

NCI BUILDING SYSTEMS INC
Form 424B1
January 13, 2014

**Filed Pursuant to Rule 424(b)(1)
Registration No. 333-186466**

PROSPECTUS SUPPLEMENT TO PROSPECTUS DATED MARCH 27, 2013

8,500,000 Shares

NCI Building Systems, Inc.

Common Stock

All of the shares of common stock of NCI Building Systems, Inc., which we refer to in this prospectus supplement as NCI or the Company, are being sold by the selling stockholders identified in this prospectus supplement. NCI will not receive any of the proceeds from the sale of the shares being sold by the selling stockholders. We have agreed to bear all the expenses in connection with the registration of these shares. The selling stockholders will pay any applicable underwriting fees, discounts or commission and certain transfer taxes.

The common stock of NCI is listed on the New York Stock Exchange (the NYSE) under the symbol NCS. The last reported sale price of the common stock on January 9, 2014 was \$18.67 per share.

Investing in our common stock involves risks. See Risk Factors on page S-12 of this prospectus supplement and page 2 of the accompanying prospectus to read about factors you should consider before buying shares of the common stock.

Neither the U.S. Securities and Exchange Commission (the SEC) nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement. Any representation to the contrary is a criminal offense.

	Per Share	Total
Price to public	\$ 18.00	\$ 153,000,000
Underwriting discount	\$ 0.855	\$ 7,267,500
Proceeds, before expenses, to the selling stockholders	\$ 17.145	\$ 145,732,500

We have entered into an agreement with the selling stockholders to repurchase 1,150,000 shares of our common stock from the selling stockholders in a private transaction at the price at which the shares of common stock are sold to the public in this offering, less the underwriting discount. The closing of the share repurchase will be contingent on the closing of this offering. The closing of this offering is not contingent on the closing of the share repurchase. See Concurrent Company Repurchase of Common Stock.

To the extent that the underwriters sell more than 8,500,000 shares of common stock, the underwriters have the option to purchase up to an additional 1,275,000 shares from the selling stockholders at the offering price less the underwriting discount. NCI will not receive any of the proceeds from the shares of common stock sold by the selling stockholders pursuant to any exercise of the underwriters' option to purchase additional shares.

The underwriters expect to deliver the shares against payment in New York, New York on January 15, 2014.

Credit Suisse

Citigroup

RBC Capital Markets

UBS Investment Bank

BB&T Capital Markets

Sidoti & Company, LLC

Stephens Inc.

Prospectus Supplement dated January 9, 2014

TABLE OF CONTENTS

TABLE OF CONTENTS
PROSPECTUS SUPPLEMENT

	Page
<u>About This Prospectus Supplement</u>	<u>S-ii</u>
<u>Prospectus Supplement Summary</u>	<u>S-1</u>
<u>Risk Factors</u>	<u>S-12</u>
<u>Forward-Looking Statements</u>	<u>S-23</u>
<u>Use of Proceeds</u>	<u>S-25</u>
<u>Concurrent Company Repurchase of Common Stock</u>	<u>S-25</u>
<u>Capitalization</u>	<u>S-26</u>
<u>Dividend Policy</u>	<u>S-27</u>
<u>Selected Historical Consolidated Financial Data</u>	<u>S-28</u>

	Page
<u>Price Range of Common Stock</u>	<u>S-30</u>
<u>Selling Stockholders</u>	<u>S-31</u>
<u>U.S. Federal Tax Considerations for Non-U.S. Holders</u>	<u>S-33</u>
<u>Underwriting</u>	<u>S-36</u>
<u>Where You Can Find More Information</u>	<u>S-42</u>
<u>Legal Matters</u>	<u>S-42</u>
<u>Experts</u>	<u>S-42</u>

PROSPECTUS

	Page
<u>About This Prospectus</u>	<u>1</u>
<u>Our Company</u>	<u>1</u>
<u>Risk Factors</u>	<u>2</u>
<u>Forward-Looking Statements</u>	<u>2</u>
<u>Use of Proceeds</u>	<u>3</u>
<u>General Description of the Common Stock that the Selling Stockholders May Sell</u>	<u>4</u>

	Page
<u>Selling Stockholders</u>	<u>8</u>
<u>Plan of Distribution</u>	<u>9</u>
<u>Where You Can Find More Information</u>	<u>12</u>
<u>Legal Matters</u>	<u>13</u>
<u>Experts</u>	<u>13</u>

S-i

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a registration statement on Form S-3 that we have filed with the SEC using a shelf registration process. Pursuant to the accompanying prospectus dated March 27, 2013, the selling stockholders may, from time to time, sell up to a total of 54,136,818 shares of common stock described in the accompanying prospectus in one or more offerings. This prospectus supplement may add to, update or change the information contained in the prospectus. If there is any inconsistency between the information in the prospectus and any prospectus supplement, you should rely on the information in the prospectus supplement. Please carefully read the prospectus, the prospectus supplement and any pricing supplement, in addition to the information contained in the documents we refer to under the heading **Where You Can Find More Information** on page S-42 of this prospectus supplement.

You should rely only on the information contained in or incorporated by reference into this prospectus supplement, the accompanying prospectus and any pricing supplement. We have not authorized anyone to provide you with different information. You should assume that the information appearing in this prospectus supplement and the accompanying prospectus is accurate only as of the dates on their respective cover pages and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since such dates.

S-ii

TABLE OF CONTENTS

PROSPECTUS SUPPLEMENT SUMMARY

The following summary does not contain all the information that may be important to purchasers of our common stock. You should carefully read the entire prospectus supplement, including the Risk Factors section, the accompanying prospectus and other information incorporated by reference in this prospectus supplement and the accompanying prospectus before making any investment decision. In this prospectus supplement, we refer to NCI, and its wholly owned and majority owned subsidiaries as we, us or our, unless we specifically state otherwise or the context indicates otherwise.

Our Company

NCI is one of North America's largest integrated manufacturers and marketers of metal products for the \$163 billion nonresidential construction industry. Our broad range of products are primarily used in new nonresidential construction. We design, engineer, manufacture and market what we believe is one of the most comprehensive lines of metal components and engineered building systems in the industry, and we maintain a reputation for high quality and superior engineering and design capabilities. We also provide metal coil coating services for construction and commercial applications, servicing both internal demand and external customers. We believe we have leading positions and well-recognized brands in each of our three business segments (metal coil coating, metal components and engineered building systems) with a high level of vertical integration, distinguishing us from many of our competitors.

We primarily serve the low-rise nonresidential construction market (buildings that are five stories or less) which, according to the McGraw-Hill Construction Information Group (McGraw-Hill), represented approximately 87% of total nonresidential construction activity (based on dollars of volume) during our fiscal year 2013. We go to market with a family of well-recognized brands, which allows us to compete effectively within a broad range of end-user markets including industrial, commercial, institutional and agricultural. Our customer base is similarly broad, including manufacturers and contractors, mining and energy companies, retailers, wholesalers, schools, governments and do-it-yourselfers. We operate 38 manufacturing facilities in the United States and Mexico, with additional sales and distribution offices throughout the United States and Canada. Our broad geographic footprint, in conjunction with our hub-and-spoke distribution system, allows us to quickly and efficiently supply a broad range of customers with high quality customer service and reliable deliveries.

Since 2008 we have undertaken significant operating and growth initiatives at all levels of our company, intended to position us for profitable growth. These initiatives have included actions focused on enhancing our cost position and operational efficiency, as well as on strengthening and expanding our opportunities to achieve above-market growth, such as:

reducing the size and cost of our manufacturing infrastructure while maintaining capacity through automation, retooling and the streamlining of key processes;
developing and implementing an enhanced turn-key estimating, design and detailing tool for product engineering enabling seamless transmission of designs directly from our customers to our shop floor manufacturing systems;

consolidating and upgrading our engineering and drafting organization and capabilities;
revamping our sales and marketing strategies to make them more responsive to our customers' needs and market opportunities;

developing new high-performance products and adding new services for our customers such as furnish-and-erect building and custom retrofit design; and further bolstering our position in the insulated metal panel market organically through the acquisition and growth of Metl-Span LLC (Metl-Span), which we acquired in June 2012 (the Acquisition).

S-1

TABLE OF CONTENTS

Our Segments

Our business is divided into three business segments, all closely integrated and well-positioned to capitalize on rising interest in steel products among builders: (i) metal coil coating, (ii) metal components and (iii) engineered building systems. We operate these business segments as a vertically integrated system, benefiting from common raw material usage, similar manufacturing processes and a complementary distribution network.

(1) Based on NCI management estimates.

Represents the portion of the market served by the Metal Building Manufacturers Association (the MBMA), of (2) which the Company is a member. MBMA members serve the majority of the Engineered Building Systems market.

(3) Based on fiscal 2013 revenue.

Adjusted EBITDA is a non-GAAP measure widely used by management and investors to provide comparability (4) of underlying operating results. For a reconciliation of Adjusted EBITDA to net income (loss) from operations, see Summary Historical Consolidated Financial Data Other Data.

S-2

TABLE OF CONTENTS

Steel is the primary raw material used by each of our business segments. The Metal Coil Coating segment provides substantially all of the metal coil coating requirements for our Metal Components and Engineered Building Systems business segments. Our Engineered Building Systems segment sources a large portion of its components requirements from our Metal Components segment. The manufacturing and distribution activities of the segments are effectively coupled through the use of our nationwide hub-and-spoke manufacturing and distribution system, which supports and enhances the vertical integration of our segments.

Our Industry

Demand for our products is driven primarily by new nonresidential construction activity. Construction activity in this market depends on a number of factors, including the overall economic outlook, general business cycle, interest rates, availability of credit and demographic trends that influence the location and magnitude of construction related to new business activities.

We believe that the new nonresidential construction market recovery is underway. According to McGraw-Hill, new nonresidential construction starts were 783 million square feet during our fiscal 2013, which is up approximately 15% from 680 million square feet from the most recent trough in 2010. However, starts are below historical levels. Fiscal 2013 starts would have needed to increase approximately 113% to achieve the most recent peak level in 2007, approximately 102% to achieve the average of the six previous cyclical peaks since 1967, approximately 42% to reach the average of the five cyclical troughs since 1967 prior to the current downturn and approximately 64% to achieve the market average since 1967. We believe this represents a significant opportunity for growth as activity improves.

New nonresidential construction starts	Units (mm. sq. ft.)	FY 2013	Percentage increase
Peak ⁽¹⁾	1,666	783	113 %
Average of Six Previous Cyclical Peaks ⁽²⁾	1,578	783	102 %
Average of Five Cyclical Troughs Prior to Recent Downturn ⁽³⁾	1,108	783	42 %
Long-Term Average ⁽⁴⁾	1,287	783	64 %

Source: McGraw-Hill Construction.

(1) Peak occurred in 2007.

(2) Prior peaks include 1969, 1973, 1979, 1985, 2000 and 2007.

(3) Prior downturn troughs include 1970, 1975, 1982, 1992 and 2003.

(4) Average nonresidential construction starts since 1967.

S-3

TABLE OF CONTENTS

The nonresidential market is comprised primarily of the commercial and industrial markets, as well as the institutional, agricultural, governmental and rural/community markets, as illustrated below.

The metal building industry has continued to gain share in the overall nonresidential construction market. The penetration of metal buildings in nonresidential construction increased from 2007 to 2012, as evidenced by a 26% increase in the ratio of MBMA tons shipped to every 1,000 square feet of lowrise nonresidential construction starts reported by McGraw-Hill, based on a three-year rolling average, as shown in the chart below. According to the MBMA, domestic and export tons of steel sold for engineered building systems by its members last peaked in 2007 at approximately 1.6 million tons and was approximately 1.0 million tons in 2012.

S-4

TABLE OF CONTENTS

Our Competitive Strengths

At NCI, we leverage our competitive strengths to effectively compete for business and offer our customers a value proposition predicated upon premium quality, service and fast delivery times at a fair price. We believe our key competitive strengths include:

Leading market positions and strong brands. We believe we maintain leading positions in each of our three operating segments as well as select sub-segments. These leadership positions include:

- #1 in engineered building systems;
- #1 in metal components;
- #1 in insulated metal panels;
- #1 in heavy gauge hot rolled steel coating; and
- #2 in light gauge coil coating.

