49</b>	<b>51</b>	<b>75</b>	<b>92</b>			
% Change Y/Y	-50.5%	-12.4%	3.3%	46.8%	22.6%			
% Change YTD	-49.8%	-37.0%	28.5%	14.8%	3.9%			
<b>Total</b>	<b>367</b>	<b>231</b>	<b>297</b>	<b>341</b>	<b>354</b>	<b>219</b>	<b>408</b>	<b>446</b>
% Change Y/Y	-49.8%	-37.0%	28.5%	14.8%	3.9%		15.3%	9.3%

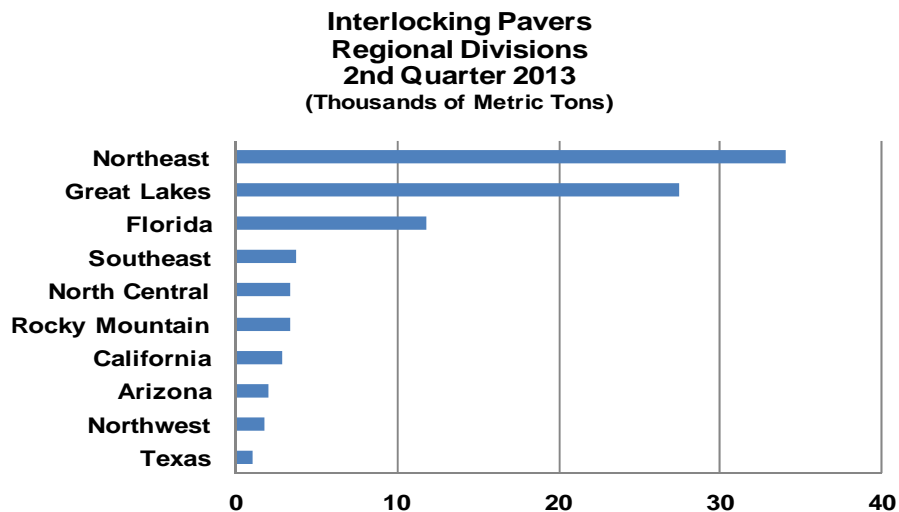
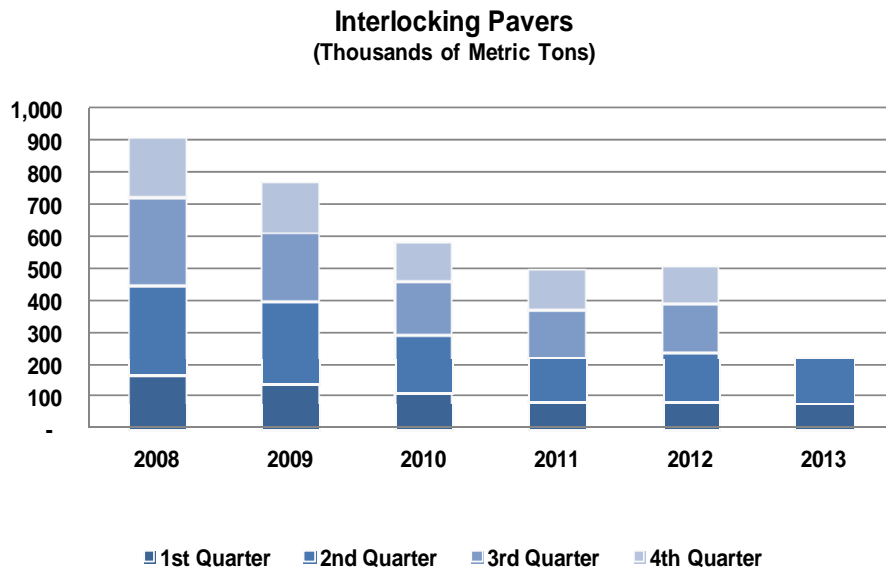
The Concrete Roof Tile industry is targeted heavily toward the residential sector (approximately 80%). Not only did this segment suffer dramatic tonnage loss following the housing collapse, but its concentration in the West and Southeast housing markets, which were particularly battered during the recession, did not provide much support. Now, according to PCA's latest regional forecast, these regions have the strongest future growth potential, which will come to the direct benefit of this segment.