Our high quality and well-respected stable of brands is marketed through a broad network of affiliated builders and distributors. We believe these brands, many of which have been in use for several decades, are well-recognized by our customers and industry associations.

Significant scale relative to our competitors. We believe the combination of our segment leadership positions and overall scale provides us with distinct advantages in terms of cost, efficiency, productivity, talent acquisition and retention, and breadth of market opportunity. All of our segments utilize relatively similar steel coil, enabling substantial manufacturing efficiencies and purchasing leverage and resulting in favorable steel costs compared to market indices and flexible purchasing terms without having to enter long-term contracts. Our size and accompanying resources have also allowed us to make investments in our IT systems that we believe many of our smaller competitors cannot afford. This includes a comprehensive array of web-based software solutions that lets customers design, order and pay online for products ranging from metal components to engineered building systems. Our scale also facilitates the attraction, retention and training of our employees, which we believe has helped us establish a deep culture of continuous improvement. Finally, our scale and national market presence have driven enhanced geographic diversity, while complementing our local markets insights and relationships.

Structural advantage through vertical integration. We are vertically integrated, which we believe distinguishes us from our primary competitors. This vertical integration provides us cost and scale advantages, as well as other efficiencies in quality and lead times. We have complete control over our entire manufacturing process, which provides our Metal Components and Engineered Building Systems segments enhanced quality control, and more efficient and consistent turnaround times from order to delivery than we believe our competitors are able to consistently achieve. Our Metal Coil Coating segment typically sells approximately half of its production internally to our Metal Components segment, which provides significant base loading and fixed cost absorption, helping to achieve levels of profitability that we believe exceed the industry average. Our vertical integration, when combined with other attributes of our individual segments, also provides us an inherent hedge to steel price volatility, helping drive more consistent gross profit margins for our overall business from period to period.

Efficient and flexible manufacturing and distribution model. We have a strategically developed hub-and-spoke manufacturing footprint and integrated business model that enables us to optimize the development, production and delivery of our metal building products to our customers. We believe we have an exceptional cost position and operate with high efficiency across all business lines, propelled by a deep and established culture of continuous improvement.

Our cost structure is highly variable in nature and we can adjust our manufacturing infrastructure and engineering, selling, general and administrative expense levels quickly in response to changes in volume, enhancing our ability to deliver profitable results. We have 38 manufacturing plants located throughout North America operated in an efficient

hub-and-spoke network that places our manufacturing and distribution operations close to our customers. Our business model and manufacturing footprint allow us to shift manufacturing as needed to better address regional demand and most efficiently utilize excess capacity. We utilize a network of over 3,300 authorized builders who market our products to end users and are hired by those end users to erect engineered building systems and provide contracting services on construction projects. We devote significant efforts to develop strong relationships with

S-5

TABLE OF CONTENTS

architects and project design teams to increase the rate at which our products are specified into architectural plans and used in final construction projects. We believe our affiliated builder network and specification efforts provide multiple market channels for our products.

Improved cost position and significantly enhanced operating leverage. In 2009 we began executing a significant restructuring that rationalized our manufacturing footprint, reduced total costs by approximately 42% and decreased our headcount by approximately one-third. The restructuring, combined with our lean efficiency efforts, has driven the elimination of approximately \$121 million of fixed and indirect costs. We strategically reconfigured our manufacturing footprint, consolidating from 42 to 31 facilities during fiscal 2009. These actions, coupled with an engineering initiative to increase the commonality of product specifications across our footprint, helped optimize our production and distribution model, and enabled us to more cost-effectively manufacture products across multiple facilities. Since 2008, we have made other substantial investments in technology and automation to further improve our production and logistical efficiency, enhancing our position as one of the lowest-cost producers. We believe these efforts have resulted in significantly greater operating leverage. As the nonresidential market recovers, we believe this operating leverage will allow us to drive higher profitability on comparable levels of industry activity. The benefits of our restructuring efforts and the operating leverage inherent in our ongoing business model have already begun to materialize in our increased profitability since 2010.

Motivated, experienced management team and dedicated workforce. The members of our management team have significant operating experience, with an average of 20 years of experience in the nonresidential construction industry.

The team has proven its ability to operate and grow the business and to execute cost reduction and efficiency improvement initiatives. Management has also proven its integration capabilities through a number of successful strategic acquisitions in its history. Our management team is supported by our committed workforce, which has many years of experience, long-standing personal relationships with customers and experience managing adverse market conditions. More than half of our managers and supervisors have been on the job 10 or more years and approximately 25% have been with us for more than 20 years.

Our Strategies

Capitalize fully on the nonresidential construction recovery. As a leading manufacturer of metal building products for the nonresidential construction industry, we intend to capitalize fully on the expected recovery in the new nonresidential construction market. According to McGraw-Hill, nonresidential construction starts were 783 million square feet in our fiscal 2013, which is up approximately 15% from 680 million square feet from the most recent trough in 2010. However, starts are below historical levels. Fiscal 2013 starts would have needed to increase approximately 113% to achieve the most recent peak in 2007, approximately 102% to achieve the average of the six cyclical peaks since 1967, approximately 42% to reach the average of the five cyclical troughs since 1967 prior to the current downturn and approximately 64% to achieve the market average since 1967. We believe this represents a significant opportunity for growth as activity improves.

Outpace growth in our core end market. Over recent years, we have successfully outpaced growth in our core nonresidential construction market and we strive to continue this trend. From 2007 to 2013, we have grown our total sales per thousand square feet of nonresidential construction by 73%, from \$965 in 2007 to \$1,671 in 2013. We strive to continue to outpace growth in our core market by achieving continued market share gains, as well as benefiting from the continued increased penetration of metal buildings and components.

Achieve continued share gains in existing categories and geographies. We aim to continue to capture a larger share of our existing categories and geographies by offering our customers an enhanced value proposition versus our

competitors. We believe an enhanced value proposition can include a lower overall cost, better product performance (including greater energy efficiency), more attractive design and aesthetic characteristics or industry-leading sales and customer service. We believe our degree of vertical integration, low-cost purchasing and manufacturing, efficient distribution footprint, strong brands, high product quality, and dedicated sales and service network allow us to offer an enhanced value proposition, which we believe will continue to drive market share gains.

S-6

TABLE OF CONTENTS

Increase penetration of metal buildings and components. Metal buildings and components have taken share from other building materials over recent years, as evidenced in part by the growth in the metal buildings industry. The reduced level of jobsite fabrication required by the builder or contractor enables metal buildings to be completed faster than traditional construction. In addition, technological advances in products, materials and engineering and design techniques have made metal building systems increasingly compatible with more traditional construction facades made of masonry, concrete, glass and wood, thereby increasing the attractiveness of metal buildings. Metal building products, including both engineered building systems and individual components such as roofs and wall systems, have also demonstrated greater energy efficiency than competing materials due to increased thermal and insulating attributes. This is particularly true with respect to insulated metal panels, for which we are the market leader in North America. We believe metal building products will continue to penetrate the nonresidential construction industry and we expect to drive that trend by continuing to invest in sales and marketing initiatives and innovative product development that enhances the attributes of our products and promotes the time, cost and energy savings that can benefit users of our products.

Organic growth through new markets, products and services. In each of our business segments, we are pursuing initiatives to expand our customer base by targeting new geographies and end markets and promoting new products and capabilities. In our Metal Coil Coating segment, we are diversifying our external customer base by marketing to original equipment manufacturers, who do not purchase directly from steel mills. We also opened a new metal coil coating plant in Middletown, Ohio in 2013 to more efficiently support the needs of our other segments as well as provide added geographic coverage for the Midwest and Northeast United States. In our Metal Components segment, we are driving sales in areas with opportunity for high growth, such as insulated panels and metal roofing. We are retooling an idled facility to produce a new architectural line of insulated metal panels that we believe will strengthen our product portfolio and increase our addressable market. At the same time, we are exploring opportunities to increase our retail footprint to provide greater access to a larger consumer-oriented customer base. In our Engineered Building Systems segment, we are looking to enhance our leadership position and expand the customer base by offering furnish and erection services and supplying higher complexity structures for the industrial market.

Continued investments in high growth, market expanding initiatives. Our goal is to be the undisputed leader in the industry by consistently delivering orders that are both complete and on-time. In order to realize this goal, we have made substantial investments in quality, efficiency and speed that we believe differentiate us from our peers and provide significant added value to our customers. We continually seek to improve the quality of our production and delivery system, invest in training and developing skilled workers, standardize best practices for customer service and improve marketing to ensure we are the supplier of choice for our customers. We have eliminated the majority of manual drafting activities and automated the integration of our drafting system to the shop floor, thereby streamlining the design process and the communication between our engineering and manufacturing functions. We have also developed new technologies and processes to reduce turnaround times, including the introduction of our Express Buildings system that guarantees a three-week window for design, order and delivery of certain low-complexity products. We have several other initiatives in various stages of implementation that we believe will continue to enhance our quality, efficiency and speed, providing tangible value to our customers and improving our operating capabilities and profitability.

Supplement organic growth with selective acquisitions. We intend to continue to supplement our strong organic growth opportunities with selective acquisitions that provide specific product, market or process capabilities and enhance our prospects for future growth and profitability. We have a proven ability to identify, acquire and integrate attractive external growth opportunities. Our most recent example of this is our 2012 acquisition of Metl-Span, which provided us a #1 North American market position in the fast-growing insulated panels market. We intend to continue to take a disciplined approach to acquisitions, both in the quality and strategic fit of potential targets, as well as in our expected returns and financing strategies.

TABLE OF CONTENTS

Share Repurchase

We have entered into an agreement with the selling stockholders to repurchase 1,150,000 shares of our common stock, concurrently with the closing of this offering, directly from the selling stockholder in a private transaction at the price at which the shares of common stock are sold to the public in this offering, less the underwriting discount. Following the closing of the share repurchase, the Company intends to cancel the shares it repurchases from the selling stockholders.

The agreement between the selling stockholders and us for the share repurchase represents a private, non-underwritten transaction that was approved and recommended by the Affiliate Transactions Committee of our board of directors.

We intend to fund the share repurchase with available liquidity, including liquidity available under our asset-based lending facility entered into on October 20, 2009 among Wells Fargo Capital Finance, LLC, as administrative agent and co-collateral agent, the lenders party thereto, Bank of America, N.A., as co-collateral agent and syndication agent, NCI, as a guarantor, and certain subsidiaries of NCI party thereto as borrowers and guarantors, as amended (the ABL Facility).

The closing of the share repurchase will be contingent on the closing of this offering and the satisfaction of certain other customary conditions. The closing of this offering is not conditioned on the closing of the share repurchase, and there can be no assurance that the share repurchase will be completed.

This description and the other information in this prospectus supplement regarding the share repurchase are included in this prospectus supplement solely for informational purposes. Nothing in this prospectus supplement should be construed as an offer to sell, or the solicitation of an offer to buy, any of our common stock subject to the share repurchase. See Concurrent Company Repurchase of Common Stock.

Ownership and Corporate Information

Our principal executive offices are located at 10943 North Sam Houston Parkway West, Houston, Texas 77064, and our telephone number at that location is (281) 897-7788.

TABLE OF CONTENTS

THE OFFERING

Issuer

NCI Building Systems, Inc.

Selling stockholders

Clayton, Dubilier & Rice Fund VIII, L.P. and CD&R Friends & Family Fund VIII, L.P. (together, the CD&R Funds).

Common stock offered by the selling stockholders

8,500,000 shares⁽¹⁾

Common stock outstanding after this offering and the concurrent share repurchase

73,635,726 shares⁽²⁾

Option to purchase additional shares of common stock

The underwriters have a 30-day option to purchase an additional 1,275,000 shares of common stock from the CD&R Funds at the initial offering price less underwriters' discounts and commissions.

Use of proceeds

The selling stockholders will receive all of the net proceeds from the sale of our common stock in this offering. We will not receive any of the proceeds from the sale of the shares of our common stock by the selling shareholders See Use of Proceeds.

Concurrent share repurchase

We have entered into an agreement with the selling stockholders to repurchase 1,150,000 shares of our common stock directly from the selling stockholders, concurrently with the closing of this offering, in a private transaction at the price at which the shares of common stock are sold to the public in this offering, less the underwriting discount, contingent on the consummation of this offering. See Concurrent Company Repurchase of Common Stock.