PCA expects a more ambitious increase in concrete roof tile volumes in 2013. Given volume levels have been so low for the Concrete Roof Tile segment, gains made in the residential sector, namely the single family market, will ignite growth. PCA expects this segment to enjoy double-digit growth in 2013, followed by similar growth in 2014.

## Interlocking Pavers: Data

The Interlocking Pavers segment consumed 144,842 mt of cement in second quarter 2013, a 7.5% decrease from second quarter 2012. The Interlocking Pavers segment accounted for 0.7% of total cement consumption. During second quarter 2013, the Northeast region was the largest regional cement consumer in this category with 34,056 mt, followed by Great Lakes with 27,485 mt.

*NOTE: The Interlocking Pavers category was added in 2006. Consumption for this user segment was previously captured in the Brick & Block or All Other categories.*



## Interlocking Pavers: Analysis

The Interlocking Pavers segment (also called pavers, concrete pavers, paving stones, paving block, and brick pavers) reflects paver applications used for foot traffic, light vehicle traffic, or special units used for heavy traffic. Pavers are primarily used for patios, walkways, driveways, and housing development roads which infiltrates storm water, thereby reducing or eliminating retention pond requirements.

### Interlocking Pavers (000 mt)

Year							PCA Projection	
	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>173</b>	<b>144</b>	<b>113</b>	<b>84</b>	<b>87</b>	<b>82</b>		
% Change Y/Y	-36.2%	-16.6%	-21.5%	-26.1%	3.9%	-6.1%		
% Change YTD	-36.2%	-16.6%	-21.5%	-26.1%	3.9%	-6.1%		
<b>2nd Quarter</b>	<b>274</b>	<b>257</b>	<b>186</b>	<b>144</b>	<b>157</b>	<b>145</b>		
% Change Y/Y	-19.7%	-6.3%	-27.4%	-22.7%	8.6%	-7.5%		
% Change YTD	-27.0%	-10.3%	-25.3%	-24.0%	6.9%	-7.0%		
<b>3rd Quarter</b>	<b>277</b>	<b>214</b>	<b>161</b>	<b>142</b>	<b>147</b>			
% Change Y/Y	-7.1%	-22.8%	-24.8%	-12.2%	3.7%			
% Change YTD	-20.5%	-15.1%	-25.1%	-19.9%	5.7%			
<b>4th Quarter</b>	<b>190</b>	<b>154</b>	<b>125</b>	<b>123</b>	<b>113</b>			
% Change Y/Y	-29.0%	-19.1%	-19.2%	-1.5%	-8.0%			
% Change YTD	-22.4%	-15.9%	-23.9%	-16.0%	2.3%			
<b>Total</b>	<b>915</b>	<b>769</b>	<b>585</b>	<b>492</b>	<b>503</b>	<b>227</b>	<b>503</b>	<b>540</b>
% Change Y/Y	-22.4%	-15.9%	-23.9%	-16.0%	2.3%		0.0%	7.4%

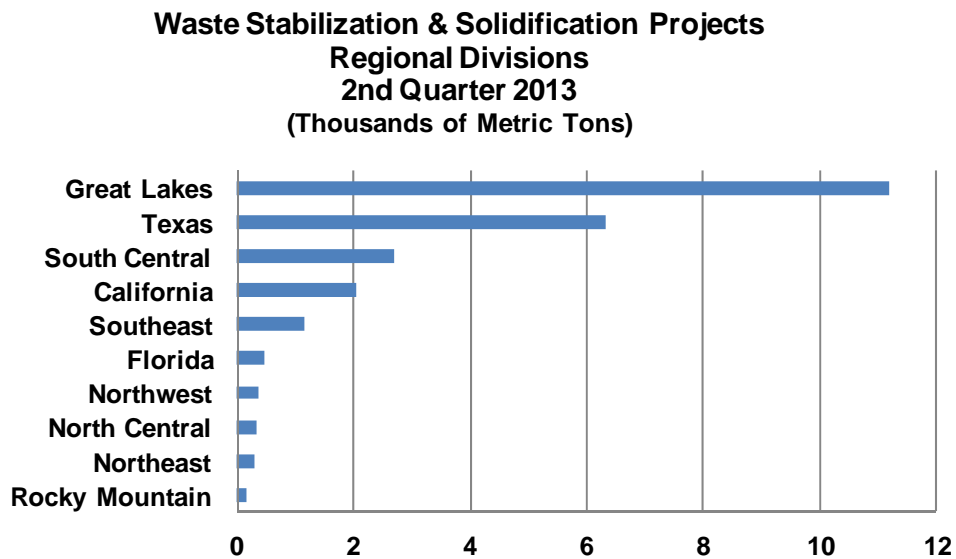
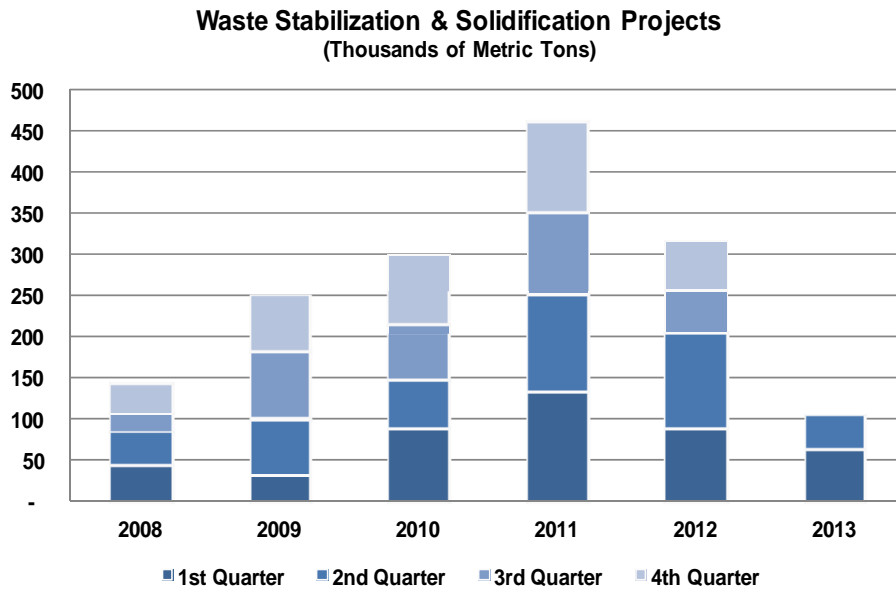
Since the Interlocking Pavers segment is primarily reliant on the performance of the housing market, it has recorded sharp declines for five consecutive years since the housing collapse. Volumes linger around half of peak 2006 levels. Due to the improvement in residential construction, 2012 witnessed modest growth. It is important to consider the timing of placement for various cement-based products in a construction cycle. While most cement is used at the beginning of construction projects and lessens as buildings head skyward, Interlocking Pavers may be one of the cement products that is laid later in a project. This implies that volumes for this user group may lag behind those normally associated with residential construction and boom longer after the release of pent-up demand in the residential sector.

While its current concentration in the nonresidential (13%) and public sectors (8%) does not provide significant support, an emerging focus on "green" building initiatives may facilitate positive momentum for the interlocking pavers industry. Growing efforts on the part of federal, state, and local governments to reduce environmental impacts of increased runoffs may be favorable for interlocking pavers. Utilizing permeable concrete interlocking pavers for patios, walkways, and driveways helps eliminate runoff and pollutants, recharges ground-water, and helps reduce downstream erosion and flooding.

PCA expects the Interlocking Pavers segment will be flat in 2013. Stronger growth is expected to materialize in 2014 and subsequent years as residential construction will be responsible for approximately two-thirds of all cement consumption growth.