Dividend policy

We do not expect to pay dividends on our common stock for the foreseeable future. See Dividend Policy.

New York Stock Exchange symbol

NCS

Risk factors

Investing in our common stock involves risks. See the section titled Risk Factors in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein or therein, for a discussion of certain risks you should consider before investing in our common stock.

Except as otherwise indicated, the information in this prospectus supplement assumes no exercise of the underwriters' option to purchase additional shares.

(1) Represents 15.7% of the shares currently held by the selling stockholders.

Based on a total of 74,785,726 shares of common stock outstanding as of November 3, 2013, minus a total of (2) 1,150,000 shares that we intend to repurchase in the share repurchase and that will no longer be outstanding following the consummation of this offering.

S-9

TABLE OF CONTENTS**SUMMARY HISTORICAL CONSOLIDATED FINANCIAL DATA**

The following table presents our summary consolidated financial data, as of and for the periods indicated. The summary consolidated financial data for the fiscal years ended November 3, 2013, October 28, 2012 and October 30, 2011 have been derived from our audited consolidated financial statements included in our Annual Reports on Form 10-K for the years ended November 3, 2013, October 28, 2012 and October 30, 2011 and incorporated by reference in this prospectus supplement.

This Summary Historical Consolidated Financial Data should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and our consolidated financial statements and related notes included in applicable reports pursuant to the Securities Exchange Act of 1934, as amended (the Exchange Act) and incorporated by reference in this prospectus supplement. Our historical consolidated financial data may not be indicative of our future performance.

	Fiscal Year Ended		
	November 3, 2013 ⁽¹⁾	October 28, 2012	October 30, 2011
	(In thousands)		
Sales	\$1,308,395	\$1,154,010	\$959,577
Cost of sales, excluding gain on insurance recovery and asset impairments (recoveries), net	1,033,374	898,001	758,023
Gain on insurance recovery	(1,023)		
Asset impairments (recoveries), net		(9)	1,121
Gross profit	276,044	256,018	200,433
Engineering, selling, general and administrative expenses	256,856	219,340	202,352
Acquisition-related costs		4,989	
Restructuring charges (recovery)			(292)
Income (loss) from operations	19,188	31,689	(1,627)
Interest income	131	112	127
Interest expense	(20,988)	(16,827)	(15,723)
Debt extinguishment costs, net	(21,491)	(6,437)	
Other income, net	1,421	460	876
Income (loss) before income taxes	(21,739)	8,997	(16,347)
Provision (benefit) from income taxes	(8,854)	4,084	(6,397)
Net income (loss)	\$(12,885) ⁽²⁾	\$4,913 ⁽³⁾	\$(9,950) ⁽⁴⁾
Net income (loss) attributable to common shares	(12,885) ⁽²⁾	(72,120) ⁽³⁾	(47,466) ⁽⁴⁾

	Fiscal Year Ended		
	November 3, 2013	October 28, 2012	October 30, 2011
	(In thousands)		
Balance sheet data (end of period):			
Cash and cash equivalents	\$ 77,436	\$ 55,158	\$ 78,982
Total assets	780,263	751,484	561,154

Long-term debt, net	235,391	234,444	130,699
---------------------	---------	---------	---------

(1) Fiscal 2013 includes 53 weeks of operating activity.

(2) Includes debt extinguishment costs of \$21.5 million (\$13.2 million after tax) and proceeds from insurance recovery of 1.0 million (\$0.6 million after tax) and unreimbursed business interruption costs of \$0.5 million (\$0.3 million after tax) in fiscal 2013.

(3) Includes acquisition-related costs of \$5.0 million (\$3.7 million after tax), debt extinguishment costs of \$6.4 million (\$4.0 million after tax), actuarial determined general liability self-insurance of \$1.9 million (\$1.2 million after tax) and executive retirement costs of \$0.5 million (\$0.3 million after tax) in fiscal 2012.

(4) Includes restructuring charges of \$0.3 million (\$0.2 million after tax) and asset impairments of \$1.1 million (\$0.7 million after tax) in fiscal 2011.

S-10

TABLE OF CONTENTS**Other Data:**

The following table present a reconciliation of Adjusted EBITDA to income (loss) from operations for the periods presented:

	Fiscal Year ended November 3, 2013				
	Metal Coil Coating	Metal Components	Engineered Building Systems	Corporate	Consolidated
	(In thousands)				
Income (loss) from operations	\$24,027	\$ 36,167	\$ 23,405	\$(64,411)	\$ 19,188
Depreciation and amortization	3,285	19,093	11,937	1,694	36,009
Gain on insurance recovery	(1,023)				(1,023)
Unreimbursed business interruption costs	500				500
Share based compensation				14,900	14,900
Other income, net		(60)	531	891	1,362
Adjusted EBITDA ⁽¹⁾	\$26,789	\$ 55,200	\$ 35,873	\$(46,926)	\$ 70,936

The Company's credit agreement defines Adjusted EBITDA. Adjusted EBITDA excludes certain non-cash and other unusual items. The Company is disclosing Adjusted EBITDA, a non-GAAP measure, because it is widely used by management and investors to provide comparability of underlying operating results. However, Adjusted EBITDA may not be comparable to similarly titled measures of other companies, and should not be considered as a substitute for the information contained in the Company's historical financial statements prepared in accordance with GAAP, which are incorporated by reference into this prospectus supplement.

S-11

TABLE OF CONTENTS

RISK FACTORS

An investment in our common stock involves risks, some of which are described below. You should carefully consider all of the information contained in or incorporated by reference in this prospectus supplement and other information which may be incorporated by reference in this prospectus supplement or the accompanying prospectus as provided under Where You Can Find More Information, including the risks described in our Annual Report on Form 10-K for the fiscal year ended November 3, 2013 (our 2013 10-K). This prospectus supplement also contains forward-looking statements that involve risks and uncertainties. Please read Forward-Looking Statements. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of certain factors, including the risks described elsewhere in this prospectus supplement or the accompanying prospectus and in the documents incorporated by reference into this prospectus supplement or the accompanying prospectus. If any of these risks occur, our business, financial condition or results of operations could be adversely affected. Additional risks not currently known to us or that we currently deem immaterial may also have a material adverse effect on us.

Risks Related to Our Business

Our industry is cyclical and highly sensitive to macroeconomic conditions; as a result, our industry is currently experiencing a downturn which, if sustained, will materially and adversely affect our business, liquidity and results of operations.

The nonresidential construction industry is highly sensitive to national and regional macroeconomic conditions. The United States and global economies are currently undergoing a period of slowdown and unprecedented volatility, which is having an adverse effect on our business.

When assessing the state of the metal construction market, we review information from various industry associations, third-party research, and various government reports such as industrial production and capacity utilization. One such industry association is the MBMA, which provides summary member sales information and promotes the design and construction of metal buildings and metal roofing systems. Another is McGraw-Hill, which we review for information regarding actual and forecasted growth in various construction related industries, including the overall nonresidential construction market. McGraw-Hill's nonresidential construction forecast for calendar 2013, published in October 2013, indicates an expected increase of 5% in square footage and an increase of 4% in dollar value as compared to the prior calendar year. In calendar 2014, activity is expected to increase compared to calendar 2013, with an expected increase of 11% in square footage and an increase of 8% in dollar value. Additionally, we review the American Institute of Architects (the AIA) survey for inquiry and billing activity for the industrial, commercial and institutional sectors. The AIA's Architectural Billing Index (ABI) is a closely watched metric, as billings growth for architectural services generally leads to construction spending growth for the following 9 to 12 months. We have historically experienced a shorter lag period of 6 to 9 months when comparing the commercial and industrial ABI trends to our volume trends. An ABI reading above 50 indicates an increase in month-to-month seasonally adjusted billings, and a reading below 50 indicates a decrease in month-to-month seasonally adjusted billings. AIA's ABI published for October 2013 was above 50 at 51.6 and the commercial and industrial component of the index was at 53.7 for October 2013. The commercial and industrial component of the index represents an improvement over October 2012, when the index was 50.1.

Continued uncertainty about current economic conditions has had a negative effect on our business, and will continue to pose a risk to our business as our customers may postpone spending in response to tighter credit, negative financial news and/or declines in income or asset values, which could have a material negative effect on the demand for our products. Other factors that could influence demand include fuel and other energy costs, conditions in the nonresidential real estate markets, labor and healthcare costs, access to credit and other macroeconomic factors. From time to time, our industry has also been adversely affected in various parts of the country by declines in nonresidential construction starts, including but not limited to, high vacancy rates, changes in tax laws affecting the real estate industry, high interest rates and the unavailability of financing. Sales of our products may be adversely affected by continued weakness in demand for our products within particular customer groups, or a continued decline in the general construction industry or particular geographic regions. These and other economic factors could have a material adverse effect on demand for our products and on our financial condition and operating results.

S-12

TABLE OF CONTENTS

We cannot predict the ultimate severity or length of the current economic downturn or the timing or severity of future economic or industry downturns. A prolonged economic downturn, particularly in states where many of our sales are made, would have a material adverse effect on our results of operations and financial condition, including potential asset impairments.

The ongoing uncertainty and volatility in the financial markets related to the U.S. budget deficit, the European sovereign debt crisis and the state of the worldwide economic recovery may adversely affect our operating results.

Global financial markets continue to experience disruptions, including increased volatility, and diminished liquidity and credit availability. In particular, developments in Europe have created uncertainty with respect to the ability of certain European countries to continue to service their sovereign debt obligations. This debt crisis and related European financial restructuring efforts may cause the value of the Euro to deteriorate and contribute to instability in global credit markets. If global economic and market conditions, or economic conditions in Europe, the United States or other key markets, remain uncertain, persist or deteriorate further, our customers may respond by suspending, delaying or reducing their purchases of our metal products, which may adversely affect our cash flows and results of operations.

Discord, conflict and lack of compromise within and between the executive and legislative branches of the U.S. government relative to federal government budgeting, taxation policies, government expenditures, and U.S. borrowing/debt ceiling limits could adversely affect our business and operating results.

The inability of the legislative and executive branches of the U.S. government to pass in a timely manner a federal government budget, control deficit spending, address tax revenue requirements and effectively manage short and long term U.S. government borrowing, debt ratings and debt ceiling adjustments could negatively impact U.S. domestic and global financial markets, thereby reducing demand by our customers for our products and services thereby reducing our revenues. Similarly, if our suppliers face challenges in obtaining credit, in selling their products or otherwise in operating their businesses, they may become unable to continue to offer the materials we purchase from them to manufacture our products. These actions could result in reductions in our revenues, increased price competition or increased operating costs, which could adversely affect our results of operations and financial condition.

Regulation from the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act) could adversely affect our business or financial results.

Changes in regulatory requirements, such as the reporting requirements relating to conflict minerals originating in the Democratic Republic of Congo or adjoining countries included in the Dodd-Frank Act, or evolving interpretations of existing regulatory requirements, may result in increased compliance cost, capital expenditures and other financial obligations that could adversely affect our business or financial results.

Our business may be impacted by external factors that we may not be able to control.

War, civil conflict, terrorism, natural disasters and public health issues including domestic or international pandemic have caused and could cause damage or disruption to domestic or international commerce by creating economic or political uncertainties. Additionally, the volatility in the financial markets, as we have experienced recently following the concerns about the Standard & Poor's downgrade of the United States' credit rating, the European debt crisis and fears of a new U.S. recession, could negatively impact our business. These events could result in a decrease in demand for our products, make it difficult or impossible to deliver orders to customers or receive materials from suppliers, affect the availability or pricing of energy sources or result in other severe consequences that may or may not be predictable. As a result, our business, financial condition and results of operations could be materially adversely affected.

S-13

TABLE OF CONTENTS

We may not be able to service our debt, obtain future financing or may be limited operationally.

We have substantial debt service obligations. As of November 3, 2013, we had aggregate indebtedness of approximately \$238.0 million. The debt that we carry may have important consequences to us, including the following:

Our ability to obtain additional financing, if necessary, for working capital, capital expenditures, acquisitions or other purposes may be impaired or additional financing may not be available on favorable terms; We must use a portion of our cash flows to pay the principal and interest on our debt. These payments reduce the funds that would otherwise be available for our operations and future business opportunities; Because we may be more leveraged than some of our competitors, our debt may place us at a competitive disadvantage; A substantial decrease in our net operating cash flows could make it difficult for us to meet our debt service requirements and force us to modify our operations; and

We may be more vulnerable to a downturn in our business or the economy generally.