## Waste Stabilization & Solidification (S/S): Data

Waste Stabilization & Solidification projects consumed approximately 41,312 mt of portland cement during the second quarter of 2013 (0.5% share of total cement consumption). This represented a decrease of 65.5% from second quarter 2012. During second quarter 2013, the Great Lakes region was the largest regional cement consumer in this segment with 11,184 mt, followed by Texas with 6,322 mt.



## Waste Stabilization & Solidification (S/S): Analysis

Waste stabilization/solidification(S/S) involves mixing cement into contaminated media or waste to immobilize contaminants within the treated material.

S/S Applications include:

- Brownfield clean-up and redevelopment of contaminated industrial and commercial sites.
- Superfund sites (Federal) to clean up hazardous waste sites.
- Management and disposal of radioactive waste.
- Federal facilities remediation projects conducted by Federal agencies other than EPA.

### Waste S/S (000 mt)

PCA Projection

Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>43</b>	<b>32</b>	<b>89</b>	<b>134</b>	<b>88</b>	<b>63</b>		
% Change Y/Y	-32.2%	-26.8%	180.3%	50.0%	-33.8%	-28.7%		
% Change YTD	-32.2%	-26.8%	180.3%	50.0%	-33.8%	-28.7%		
<b>2nd Quarter</b>	<b>40</b>	<b>69</b>	<b>57</b>	<b>120</b>	<b>116</b>	<b>41</b>		
% Change Y/Y	39.3%	70.2%	-17.8%	112.3%	-3.2%	-64.5%		
% Change YTD	-9.8%	20.0%	44.7%	74.3%	-19.3%	-49.1%		
<b>3rd Quarter</b>	<b>22</b>	<b>83</b>	<b>69</b>	<b>99</b>	<b>52</b>			
% Change Y/Y	-86.8%	273.9%	-16.4%	43.0%	-47.4%			
% Change YTD	-59.3%	73.1%	17.1%	64.2%	-27.2%			
<b>4th Quarter</b>	<b>37</b>	<b>64</b>	<b>84</b>	<b>108</b>	<b>58</b>			
% Change Y/Y	-34.3%	75.6%	30.5%	28.7%	-46.2%			
% Change YTD	-54.9%	73.7%	20.6%	54.2%	-31.6%			
<b>Total</b>	<b>143</b>	<b>248</b>	<b>299</b>	<b>461</b>	<b>315</b>	<b>104</b>	<b>287</b>	<b>315</b>
% Change Y/Y	-54.9%	73.7%	20.6%	54.2%	-31.6%		-8.9%	9.8%

The application of cement for waste stabilization is not so much tied to the economics or performance of one particular construction sector, but rather the application and enforcement of environmental regulations. In the private sector, the dominant use is for voluntary clean-up of Brownfield sites (property which may be compromised by the presence of a hazardous substance).

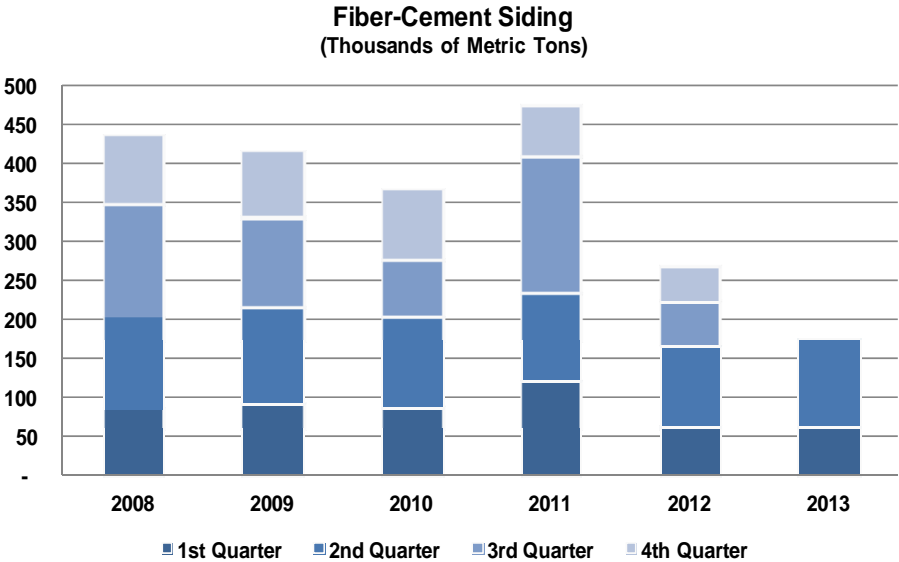
Through several EPA programs such as the Brownfields Program and Resource Conservation and Recovery Act, cement waste treatments are often applied to manufactured gas plants and mining sites. In addition to the EPA, the Department of Energy and Department of Defense are now significant participants in this application of cement. One drawback to growth in this cement application is that S/S is just one of many types of remediation methods.

This segment can be volatile as demand for waste stabilization cement is typically on a provisional basis. Volumes through the first half of the year are down to nearly half 2012 levels over the same period. PCA expects 2013 growth for this user-group to be negative, followed by a rebound in 2014 as public-led initiatives accelerate.



## Fiber-Cement Siding: Data

The Fiber-Cement Siding segment consumed 112,943 mt of portland cement during the second quarter of 2013. This accounted for 0.4% of total cement consumption. Consumption in the Fiber-Cement Siding segment increased 7.0% in the first quarter of 2013 compared to 2012.



*NOTE: Regional data withheld due to confidentiality restrictions*

## Fiber-Cement Siding: Analysis

Fiber-Cement Siding offers the appearance of traditional wood-based siding materials with much lower maintenance requirements, while maintaining its shape and color much better than vinyl siding.

### Fiber-Cement Siding (000 mt)

PCA Projection

Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>86</b>	<b>93</b>	<b>87</b>	<b>120</b>	<b>61</b>	<b>62</b>		
% Change Y/Y	-10.8%	8.5%	-6.3%	37.9%	-49.0%	1.3%		
% Change YTD	-10.8%	8.5%	-6.3%	37.9%	-49.0%	1.3%		
<b>2nd Quarter</b>	<b>118</b>	<b>123</b>	<b>113</b>	<b>114</b>	<b>106</b>	<b>113</b>		
% Change Y/Y	-23.0%	3.9%	-8.0%	0.7%	-7.3%	7.0%		
% Change YTD	-18.3%	5.8%	-7.3%	16.9%	-28.7%	4.9%		
<b>3rd Quarter</b>	<b>145</b>	<b>116</b>	<b>78</b>	<b>177</b>	<b>55</b>			
% Change Y/Y	3.1%	-19.9%	-33.2%	126.9%	-68.6%			
% Change YTD	-10.6%	-4.8%	-16.4%	47.7%	-45.9%			
<b>4th Quarter</b>	<b>88</b>	<b>83</b>	<b>89</b>	<b>65</b>	<b>47</b>			
% Change Y/Y	-42.1%	-5.2%	6.9%	-27.4%	-27.8%			
% Change YTD	-19.4%	-4.9%	-11.7%	29.4%	-43.4%			
<b>Total</b>	<b>437</b>	<b>416</b>	<b>367</b>	<b>475</b>	<b>269</b>	<b>175</b>	<b>291</b>	<b>319</b>
% Change Y/Y	-19.4%	-4.9%	-11.7%	29.4%	-43.4%		8.2%	9.6%

The fiber-cement siding industry is heavily concentrated (around 85%) in the residential sector, which was chiefly responsible for this segment's weak performance since the start of the housing recession. PCA has upwardly revised its housing starts projections for 2013. The impending turnaround in housing will support this segment's volumes going forward.