If we cannot service our debt, we will be forced to take actions such as reducing or delaying acquisitions and/or capital expenditures, selling assets, restructuring or refinancing our debt or seeking additional equity capital. We can give you no assurance that we can do any of these things on satisfactory terms or at all.

Subject to restrictions in our credit agreement entered into on June 22, 2012 among NCI, as borrower, Credit Suisse AG, Cayman Islands Branch, as administrative agent and collateral agent and the other financial institutions party thereto from time to time, as amended (the Credit Agreement), in connection with the Acquisition and our ABL Facility, we may incur substantial additional debt from time to time to finance acquisitions, capital expenditures or for other purposes.

Restrictive covenants in the Credit Agreement and the ABL Facility may adversely affect us.

We must comply with operating and financing restrictions in the Credit Agreement and the ABL Facility. We may also have similar restrictions with any future debt. These restrictions affect, and in many respects limit or prevent us from:

incurring additional indebtedness;
making restricted payments, including dividends or other distributions;
incurring liens;
making investments, including joint venture investments;
selling assets;
repurchasing our debt and our capital stock; and
merging or consolidating with or into other companies or selling substantially all our assets.

We are required to make mandatory payments under the Credit Agreement upon the occurrence of certain events, including the sale of assets and the issuance of debt, in each case subject to certain limitations and conditions set forth in our Credit Agreement.

Under the ABL Facility, a Dominion Event occurs if either an event of default is continuing or excess availability falls below certain levels, during which period, and for certain periods thereafter, the administrative agent may apply all amounts in the Company's concentration account to the repayment of the loans outstanding under the ABL Facility,

subject to an intercreditor agreement between the lenders under the Credit Agreement and the ABL Facility. In addition, during a Dominion Event, we are required to make mandatory payments on the ABL Facility upon the occurrence of certain events, including the sale of assets and the issuance of debt, in each case subject to certain limitations and conditions set forth in the ABL

S-14

TABLE OF CONTENTS

Facility. If excess availability under the ABL Facility falls below certain levels, our asset-based loan facility also requires us to satisfy set financial tests relating to our fixed charge coverage ratio.

These restrictions could limit our ability to plan for or react to market conditions or meet extraordinary capital needs or otherwise could restrict our activities. In addition, under certain circumstances and subject to the limitations set forth in the Credit Agreement, the Credit Agreement requires us to pay down our term loan to the extent we generate excess positive cash flow each fiscal year. These restrictions could also adversely affect our ability to finance our future operations or capital needs or to engage in other business activities that would be in our interest.

We may recognize goodwill or other intangible asset impairment charges.

Future triggering events, such as declines in our cash flow projections, may cause impairments of our goodwill or intangible assets based on factors such as our stock price, projected cash flows, assumptions used, control premiums or other variables.

We completed our annual assessment of the recoverability of goodwill and indefinite lived intangibles in the fourth quarter of fiscal 2013 and determined that no impairments of our goodwill or long-lived intangibles were required.

Our businesses are seasonal, and our results of operations during our first two fiscal quarters may be adversely affected by seasonality.

The metal coil coating, metal components and engineered building systems businesses, and the construction industry in general, are seasonal in nature. Sales normally are lower in the first half of each fiscal year compared to the second half of the fiscal year because of unfavorable weather conditions for construction and typical business planning cycles affecting construction. This seasonality adversely affects our results of operations for the first two fiscal quarters. Prolonged severe weather conditions can delay construction projects and otherwise adversely affect our business.

Price volatility and supply constraints in the steel market could prevent us from meeting delivery schedules to our customers or reduce our profit margins.

Our business is heavily dependent on the price and supply of steel. The steel industry is highly cyclical in nature, and steel prices have been volatile in recent years and may remain volatile in the future. Steel prices are influenced by numerous factors beyond our control, including general economic conditions domestically and internationally, the availability of raw materials, competition, labor costs, freight and transportation costs, production costs, import duties and other trade restrictions. Given the level of steel industry consolidation, the anticipated additional domestic market capacity, generally low inventories in the industry and slow economic recovery, a sudden increase in demand could affect our ability to purchase steel and result in rapidly increasing steel prices.

We normally do not maintain an inventory of steel in excess of our current production requirements. However, from time to time, we may purchase steel in advance of announced steel price increases. If demand for our products declines, our inventory may increase. We can give you no assurance that steel will remain available or that prices will not continue to be volatile. While most of our sales contracts have escalation clauses that allow us, under certain circumstances, to pass along all or a portion of increases in the price of steel after the date of the contract but prior to delivery, we may, for competitive or other reasons, not be able to pass such price increases along. If the available supply of steel declines, we could experience price increases that we are not able to pass on to our customers, a

deterioration of service from our suppliers or interruptions or delays that may cause us not to meet delivery schedules to our customers. Any of these problems could adversely affect our results of operations and financial condition. For more information about steel pricing trends in recent years, see Item 1. Business Raw Materials and Item 7A. Quantitative and Qualitative Disclosures about Market Risk Steel Prices in our 2013 10-K.

We rely on a few major suppliers for our supply of steel, which makes us more vulnerable to supply constraints and pricing pressure, as well as the financial condition of those suppliers.

We rely on a few major suppliers for our supply of steel and may be adversely affected by the bankruptcy, financial condition or other factors affecting those suppliers. During fiscal 2013, we purchased

S-15

TABLE OF CONTENTS

approximately 11% of our product material costs from one vendor in the United States. No other vendor accounted for over 10% of our product material costs during fiscal 2013. Due to unfavorable market conditions and our inventory supply requirements during fiscal 2013, we purchased less than 10% of our steel from foreign suppliers. Pricing and lead time limit our use of foreign suppliers. Therefore, production cutbacks or a prolonged labor strike against one or more of our principal domestic suppliers could have a material adverse effect on our operations. Furthermore, if one or more of our current suppliers is unable for financial or any other reason to continue in business or to produce steel sufficient to meet our requirements, essential supply of our primary raw materials could be temporarily interrupted, and our business could be adversely affected.

Failure to retain or replace key personnel could hurt our operations.

Our success depends to a significant degree upon the efforts, contributions and abilities of our senior management, plant managers and other highly skilled personnel, including our sales executives. These executives and managers have many accumulated years of experience in our industry and have developed personal relationships with our customers that are important to our business. If we do not retain the services of our key personnel or if we fail to adequately plan for the succession of such individuals, our customer relationships, results of operations and financial condition may be adversely affected.

If we are unable to enforce our intellectual property rights or if our intellectual property rights become obsolete, our competitive position could be adversely affected.

We utilize a variety of intellectual property rights in our services. We have a number of United States patents, foreign patents, pending patent applications and other proprietary rights, including those relating to metal roofing systems, metal overhead doors, our pier and header system, our Long Bay® System and our building estimating and design system. We also have several registered trademarks and pending registrations in the United States. We view our portfolio of process and design technologies as one of our competitive strengths. We may not be able to successfully preserve these intellectual property rights in the future and these rights could be invalidated, circumvented, or challenged. If we are unable to protect and maintain our intellectual property rights, or if there are any successful intellectual property challenges or infringement proceedings against us, our business and revenue could be materially and adversely affected.

We incur costs to comply with environmental laws and have liabilities for environmental investigations, cleanups and claims.

Because we emit and discharge pollutants into the environment, own and operate real property that has historically been used for industrial purposes, and generate and handle hazardous substances and industrial wastes, we incur costs and liabilities to comply with environmental laws and regulations. We may incur significant additional costs as those laws and regulations or their enforcement change in the future if there is a release of hazardous substances into the environment, or if a historical release of hazardous substances, industrial wastes or other contamination is identified.

The operations of our manufacturing facilities are subject to stringent and complex federal, state and local environmental laws and regulations. These include, for example, (i) the federal Clean Air Act and comparable state laws and regulations that impose obligations related to air emissions; (ii) the federal Clean Water Act and comparable state laws and regulations that impose obligations related to wastewater and storm water discharges; (iii) the federal Resource Conservation and Recovery Act and comparable state laws that impose requirements for the storage,

We rely on a few major suppliers for our supply of steel, which makes us more vulnerable to supply constraints and

treatment, handling and disposal of waste from our facilities; and (iv) Comprehensive Environmental Response, Compensation and Liability Act of 1980 and comparable state laws that impose liability for the investigation and cleanup of hazardous substances or industrial wastes that may have been released at properties currently or previously owned or operated by us, or at locations to which we have sent industrial waste for disposal.

Failure to comply with these laws and regulations may trigger a variety of administrative, civil and criminal enforcement measures, including the assessment of monetary penalties; the imposition of investigative or remedial requirements; personal injury, property or natural resource damages claims; and the issuance of orders enjoining current or future operations, or the denial or revocation of permits or other legal

S-16

TABLE OF CONTENTS

authorizations. For more information about the effect of environmental laws and regulations on our business, see Item 1. Business Environmental Matters in our 2013 10-K.

The industries in which we operate are highly competitive.

We compete with all other alternative methods of building construction, which may be viewed as more traditional, more aesthetically pleasing or having other advantages over our products. In addition, competition in the metal components and metal buildings markets of the building industry and in the metal coil coating segment is intense. It is based primarily on:

quality;
service;
on-time delivery;
ability to provide added value in the design and engineering of buildings;
price;
speed of construction in buildings and components; and
personal relationships with customers.

We compete with a number of other manufacturers of metal components and engineered building systems and providers of coil coating services ranging from small local firms to large national firms. In addition, we and other manufacturers of metal components and engineered building systems compete with alternative methods of building construction. If these alternative building methods compete successfully against us, such competition could adversely affect us.

In addition, several of our competitors have been acquired by steel producers. Competitors owned by steel producers may have a competitive advantage on raw materials that we do not enjoy. Steel producers may prioritize deliveries of raw materials to such competitors or provide them with more favorable pricing, both of which could enable them to offer products to customers at lower prices or accelerated delivery schedules.

Acquisitions may be unsuccessful if we incorrectly predict operating results or are unable to identify and complete future acquisitions and integrate acquired assets or businesses.

We have a history of expansion through acquisitions, and we believe that if our industry continues to consolidate, our future success may depend, in part, on our ability to successfully complete acquisitions. Growing through acquisitions and managing that growth will require us to continue to invest in operational, financial and management information systems and to attract, retain, motivate and effectively manage our employees. Pursuing and integrating acquisitions involves a number of risks, including:

the risk of incorrect assumptions or estimates regarding the future results of the acquired business or expected cost reductions or other synergies expected to be realized as a result of acquiring the business;
diversion of management's attention from existing operations;
unexpected losses of key employees, customers and suppliers of the acquired business;
integrating the financial, technological and management standards, processes, procedures and controls of the acquired business with those of our existing operations; and
increasing the scope, geographic diversity and complexity of our operations.

Although the majority of our growth strategy is organic in nature, if we do pursue opportunistic acquisitions, we can provide no assurance that we will be successful in identifying or completing any acquisitions or that any businesses or

assets that we are able to acquire will be successfully integrated into our existing business. We cannot predict the effect, if any, that any announcement or consummation of an acquisition would have on the trading prices of our securities.

S-17

TABLE OF CONTENTS

Acquisitions subject us to numerous risks that could adversely affect our results of operations.

If we pursue further acquisitions, depending on conditions in the acquisition market, it may be difficult or impossible for us to identify businesses or operations for acquisition, or we may not be able to make acquisitions on terms that we consider economically acceptable. Even if we are able to identify suitable acquisition opportunities, our acquisition strategy depends upon, among other things, our ability to obtain financing and, in some cases, regulatory approvals, including under the Hart-Scott-Rodino Act.

Our incurrence of additional debt, contingent liabilities and expenses in connection with any future acquisitions could have a material adverse effect on our financial condition and results of operations. Furthermore, our financial position and results of operations may fluctuate significantly from period to period based on whether significant acquisitions are completed in particular periods. Competition for acquisitions is intense and may increase the cost of, or cause us to refrain from, completing acquisitions.

Although we expect that the Acquisition of Metl-Span will result in benefits to us, we may not realize those benefits because of integration difficulties.

Integrating the operations of Metl-Span, which we acquired in June 2012, successfully or otherwise realizing any of the anticipated benefits of the Acquisition, including anticipated cost savings and additional revenue opportunities, involves a number of challenges. The failure to meet these integration challenges could seriously harm our results of operations and the market price of our common stock may decline as a result.

Realizing the benefits of the Acquisition will depend in part on the integration of organizations, operations, procedures, policies and technologies, as well as the harmonization of differences in the business cultures of the two companies and retention of key personnel. These integration activities are complex and time-consuming and we may encounter unexpected difficulties or incur unexpected costs, including:

our inability to achieve operating synergies anticipated in the Acquisition, which would prevent us from achieving the positive earnings gains expected as a result of the Acquisition;

- diversion of management attention from ongoing business concerns to integration matters;
- difficulties in consolidating and rationalizing information technology platforms and administrative infrastructures;
- complexities associated with managing the combined businesses;

challenges in demonstrating to our customers and to customers of Metl-Span that the Acquisition will not result in adverse changes in customer service standards or business focus; and

our inability to preserve supplier and other important relationships of both the Company and Metl-Span and resolve potential conflicts that may arise.

We may not successfully integrate the operations of Metl-Span in a timely manner, and we may not realize the synergies of the Acquisition to the extent, or in the timeframe, anticipated. In addition to the integration risks discussed above, our ability to realize these synergies could be adversely impacted by practical or legal constraints on our ability to combine operations.

Increases in energy prices will increase our operating costs, and we may be unable to pass all these increases on to our customers in the form of higher prices for our products.

Increases in energy prices will increase our operating costs and may reduce our profitability and cash flows if we are unable to pass all the increases on to our customers. We use energy in the manufacture and transport of our products. In particular, our manufacturing plants use considerable electricity and natural gas. Consequently, our operating costs typically increase if energy costs rise. During periods of higher energy costs, we may not be able to recover our operating cost increases through price increases without reducing demand for our products. To the extent we are not able to recover these cost increases through price increases or otherwise, our profitability and cash flow will be adversely impacted. We partially hedge our exposure to higher prices via fixed forward positions.

S-18

TABLE OF CONTENTS

The adoption of climate change legislation or regulations restricting emissions of greenhouse gases could increase our operating costs or reduce demand for our products.

More stringent laws and regulations relating to climate change and greenhouse gases (GHGs) may be adopted in the future and could cause us to incur additional operating costs or reduce the demand for our products. On December 15, 2009, the federal Environmental Protection Agency (the EPA) published its findings that emissions of carbon dioxide, methane, and other GHGs present an endangerment to public health, the economy and the environment because emissions of such gases are, according to the EPA contributing to the warming of the earth s atmosphere and other climate changes. These findings allowed the EPA to adopt and implement regulations that would restrict emissions of GHGs under existing provisions of the federal Clean Air Act.

The EPA adopted regulations that would require a reduction in emissions of GHGs and could trigger permit review for GHGs produced from certain stationary sources. In June 2010, EPA adopted the Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, which phases in permitting requirements for stationary sources of GHGs, beginning January 2, 2011. This rule tailors these permitting programs to apply to certain significant stationary sources of GHG emissions in a multi-step process, with the largest sources first subject to permitting. In October 2009, the EPA issued its final Greenhouse Gas Reporting Rule requiring the mandatory annual reporting of GHG emissions for calendar year 2010-forward from certain significant sources of GHG emission sources in the United States.

In addition, several North American multi-state climate initiatives are either actively studying, or have already implemented, measures to reduce GHG emissions, primarily through the planned development of GHG tracking systems and regional GHG emission trading programs. These programs typically require major sources of GHGs or major electricity generators to acquire and surrender emission allowances and offsets, with the number of allowances available for purchase reduced each year until an overall GHG emission reduction goal is achieved.

In October 2011, the California Air Resources Board adopted a cap-and-trade program that will help the state reduce GHG emissions to 1990-levels by 2020. This program, along with mandatory GHG reporting and other complementary measures, was authorized by the California Global Warming Solutions Act (AB 32) of 2006. Beginning in 2013, cap-and-trade regulations apply to all major industrial sources and electricity generators, and will expand in 2015 to cover the distributors of transportation fuels, natural gas and other fuels. The amount of allowances available to these sources is set to decline by about three percent each year through 2020 as the cap is lowered and emissions are reduced.

Although it is not possible to accurately predict how new GHG legislation or regulations would impact our business, any new federal, regional or state restrictions on emissions of carbon dioxide or other GHGs that may be imposed in areas where we conduct business could result in increased compliance costs or additional operating restrictions on us, our raw material suppliers and our customers. Such restrictions could potentially make our products more expensive and thus reduce their demand, which could have a material adverse effect on our business.

Breaches of our information system security measures could disrupt our internal operations.

We are dependent upon information technology for the distribution of information internally and also to our customers and suppliers. This information technology is subject to theft, damage or interruption from a variety of sources,

The adoption of climate change legislation or regulations restricting emissions of greenhouse gases could increase

including but not limited to malicious computer viruses, security breaches and defects in design. Various measures have been implemented to manage our risks related to information system and network disruptions, but a system failure or breach of these measures could negatively impact our operations and financial results.

Damage to our computer infrastructure and software systems could harm our business.

The unavailability of any of our primary information management systems for any significant period of time could have an adverse effect on our operations. In particular, our ability to deliver products to our customers when needed, collect our receivables and manage inventory levels successfully largely depend on the efficient operation of our computer hardware and software systems. Through information management

S-19

TABLE OF CONTENTS

systems, we provide inventory availability to our sales and operating personnel, improve customer service through better order and product reference data and monitor operating results. Difficulties associated with upgrades, installations of major software or hardware, and integration with new systems could lead to business interruptions that could harm our reputation, increase our operating costs and decrease our profitability. In addition, these systems are vulnerable to, among other things, damage or interruption from power loss, computer system and network failures, loss of telecommunications services, operator negligence, physical and electronic loss of data, or security breaches and computer viruses.

We have contracted with third-party service providers that provide us with redundant data center services in the event that our major information management systems are damaged. The backup data centers and other protective measures we take could prove to be inadequate. Our inability to restore data completely and accurately could lead to inaccurate and/or untimely filings of our periodic reports with the SEC, tax filings with the IRS or other required filings, all of which could have a significant negative impact on our corporate reputation and could negatively impact our stock price or result in fines or penalties that could impact our financial results.

Our operations are subject to hazards that may cause personal injury or property damage, thereby subjecting us to liabilities and possible losses, which may not be covered by insurance.

Our workers are subject to the usual hazards associated with work in manufacturing environments. Operating hazards can cause personal injury and loss of life, as well as damage to or destruction of business personal property, and possible environmental impairment. We are subject to either deductible or self-insured retention amounts, per claim or occurrence, under our Property/Casualty insurance programs, as well as an individual stop-loss limit per claim under our group medical insurance plan. We maintain insurance coverage to transfer risk, with aggregate and per-occurrence limits and deductible or retention levels that we believe are consistent with industry practice. The transfer of risk through insurance cannot guarantee that coverage will be available for every loss or liability that we may incur in our operations.

Exposures that could create insured (or uninsured) liabilities are difficult to assess and quantify due to unknown factors, including but not limited to injury frequency and severity, natural disasters, terrorism threats, third-party liability and claims that are incurred but not reported. Although we engage third-party actuarial professionals to assist us in determining our probable future loss exposure, it is possible that claims or costs could exceed our estimates or our insurance limits or could be uninsurable. In such instances we might be required to use working capital to satisfy these losses rather than to maintain or expand our operations, which could materially and adversely affect our operating results and our financial condition.

Risks Relating to Our Common Stock and this Offering

Our stock price has been and may continue to be volatile.

The trading price of our common stock has fluctuated in the past and is subject to significant fluctuations in response to the following factors, some of which are beyond our control:

variations in quarterly operating results;
deviations in our earnings from publicly disclosed forward-looking guidance;
variability in our revenues;

Edgar Filing: NCI BUILDING SYSTEMS INC - Form 424B1

changes in earnings estimates or loss of coverage of the Company by analysts;
our announcements of significant contracts, acquisitions, strategic partnerships or joint ventures;
general conditions in the metal components and engineered building systems industries;
uncertainty about current global economic conditions;
fluctuations in stock market price and volume; and
other general economic conditions.

During fiscal 2013, our stock price on the NYSE ranged from a high of \$17.85 per share to a low of \$10.87 per share.

In recent years, the stock market in general has experienced extreme price and volume

S-20

TABLE OF CONTENTS

fluctuations that have affected the market price for many companies in industries similar to ours. Some of these fluctuations have been unrelated to the operating performance of the affected companies. These market fluctuations may decrease the market price of our common stock in the future.

This offering will result in a substantial amount of shares of our common stock being traded that were not previously traded, which may depress the market price of our common stock.

Of the 74,785,726 shares of our common stock issued and outstanding as of November 3, 2013, approximately 74% are held by our officers, directors and the CD&R Funds, with approximately 72.4% were held by the CD&R Funds.

The remainder of our shares of issued and outstanding common stock are freely tradable on the NYSE without restriction or further registration under the Securities Act of 1933, as amended (the Securities Act), unless purchased by our affiliates as that term is defined in Rule 144 under the Securities Act. The shares of common stock being sold in this offering were not freely tradable prior to the completion of this offering, and the sale by the CD&R Funds of the shares of common stock in this offering will increase the number of shares of our common stock eligible to be traded on the NYSE, which could depress the market price of our common stock.

Future sales or issuances of substantial amounts of our common stock or the possibility of such sales or issuances may adversely affect the market price of our common stock.

Our officers, directors and the CD&R Funds collectively control approximately 74% of our issued and outstanding common stock. On May 14, 2013, the CD&R Funds delivered a formal notice requesting the conversion of their 339,293 shares of Series B Cumulative Convertible Participating Preferred Stock into common stock (the Conversion). In connection with the Conversion request, we issued to the CD&R Funds 54,136,817 shares of our common stock, representing 72.4% of our issued and outstanding Common Stock as of November 3, 2013. See Note 13 Series B Cumulative Convertible Participating Preferred Stock to the consolidated financial statements, included in our 2013 10-K, incorporated by reference herein, for more information on CD&R's equity investment. Future sales of our common stock by these stockholders could have the effect of lowering our stock price. The perceived risk associated with the possible sale of a large number of shares by these stockholders could cause some of our stockholders to sell their stock, thus causing the price of our stock to decline. In addition, actual or anticipated downward pressure on our stock price due to actual or anticipated sales of stock by our directors or officers could cause other institutions or individuals to engage in short sales of our common stock, which may further cause the price of our stock to decline.

From time to time our directors, executive officers or the CD&R Funds may sell shares of our common stock on the open market or otherwise, for a variety of reasons, which may be related or unrelated to the performance of our business. These sales will be publicly disclosed in filings made with the SEC. Our stockholders may perceive these sales as a reflection on management's view of the business, which may result in a drop in the price of our stock or cause some stockholders to sell their shares of our common stock.

We, each of the CD&R Funds, our directors and certain of our executive officers have agreed to a lock-up, meaning that, subject to certain exceptions, neither we nor they will sell any shares without the prior consent of Credit Suisse before April 10, 2014. Following the expiration of this 90-day lock-up period, shares of our common stock held by the CD&R Funds and our directors and officers party to the lock-up will be eligible for future sale, subject to the applicable volume, manner of sale, holding period and other limitations of Rule 144.

This offering will result in a substantial amount of shares of our common stock being traded that were not previously

In connection with the CD&R Funds equity investment in the Company, we entered into a stockholders agreement with the CD&R Funds pursuant to which the CD&R Funds have substantial governance and other rights and sets forth certain terms and conditions regarding the equity investment and the ownership of the CD&R Funds shares of common stock.

Pursuant to the stockholders agreement with the CD&R Funds, subject to certain ownership and other requirements and conditions, the CD&R Funds have the right to appoint a majority of directors to our board of directors, including the Lead Director or Chairman of the Executive Committee of our board of directors, and have consent rights over a variety of significant corporate and financing matters, including, subject to certain customary exceptions and specified baskets, sales and acquisitions of assets, issuances and

S-21

TABLE OF CONTENTS

redemptions of equity, incurrence of debt, the declaration or payment of extraordinary distributions or dividends and changes to the Company's line of business. In addition, the CD&R Funds are granted subscription rights under the terms and conditions of the stockholders agreement.