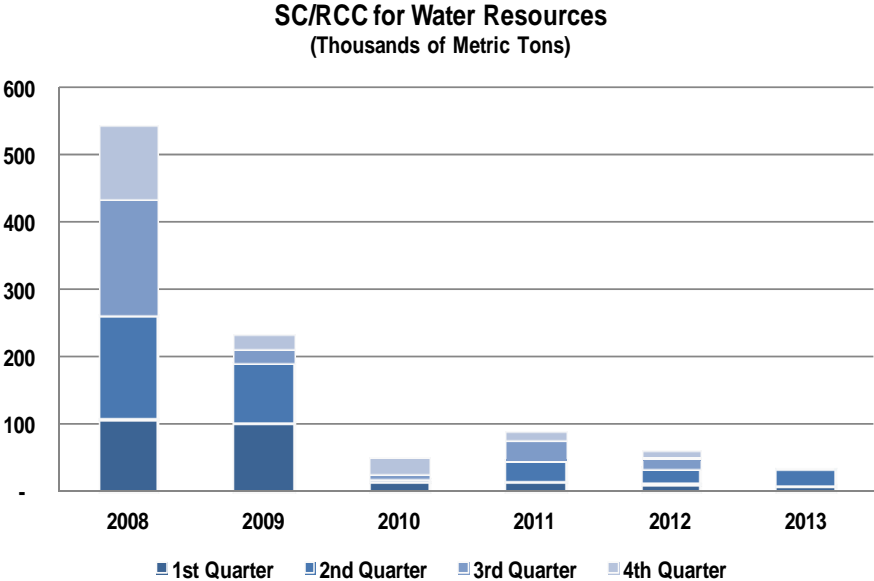
The industry has seen some innovations such as ease of installation and selection availability which improve market opportunity. Fiber-cement siding is more durable and versatile than its competitors, but it is also more expensive. Decisions on the part of builders in regard to material use is largely influenced by monetary concerns. Aesthetics and taste may influence certain projects on an ad hoc basis, which may be responsible for this segment's volatility.

PCA projects this segment will end the year with strong growth, followed by more robust expansion as the release of pent-up accelerates down the forecast horizon.

## Soil-Cement/Roller Compacted Concrete for Water Resources: Data

Approximately 24,143 mt of portland cement was consumed by the SC/RCC Water Resources segment during second quarter 2013, reflecting a 4.4% increase against volumes reported in second quarter 2012.

*NOTE: Cement consumption in this user segment is subject to extreme fluctuations due to the project orientation.*



*NOTE: Regional data withheld due to confidentiality restrictions*

## Soil-Cement/Roller Compacted Concrete for Water Resources: Analysis

This segment encompasses soil-cement used for embankment slope protection, stream bank protection, grade control structures, and reservoir and channel linings. Roller compacted concrete (RCC) is a proven and economical alternative for building new dams and for replacing or rehabilitating existing dams. RCC is also used as emergency spillway or overtopping protection for earth embankment dams and as a low permeable liner for water and wastewater ponds.

### SC/RCC Water Resources (000 mt)

Year							PCA Projection	
	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>105</b>	<b>101</b>	<b>11</b>	<b>12</b>	<b>10</b>	<b>6</b>		
% Change Y/Y	-4.3%	-3.8%	-89.0%	5.9%	-15.4%	-42.1%		
% Change YTD	-4.3%	-3.8%	-89.0%	5.9%	-15.4%	-42.1%		
<b>2nd Quarter</b>	<b>157</b>	<b>88</b>	<b>5</b>	<b>31</b>	<b>23</b>	<b>24</b>		
% Change Y/Y	-10.8%	-43.8%	-94.1%	496.9%	-25.8%	4.4%		
% Change YTD	-8.3%	-27.8%	-91.4%	162.7%	-23.0%	-9.6%		
<b>3rd Quarter</b>	<b>171</b>	<b>23</b>	<b>7</b>	<b>33</b>	<b>14</b>			
% Change Y/Y	18.8%	-86.5%	-67.9%	340.7%	-56.4%			
% Change YTD	0.7%	-50.9%	-88.8%	218.1%	-37.4%			
<b>4th Quarter</b>	<b>109</b>	<b>19</b>	<b>26</b>	<b>13</b>	<b>10</b>			
% Change Y/Y	-12.1%	-82.7%	35.2%	-47.9%	-21.7%			
% Change YTD	-2.2%	-57.3%	-78.7%	80.1%	-35.0%			
<b>Total</b>	<b>543</b>	<b>231</b>	<b>49</b>	<b>89</b>	<b>58</b>	<b>6</b>	<b>58</b>	<b>60</b>
% Change Y/Y	-2.2%	-57.3%	-78.7%	80.1%	-35.0%		-0.4%	5.1%