Further, effective as of the closing of the CD&R Funds' equity investment, we have taken all corporate action and filed all election notices or other documentation with the NYSE necessary to elect to take advantage of the exemptions to the requirements of sections 303A.01, 303A.04 and 303A.05 of the NYSE Listed Company Manual and, for so long as we qualify as a controlled company within the meaning set forth in the NYSE Listed Company Manual or any similar provision in the rules of a stock exchange on which the securities of the Company are quoted or listed for trading, we have agreed to use our reasonable best efforts to take advantage of the exemptions therein. Such exemptions exempt us from compliance with the NYSE's requirements for companies listed on the NYSE to have (1) a majority of independent directors, (2) a nominating/corporate governance committee and a compensation committee, in each case, composed entirely of independent directors and, (3) charters for the nominating/corporate governance committee and the compensation committee, in each case, addressing certain specified matters.

Moreover, the CD&R Funds control, and following the completion of this offering and the share repurchase, will continue to control, a majority of our common stock. After giving effect to the completion of the offering and the share repurchase, the CD&R Funds will beneficially own 44,486,817 shares, representing approximately 60.4%, of our common stock. Together with the CD&R Funds' rights under the stockholders agreement, this could discourage others from initiating any potential merger, takeover or other change of control transaction that may otherwise be beneficial to our business or our stockholders.

The CD&R Funds or their affiliates may compete directly against us.

Corporate opportunities may arise in the area of potential competitive business activities that may be attractive to us as well as to the CD&R Funds, including through potential acquisitions by the CD&R Funds or their affiliates of competing businesses. Any competition could intensify if an affiliate or subsidiary of the CD&R Funds were to enter into or acquire a business similar to ours.

If securities analysts do not publish research or reports about our Company, or if they issue unfavorable commentary about us or our industry or downgrade our common stock, the price of our common stock could decline.

The trading market for our common stock depends in part on the research and reports that third-party securities analysts publish about our Company and our industry. If one or more analysts cease coverage of our Company, we could lose visibility in the market. In addition, one or more of these analysts could downgrade our common stock or issue other negative commentary about our Company or our industry. As a result of one or more of these factors, the trading price of our common stock could decline.

TABLE OF CONTENTS

FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and some of the documents we have incorporated herein and therein by reference include statements concerning our expectations, beliefs, plans, objectives, goals, strategies, future events or performance and underlying assumptions and other statements that are not historical facts. These statements are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those expressed or implied by these statements. In some cases, our forward-looking statements can be identified by the words anticipate, believe, continue, could, estimate, expect, forecast, goal, intend, may, objective, plan, potential, predict, projection, should, will or other similar words. We based our forward-looking statements on our management's beliefs and assumptions based on information available to our management at the time the statements are made. We caution you that assumptions, beliefs, expectations, intentions and projections about future events may and often do vary materially from actual results. Therefore, we cannot assure you that actual results will not differ materially from those expressed or implied by our forward-looking statements. Accordingly, investors are cautioned not to place undue reliance on any forward-looking information, including any earnings guidance, if applicable. Although we believe that the expectations reflected in the forward-looking statements are reasonable, these expectations and the related statements are subject to risks, uncertainties, and other factors that could cause the actual results to differ materially from those projected. These risks, uncertainties, and other factors include, but are not limited to:

- industry cyclicality and seasonality;
- challenging economic conditions affecting the nonresidential construction industry;
- volatility in the U.S. economy and abroad, generally, and in the credit markets;
- ability to service or refinance our debt and obtain future financing;
- our ability to comply with the financial tests and covenants in our existing and future debt obligations;
- operational limitations or restrictions in connection with our debt;
- recognition of asset impairment charges;
- commodity price increases and/or limited availability of raw materials, including steel;
- the ability to make strategic acquisitions accretive to earnings;
- retention and replacement of key personnel;
- enforcement and obsolescence of intellectual property rights;
- fluctuations in customer demand;
- costs related to environmental cleanups and liabilities;
- competitive activity and pricing pressure;
- our ability to integrate Metl-Span with our business and to realize the anticipated benefits of the Acquisition;
- increases in energy prices;
- breaches of our information security system security measures and damage to our major information management systems;
- hazards that may cause personal injury or property damage, thereby subjecting us to liabilities and possible losses, which may not be covered by insurance;
- changes in laws or regulations, including the Dodd-Frank Act;
- costs and other effects of legal and administrative proceedings, settlements, investigations, claims and other matters;

S-23

TABLE OF CONTENTS

the volatility of our stock price;
the dilutive effect on our common stockholders of potential future sales of our common stock held by the selling stockholders; and

substantial governance and other rights held by the selling stockholders.

A forward-looking statement may include a statement of the assumptions or bases underlying the forward-looking statement. We believe that we have chosen these assumptions or bases in good faith and that they are reasonable.

However, we caution you that assumed facts or bases almost always vary from actual results, and the differences between assumed facts or bases and actual results can be material, depending on the circumstances. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements in this prospectus supplement, accompanying prospectus and the documents that we have incorporated by reference, including those described under the caption Risk Factors in Item 1A of our 2013 10-K and other reports we file with the SEC. We expressly disclaim any obligations to release publicly any updates or revisions to these forward-looking statements to reflect any changes in our expectations unless the securities laws require us to do so.

S-24

TABLE OF CONTENTS

USE OF PROCEEDS

We will not receive any proceeds from the sale of shares of our common stock by the selling stockholders identified in this prospectus supplement, their pledgees, donees, transferees or other successors in interest. The selling stockholders will receive all of the net proceeds from the sale of these shares. See Selling Stockholders.

CONCURRENT COMPANY REPURCHASE OF COMMON STOCK

We have entered into an agreement with the selling stockholders to repurchase 1,150,000 shares of our common stock directly from the selling stockholders in a private transaction at the price at which the shares of common stock are sold to the public in this offering, less the underwriting discount. The agreement between the selling stockholders and us for the share repurchase represents a private, non-underwritten transaction that was approved and recommended by the Affiliate Transactions Committee of our board of directors. We intend to fund the share repurchase with available liquidity, including liquidity available under our ABL Facility. The closing of the share repurchase will be contingent on the closing of, and is expected to occur concurrently with, this offering. The closing of this offering is not contingent on the closing of the share repurchase.

Following the closing of the share repurchase, the Company intends to cancel the shares it repurchases from the selling stockholders. The information in this prospectus supplement regarding the share repurchase is included herein solely for informational purposes. Nothing in this prospectus supplement should be construed as an offer to sell, or the solicitation of an offer to buy, any of our common stock subject to the share repurchase.

S-25

TABLE OF CONTENTS**CAPITALIZATION**

The following table sets forth our consolidated cash and cash equivalents and capitalization as of November 3, 2013:

on an actual basis; and

on an as adjusted basis to give effect to the concurrent repurchase of 1,150,000 shares of our common stock from the selling stockholders at an assumed aggregate purchase price of approximately \$20 million.

You should read this table together with our consolidated financial statements and the related notes included and incorporated by reference in this prospectus supplement and the accompanying prospectus.

	As of November 3, 2013	
	Actual	As adjusted ⁽¹⁾
	(In thousands, except share and per share amounts)	
Cash and cash equivalents	\$77,436	\$57,436
Note payable ⁽²⁾	613	613
Long-term Debt:		
Credit Agreement	237,775	237,775
ABL Facility ⁽³⁾		
Total Long-term Debt (including current portion)	237,775	237,775
Equity:		
Common stock, \$0.01 par value 100,000,000 shares authorized; 74,793,249 shares issued; 74,785,726 shares outstanding on an actual basis; and 73,635,726 shares outstanding on an as adjusted basis	1,471	1,471
Additional paid-in capital	638,574	638,574
Accumulated deficit	(382,735)	(382,735)
Accumulated other comprehensive loss	(4,436)	(4,436)
Treasury stock, at cost	(116)	(20,116)
Total equity	252,758	232,758
Total capitalization	\$491,146	\$471,146

(1) Assumes use of available cash to fund share repurchase. We may use available liquidity, including liquidity under our ABL Facility, to fund the share repurchase.

(2) The note payable is related to financed insurance premiums. As of November 3, 2013, we had outstanding a note payable in the amount of \$0.6 million.

(3) Our ABL Facility allows aggregate maximum borrowings of up to \$150.0 million. There were no amounts outstanding under our ABL Facility at November 3, 2013. In addition, at November 3, 2013, letters of credit totaling approximately \$10.2 million were outstanding but undrawn under our ABL Facility.

S-26

TABLE OF CONTENTS

DIVIDEND POLICY

We do not expect to pay dividends on our common stock for the foreseeable future.

S-27

TABLE OF CONTENTS**SELECTED HISTORICAL CONSOLIDATED FINANCIAL DATA**

The following table presents our selected consolidated financial data, as of and for the periods indicated. The selected consolidated financial data for the fiscal years ended November 3, 2013, October 28, 2012 and October 30, 2011 have been derived from our audited consolidated financial statements included in our Annual Reports on Form 10-K for the years ended November 3, 2013, October 28, 2012 and October 30, 2011 and incorporated by reference in this prospectus supplement. The selected consolidated financial data for the fiscal years ended October 3, 2010 and November 1, 2009 have been derived from our audited consolidated financial statements included in our Annual Reports on Form 10-K for the years ended October 3, 2010 and November 1, 2009 which are not incorporated by reference in this prospectus supplement.

This Selected Historical Consolidated Financial Data should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and our audited consolidated financial statements and related notes included in applicable Exchange Act reports and incorporated by reference in this prospectus supplement. Our consolidated financial data may not be indicative of our future performance.

	Fiscal Year Ended				
	November 3, 2013 ⁽¹⁾	October 28, 2012	October 30, 2011	October 31, 2010	November 1, 2009
	(In thousands, except per share data)				
Sales	\$1,308,395	\$1,154,010	\$959,577	\$870,526	\$965,252
Cost of sales, excluding gain on insurance recovery and asset impairments (recoveries), net	1,033,374	898,001	758,023	699,641	748,756
Lower of cost or market adjustment					39,986
Gain on insurance recovery	(1,023)				
Asset impairments (recoveries), net		(9)	1,121	1,070	6,291
Gross profit	276,044	256,018	200,433	169,815	170,219
Engineering, selling, general and administrative expenses	256,856	219,340	202,352	190,870	210,753
Goodwill and other intangible asset impairment					622,564
Acquisition-related costs		4,989			
Restructuring charges (recovery)			(292)	3,532	9,052
Change of control charges					11,168
Income (loss) from operations	19,188	31,689	(1,627)	(24,587)	(683,318)
Interest income	131	112	127	91	393
Interest expense	(20,988)	(16,827)	(15,723)	(17,918)	(29,249)
Debt extinguishment costs, net	(21,491)	(6,437)	-	76	(97,580)
Other income, net	1,421	460	876	2,131	2,045
Income (loss) before income taxes	(21,739)	8,997	(16,347)	(40,207)	(807,709)
Provision (benefit) from income taxes	(8,854)	4,084	(6,397)	(13,330)	(56,913)

Edgar Filing: NCI BUILDING SYSTEMS INC - Form 424B1

Net income (loss)	\$(12,885) ⁽²⁾	\$4,913 ⁽³⁾	\$(9,950) ⁽⁵⁾	\$(26,877) ⁽⁶⁾	\$(750,796) ⁽⁷⁾
Convertible preferred stock dividends and accretion		16,352	28,120	34,055	1,187
Convertible preferred stock beneficial conversion feature		11,878	9,396	250,295	10,526
Convertible preferred stock amendment		48,803			
Net loss applicable to common shares	\$(12,885) ⁽²⁾	\$(72,120) ⁽³⁾	\$(47,466) ⁽⁵⁾	\$(311,227) ⁽⁶⁾	\$(762,509) ⁽⁷⁾

S-28

TABLE OF CONTENTS

	Fiscal Year Ended				
	November 3, 2013 ⁽¹⁾	October 28, 2012	October 30, 2011	October 31, 2010	November 1, 2009
	(In thousands, except per share data)				
Loss per common share: ⁽⁹⁾					
Basic	\$(0.29)	\$(3.81)	\$(2.58)	\$(17.07)	\$(171.18)
Diluted	\$(0.29) ⁽²⁾	\$(3.81) ⁽³⁾	\$(2.58) ⁽⁵⁾	\$(17.07) ⁽⁶⁾	\$(171.18) ⁽⁷⁾
Weighted average number of common shares outstanding:					
Basic	44,761	18,932	18,369	18,229	4,403
Diluted	44,761 ⁽⁸⁾	18,932 ⁽⁸⁾	18,369 ⁽⁸⁾	18,229 ⁽⁸⁾	4,403 ⁽⁸⁾
Cash and cash equivalents	\$77,436	\$55,158	\$78,982	\$77,419	\$90,419
Total assets	780,263	751,484	561,154	560,524	614,168
Total debt	237,775	236,944 ⁽⁴⁾	130,699	136,305	150,249
Total stockholders equity (deficit)	252,758	(370,528)	(35,690)	(2,714)	50,078

(1) Fiscal 2013 includes 53 weeks of operating activity.

(2) Includes debt extinguishment costs of \$21.5 million (\$13.2 million after tax) and proceeds from insurance recovery of \$1.0 million (\$0.6 million after tax) and unreimbursed business interruption costs of \$0.5 million (\$0.3 million after tax) in fiscal 2013.

(3) Includes acquisition-related costs of \$5.0 million (\$3.7 million after tax), debt extinguishment costs of \$6.4 million (\$4.0 million after tax), actuarial determined general liability self-insurance of \$1.9 million (\$1.2 million after tax) and executive retirement costs of \$0.5 million (\$0.3 million after tax) in fiscal 2012.

(4) Includes debt discount of \$11.8 million.

(5) Includes restructuring charges of \$0.3 million (\$0.2 million after tax) and asset impairments of \$1.1 million (\$0.7 million after tax) in fiscal 2011.

(6) Includes restructuring charges of \$3.5 million (\$2.2 million after tax), asset impairments of \$1.1 million (\$0.7 million after tax) and environmental and other contingency adjustments of \$0.2 million (\$0.2 million after tax) in fiscal 2010.

(7) Includes goodwill and other intangible asset impairment of \$622.6 million (\$600.0 million after tax), debt extinguishment and refinancing costs of \$97.6 million (\$92.4 million after tax), lower of cost or market charge of \$40.0 million (\$25.8 million after tax), change in control charges of \$11.2 million (\$6.9 million after tax), restructuring charges of \$9.1 million (\$5.6 million after tax), asset impairments of \$6.3 million (\$3.9 million after tax), interest rate swap of \$3.1 million (\$1.9 million after tax) and environmental and other contingencies of \$1.1 million (\$0.7 million after tax) in fiscal 2009.

(8) In October 2009, we consummated an exchange offer to acquire all our 2.125% Convertible Senior Subordinated Notes due 2024 in an exchange for cash and 14.0 million shares of our common stock.

(9) Adjusted to reflect the 1-for-5 reverse stock split effected on March 5, 2010.

S-29

TABLE OF CONTENTS

PRICE RANGE OF COMMON STOCK

Our common stock is listed on the NYSE under the symbol NCS.

On January 9, 2014, the last quoted price per share of our common stock on the NYSE was \$18.67. As of December 31, 2013, there were 55 registered holders of our common stock.

The following table sets forth the high and low sales prices per share of our common stock as reported on the NYSE:

Fiscal Year 2012 Quarter Ended	High	Low
January 29	\$ 11.91	\$ 7.76
April 29	\$ 12.84	\$ 11.04
July 29	\$ 12.15	\$ 8.92
October 28	\$ 12.08	\$ 9.80
Fiscal Year 2013 Quarter Ended		
January 27	\$ 15.38	\$ 10.87
April 28	\$ 17.85	\$ 15.01
July 28	\$ 17.47	\$ 14.00
November 3	\$ 15.17	\$ 11.22
Fiscal Year 2014 Quarter Ended		
January 31 (through January 9, 2014)	\$ 18.77	\$ 14.38

S-30

TABLE OF CONTENTS

SELLING STOCKHOLDERS

The selling stockholders identified below may resell the common stock that are the subject of this prospectus supplement in the manner contemplated under Underwriting or as otherwise permitted by applicable law. The table below sets forth certain information known to us with respect to the beneficial ownership of the shares of our common stock held by the selling stockholders as of November 3, 2013. Because the selling stockholders may sell, transfer or otherwise dispose of all, some or none of the shares of our common stock covered by this prospectus supplement, we cannot determine the number of such shares that will be sold, transferred or otherwise disposed of by the selling stockholders, or the amount or percentage of shares of our common stock that will be held by the selling stockholders upon termination of any particular offering. See Underwriting. For the purposes of the table below, we assume that the selling stockholders will sell all of their shares of our common stock covered by this prospectus supplement. When we refer to the selling stockholders in this prospectus supplement, we mean the entities listed in the table below, as well as their pledgees, donees, assignees, transferees, and successors in interest. For a discussion of certain transactions with our selling stockholders, see Transactions with Related Persons in our Definitive Proxy Statement on Schedule 14A filed on January 28, 2013 with the SEC.

In the table below, the percentage of shares beneficially owned is based on 74,785,726 shares of our common stock outstanding as of November 3, 2013. Beneficial ownership is determined under the rules of the SEC and generally includes voting or investment power with respect to securities. Unless indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares beneficially owned, subject to community property laws where applicable. Shares of our common stock subject to options that are currently exercisable or exercisable within 60 days of the date of this prospectus supplement are deemed to be outstanding and to be beneficially owned by the person holding such options for the purpose of computing the percentage ownership of that person but are not treated as outstanding for the purpose of computing the percentage ownership of any other person.

* Based on 74,785,726 shares of common stock outstanding as of November 3, 2013.

In the event that this offering is completed but the share repurchase is not, Clayton, Dubilier & Rice Fund VIII, L.P. will be the beneficial owner of 45,522,854 shares and approximately 60.87% of our issued and outstanding common stock, assuming no exercise of the underwriters' option to purchase additional shares of common stock (or 44,251,038 shares and approximately 59.17% of our issued and outstanding common stock if the underwriters' option is fully exercised) and CD&R Friends & Family Fund VIII, L.P. will be the beneficial owner of 113,963 shares and approximately 0.15% of our issued and outstanding common stock, assuming no exercise of the underwriters' option to purchase additional shares of common stock (or 110,779 shares and approximately 0.15% of our issued and outstanding common stock if the underwriters' option is fully exercised).

S-31

TABLE OF CONTENTS

Based on 73,635,726 shares of common stock outstanding following the consummation of this offering. This total is calculated based on 74,785,726 shares of common stock outstanding as of November 3, 2013, minus 1,150,000 shares that we are repurchasing and will no longer be outstanding following the consummation of this offering.

Clayton, Dubilier & Rice Fund VIII, L.P. (Fund VIII) holds 54,001,628 shares of common stock, par value \$0.01 per share (shares of common stock, the Common Shares), of the Company. On May 14, 2013, Fund VIII delivered a Notice of Conversion of Preferred Stock to the Company, exercising the right to convert (i) 338,439.8334 shares (1) of the Company's Convertible Preferred Stock and (ii) an undeclared and unpaid dividend of \$5,766,549.04 accrued in 2009 with respect to the Convertible Preferred Stock, into 54,001,628 shares of common stock. Fund VIII's voting percentage is 72.21%, calculated based on 74,785,726 shares of common stock outstanding as of November 3, 2013, in the Company's Form 10-K for the fiscal year ended November 3, 2013.

CD&R Friends & Family Fund VIII, L.P. (F&F Fund VIII) holds 135,189 shares of common stock of the Company. On May 14, 2013, F&F Fund VIII delivered a Notice of Conversion of Preferred Stock to the Company, exercising the right to convert (i) 853.6370 shares of the Company's Convertible Preferred Stock and (ii) an undeclared and unpaid dividend of \$8,061.48 accrued in 2009 with respect to the Convertible Preferred Stock, into 135,189 shares of common stock. F&F Fund VIII's voting percentage is 0.18%, calculated based on 74,785,726 shares of common stock outstanding as of November 3, 2013, as reported in the Company's Form 10-K for the fiscal year ended November 3, 2013.

The general partner of each of the CD&R Funds is CD&R Associates VIII, Ltd., whose sole stockholder is CD&R Associates VIII, L.P. The general partner of CD&R Associates VIII, L.P. is CD&R Investment Associates VIII, Ltd.

CD&R Investment Associates VIII, Ltd. is managed by a two-person board of directors. Donald J. Gogel and Kevin J. Conway, as the directors of CD&R Investment Associates VIII, Ltd., may be deemed to share beneficial ownership of the shares of Common Stock shown as beneficially owned by each of the CD&R Funds. Such persons expressly disclaim such beneficial ownership. Investment and voting decisions with respect to shares held by each of the CD&R Funds are made by an investment committee of limited partners of CD&R Associates VIII, L.P., currently consisting of the following individuals (the Investment Committee): Michael G. Babiarz, Manvinder Singh Banga, James G. Berges, Kevin J. Conway, Thomas C. Franco, Kenneth A. Giuriceo, Donald J. Gogel, Theresa A. Gore, Marco Herbst, George K. Jaquette, Sarah Kim, Manfred Kindle, John Krenicki, Jr., Gregory Lai, Edward M. Liddy, John Malfettone, David A. Novak, Paul S. Pressler, Roberto Quarta, Eric Rahe, Christian P. Rochat, Eric Rouzier, Richard J. Schnall, Stephen Shapiro, Nathan K. Sleeper, Christian Storch, Derek L. Strum, Sonja Terraneo, Robert C. Volpe, David H. Wasserman and Jonathan L. Zrebiec. All members of the Investment Committee disclaim beneficial ownership of the shares shown as beneficially owned by the CD&R Funds.

Each of CD&R Associates VIII, L.P., CD&R Associates VIII, Ltd. and CD&R Investment Associates VIII, Ltd. expressly disclaims beneficial ownership of the shares held by the CD&R Funds and by CD&R, LLC and of stock options held by CD&R, LLC as assignee of director compensation payable to certain of the Company's directors. The CD&R Funds expressly disclaim beneficial ownership of the shares of Common Stock held by CD&R, LLC and of the stock options held by CD&R, LLC. CD&R, LLC expressly disclaims beneficial ownership of the shares of Common Stock held by the CD&R Funds.

The address for the CD&R Funds, CD&R Associates VIII, L.P., CD&R Associates VIII, Ltd. and CD&R Investment Associates VIII, Ltd. is c/o Maples Corporate Services Limited, P.O. Box 309, Uglan House, South Church Street, George Town, Grand Cayman, KY1-1104, Cayman Islands, British West Indies. The address for CD&R, LLC is 375 Park Avenue, 18th Floor, New York, NY 10152.

TABLE OF CONTENTS

U.S. FEDERAL TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following is a discussion of certain U.S. federal income tax considerations relating to the purchase, ownership and disposition of our common stock by Non-U.S. Holders (as defined below) that purchase our common stock pursuant to this offering and hold such common stock as a capital asset. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended (the Code), U.S. Treasury regulations promulgated or proposed thereunder, and administrative and judicial interpretations thereof, all as in effect on the date hereof and all of which are subject to change, possibly with retroactive effect, or to different interpretation. This discussion does not address all of the U.S. federal income tax considerations that may be relevant to specific Non-U.S. Holders in light of their particular circumstances or to Non-U.S. Holders subject to special treatment under U.S. federal income tax law (such as banks, insurance companies, dealers in securities or other Non-U.S. Holders that generally mark their securities to market for U.S. federal income tax purposes, foreign governments, international organizations, tax-exempt entities, certain former citizens or residents of the United States, or Non-U.S. Holders that hold our common stock as part of a straddle, hedge, conversion or other integrated transaction). This discussion does not address any U.S. state or local or non-U.S. tax considerations or any U.S. federal gift, unearned income Medicare contribution or alternative minimum tax considerations.