The need for flood control, dam rehabilitation and water storage are the major demand factors driving this market. Many current dams are more than 50 years old and have major deficiencies including inadequate spillways. The need for water storage will grow as a result of urbanization, economic growth, and increased irrigation needs. Funding for projects in this segment originates at both the federal and local levels. Federal funding originates from programs such as the National Resources Conservation Services which are responsible for dam rehabilitation and flood control. Municipal funding, often through the issuance of bonds, is the more dominant funding mechanism for water storage and treatment infrastructure improvement.

An overwhelming share of water resource projects are publically funded. This suggests that public sector budget constraints add downside pressure to this segment's outlook. Private sector investment in this segment, in a period of lengthened economic recovery and investment uncertainty has shown hesitation. However, PCA's latest forecast expects an easing of this uncertainty. While year-over-year gains may be witnessed, such as in the 80% increase recorded in 2011, it must be kept in mind that current volumes are less than 20% of what they were in 2006.

This segment can be highly cyclical and volatile as reflected in extreme fluctuations since 2006. 2012 ended with a 35% drop in tonnage, followed by double-digit declines in the first quarter 2013. PCA predicts the segment will remain flat this year, followed by more substantial gains down the forecast horizon as state fiscal conditions heal.

## All Other Manufacturers and Contractors: Data

The All Other segment (4.9% share of total cement consumption) consumed 1,272,397 mt of cement in the second quarter of 2013. This segment includes government municipalities, specialty chemical manufacturers, mines, and general miscellaneous contractors. In the second quarter of 2013, portland cement consumption by this segment increased 9.1% from second quarter 2012. In second quarter 2013, the Texas region was the largest regional cement consumer in this category with 341,199 mt, followed by the Northeast region with 208,135 mt.

All Other (000 mt)							PCA Projection	
Year	2008	2009	2010	2011	2012	2013	2013	2014
<b>1st Quarter</b>	<b>980</b>	<b>923</b>	<b>851</b>	<b>1,114</b>	<b>1,019</b>	<b>1,225</b>		
% Change Y/Y	8.0%	-5.9%	-7.8%	30.9%	-8.5%	20.1%		
% Change YTD	8.0%	-5.9%	-7.8%	30.9%	-8.5%	20.1%		
<b>2nd Quarter</b>	<b>1,089</b>	<b>1,020</b>	<b>1,248</b>	<b>1,132</b>	<b>1,167</b>	<b>1,272</b>		
% Change Y/Y	2.0%	-6.4%	22.4%	-9.3%	3.1%	9.1%		
% Change YTD	4.7%	-6.1%	8.1%	7.0%	-2.7%	14.2%		
<b>3rd Quarter</b>	<b>1,237</b>	<b>1,213</b>	<b>1,250</b>	<b>1,210</b>	<b>1,194</b>			
% Change Y/Y	6.4%	-1.9%	3.1%	-3.2%	-1.3%			
% Change YTD	5.4%	-4.6%	6.1%	3.2%	-2.2%			
<b>4th Quarter</b>	<b>848</b>	<b>933</b>	<b>1,110</b>	<b>994</b>	<b>1,063</b>			
% Change Y/Y	6.7%	10.0%	19.0%	-10.5%	7.0%			
% Change YTD	5.6%	-1.6%	9.1%	-0.2%	-0.1%			
<b>Total</b>	<b>4,155</b>	<b>4,089</b>	<b>4,460</b>	<b>4,450</b>	<b>4,443</b>	<b>2,497</b>	<b>4,820</b>	<b>5,497</b>
% Change Y/Y	5.6%	-1.6%	9.1%	-0.2%	-0.1%		8.5%	14.0%

**All Other Manufacturers and Contractors  
Regional Divisions  
2nd Quarter 2013  
(Thousands of Metric Tons)**