As used in this discussion, the term Non-U.S. Holder means a beneficial owner of our common stock that, for U.S. federal income tax purposes, is:

an individual who is neither a citizen nor a resident of the United States;
a corporation that is not created or organized in or under the laws of the United States, any state thereof, or the District of Columbia;
an estate that is not subject to U.S. federal income tax on income from non-U.S. sources which is not effectively connected with the conduct of a trade or business in the United States; or
a trust unless (i) a court within the United States is able to exercise primary supervision over its administration and one or more U.S. persons have the authority to control all of its substantial decisions or (ii) it has in effect a valid election under applicable U.S. Treasury regulations to be treated as a U.S. person.
If an entity treated as a partnership for U.S. federal income tax purposes invests in our common stock, the U.S. federal income tax considerations relating to such investment will depend in part upon the status and activities of such entity and the particular partner. Any such entity should consult its own tax advisor regarding the U.S. federal income tax considerations applicable to it and its partners relating to the purchase, ownership and disposition of our common stock.

PERSONS CONSIDERING AN INVESTMENT IN OUR COMMON STOCK SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. INCOME, ESTATE AND OTHER TAX CONSIDERATIONS RELATING TO THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK IN LIGHT OF THEIR PARTICULAR CIRCUMSTANCES.

Distributions on Common Stock

If we make a distribution of cash or other property (other than certain *pro rata* distributions of our common stock or rights to acquire our common stock) in respect of a share of our common stock, the distribution generally will be treated as a dividend to the extent it is paid from our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). If the amount of such distribution exceeds our current and accumulated earnings

and profits, such excess generally will be treated first as a tax-free return of capital to the extent of the Non-U.S. Holder's adjusted tax basis in such share of our common stock, and then as capital gain (which will be treated in the manner described below under "Sale, Exchange or Other Disposition of Common Stock"). Distributions treated as dividends on our common stock that are paid to or for the account of a Non-U.S. Holder generally will be subject to U.S. federal withholding tax at a rate of 30%, or at a lower rate if provided by an applicable tax treaty and the Non-U.S.

S-33

TABLE OF CONTENTS

Holder provides the documentation (generally, Internal Revenue Service (IRS) Form W-8BEN) required to claim benefits under such tax treaty to the applicable withholding agent.

If, however, a dividend is effectively connected with the conduct of a trade or business in the United States by a Non-U.S. Holder, such dividend generally will not be subject to the 30% U.S. federal withholding tax if such Non-U.S. Holder provides the appropriate documentation (generally, IRS Form W-8ECI) to the applicable withholding agent. Instead, such Non-U.S. Holder generally will be subject to U.S. federal income tax on such dividend in substantially the same manner as a U.S. holder (except as provided by an applicable tax treaty). In addition, a Non-U.S. Holder that is treated as a corporation for U.S. federal income tax purposes may be subject to a branch profits tax at a rate of 30% (or a lower rate if provided by an applicable tax treaty) on its effectively connected income for the taxable year, subject to certain adjustments.

The foregoing discussion is subject to the discussion below under FATCA Withholding and Information Reporting and Backup Withholding.

Sale, Exchange or Other Disposition of Common Stock

A Non-U.S. Holder generally will not be subject to U.S. federal income tax on any gain recognized on the sale, exchange or other disposition of our common stock unless:

- such gain is effectively connected with the conduct of a trade or business in the United States by such Non-U.S. Holder, in which event such Non-U.S. Holder generally will be subject to U.S. federal income tax on such gain in (i) substantially the same manner as a U.S. holder (except as provided by an applicable tax treaty) and, if it is treated as a corporation for U.S. federal income tax purposes, may also be subject to a branch profits tax at a rate of 30% (or a lower rate if provided by an applicable tax treaty);
- (ii) such Non-U.S. Holder is an individual who is present in the United States for 183 days or more during the taxable year of such sale, exchange or other disposition and certain other conditions are met, in which event such gain (net of certain U.S. source losses) generally will be subject to U.S. federal income tax at a rate of 30% (except as provided by an applicable tax treaty); or
- (iii) NCI is or has been a United States real property holding corporation for U.S. federal income tax purposes at any time during the shorter of (x) the five-year period ending on the date of such sale, exchange or other disposition and (y) such Non-U.S. Holder's holding period with respect to such common stock, and certain other conditions are met.

Generally, a corporation is a United States real property holding corporation if the fair market value of its United States real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests and its other assets used or held for use in a trade or business (all as determined for U.S. federal income tax purposes). We do not believe that NCI is, and we do not presently anticipate that NCI will become, a United States real property holding corporation.

The foregoing discussion is subject to the discussion below under FATCA Withholding and Information Reporting and Backup Withholding.

FATCA Withholding

Under the Foreign Account Tax Compliance Act provisions of the Code and related U.S. Treasury guidance (FATCA), a withholding tax of 30% will be imposed in certain circumstances on payments of (a) dividends on our common stock on or after July 1, 2014, and (b) gross proceeds from the sale or other disposition of our common stock

on or after January 1, 2017. In the case of payments made to a foreign financial institution (generally including an investment fund), as a beneficial owner or as an intermediary, the tax generally will be imposed, subject to certain exceptions, unless such institution (i) enters into (or is otherwise subject to) and complies with an agreement with the U.S. government (a FATCA Agreement) or (ii) is required by and complies with applicable foreign law enacted in connection with an intergovernmental agreement between the United States and a foreign jurisdiction (an IGA), in either case to, among other things, collect and provide to the U.S. tax authorities or other relevant tax authorities certain information regarding U.S. account holders of such institution. In the case of payments made to a foreign entity that is not

S-34

TABLE OF CONTENTS

a financial institution (as a beneficial owner), the tax generally will be imposed, subject to certain exceptions, unless such entity provides the withholding agent with a certification that it does not have any substantial U.S. owner (generally, any specified U.S. person that directly or indirectly owns more than a specified percentage of such entity) or that identifies its substantial U.S. owners. If our common stock is held through a foreign financial institution that enters into (or is otherwise subject to) a FATCA Agreement, such foreign financial institution (or, in certain cases, a person paying amounts to such foreign financial institution) generally will be required, subject to certain exceptions, to withhold tax on payments of dividends and proceeds described above made to (x) a person (including an individual) that fails to comply with certain information requests or (y) a foreign financial institution that has not entered into (and is not otherwise subject to) a FATCA Agreement and is not a person required to comply with FATCA pursuant to applicable foreign law enacted in connection with an IGA. Each Non-U.S. Holder should consult its own tax advisor regarding the application of FATCA to the ownership and disposition of our common stock.

Information Reporting and Backup Withholding

Amounts treated as payments of dividends on our common stock paid to a Non-U.S. Holder and the amount of any U.S. federal tax withheld from such payments generally must be reported annually to the IRS and to such Non-U.S. Holder.

The information reporting and backup withholding rules that apply to payments of dividends to certain U.S. persons generally will not apply to payments of dividends on our common stock to a Non-U.S. Holder if such Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person (generally by providing an IRS Form W-8BEN) or otherwise establishes an exemption.

Proceeds from the sale, exchange or other disposition of our common stock by a Non-U.S. Holder effected through a non-U.S. office of a U.S. broker or of a non-U.S. broker with certain specified U.S. connections generally will be subject to information reporting (but not backup withholding) unless such Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person (generally by providing an IRS Form W-8BEN) or otherwise establishes an exemption. Proceeds from the sale, exchange or other disposition of our common stock by a Non-U.S. Holder effected through a U.S. office of a broker generally will be subject to information reporting and backup withholding unless such Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person (generally by providing an IRS Form W-8BEN) or otherwise establishes an exemption.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules generally will be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability if the required information is furnished by such Non-U.S. Holder on a timely basis to the IRS.

U.S. Federal Estate Tax

Shares of our common stock owned or treated as owned by an individual Non-U.S. Holder at the time of such Non-U.S. Holder's death will be included in such Non-U.S. Holder's gross estate for U.S. federal estate tax purposes and may be subject to U.S. federal estate tax unless an applicable estate tax treaty provides otherwise.

TABLE OF CONTENTS**UNDERWRITING**

Under the terms and subject to the conditions contained in an underwriting agreement dated January 9, 2014, the selling stockholders have agreed to sell to the underwriters named below, for whom Credit Suisse Securities (USA) LLC (Credit Suisse), Citigroup Global Markets Inc. and RBC Capital Markets, LLC are acting as representatives, and each underwriter has severally agreed to purchase the following respective numbers of shares of common stock set forth opposite its name below.

Underwriters	Number of Shares
Credit Suisse Securities (USA) LLC	2,550,000
Citigroup Global Markets Inc.	2,337,500
RBC Capital Markets, LLC	1,700,000
UBS Securities LLC	850,000
BB&T Capital Markets, a division of BB&T Securities, LLC	425,000
Stephens Inc.	425,000
Sidoti & Company, LLC	212,500
Total	8,500,000

In addition, we have entered into an agreement with the selling stockholders to repurchase 1,150,000 of our common stock, concurrently with the closing of this offering, directly from the selling stockholders in a private transaction at the price at which the shares of common stock are sold to the public in this offering, less the underwriting discount. The closing of the share repurchase will be contingent on the closing of this offering. The closing of this offering is not contingent on the closing of the share repurchase. See Concurrent Company Repurchase of Common Stock.

The underwriting agreement provides that the underwriters are obligated to purchase all the shares of common stock in the offering if any are purchased, other than those shares covered by the option described below. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The offering of the shares by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

The underwriters propose to offer the shares of common stock directly to the public at the public offering price set forth on the cover page of this prospectus supplement. After the public offering of the shares, the offering price and other selling terms may be changed by the underwriters. Sales of shares made outside of the United States may be made by affiliates of the underwriters. The underwriters have advised us that they do not intend to confirm discretionary sales in excess of 5% of the shares of common stock offered in this offering.

The selling stockholders have granted the underwriters a 30-day option to purchase on a pro rata basis up to 1,275,000 additional shares at the public offering price less the underwriting discounts and commissions.

The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

No Exercise Full Exercise

Edgar Filing: NCI BUILDING SYSTEMS INC - Form 424B1

Per share	\$ 0.855	\$ 0.855
Total	\$ 7,267,500	\$ 8,357,625

The expenses of the offering, including expenses incurred by the selling stockholders but not including the underwriting discount, are estimated at \$900,000 and are payable by us. The underwriters have agreed to reimburse the selling stockholders for certain of their expenses in connection with the offering upon closing of the offering.

The selling stockholders have retained Solebury Capital LLC (Solebury), a Financial Industry Regulatory Authority, or FINRA, member, to provide certain financial consulting services (which do not

S-36

TABLE OF CONTENTS

include underwriting services) in connection with this offering. The selling stockholders have agreed to pay Solebury, only upon successful completion of this offering, a fee of \$225,000. Solebury's services include advice with respect to selection of the underwriters for this offering, deal structuring, fee and economics recommendations, distribution strategy recommendations and preparation of presentation materials. Solebury is not acting as an underwriter and has no contact with any public or institutional investor on behalf of us or the underwriters. In addition, Solebury will not underwrite or purchase any of our common stock in this offering or otherwise participate in any such undertaking.

We have agreed, subject to certain customary exceptions, that we will not offer, sell, contract to sell, pledge, grant any option to purchase make any short sale or otherwise dispose of, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock, including but not limited to any options or warrants to purchase our common stock, or enter into any hedging or other transaction which is designed or which reasonably could be expected to lead to or result in a sale or disposition of our common stock, without the prior written consent of Credit Suisse for a period of 90 days after the date of this prospectus supplement, except issuances pursuant to employee stock option plans, stock incentive plans or director incentive plans existing on, or upon or in connection with the conversion, exercise, exchange or settlement of, or offer to convert, exchange or settle, any option or convertible or exchangeable securities outstanding on the date hereof. However, in the event that either (1) during the last 17 days of the lock-up period, we release earnings results or announce material news or a material event relating to us occurs or (2) prior to the expiration of the lock-up period, we announce that we will release earnings results during the 15-day period following the last day of the lock-up period, then in either case the expiration of the lock-up will be extended until the expiration of the 18-day period beginning on the date of the release of the earnings results or the announcement of the material news or material event, as applicable, unless Credit Suisse waives, in writing, such an extension. Credit Suisse may, in its sole discretion, release all or some portion of the shares subject to the lock-up agreement prior to expiration of such period.

The selling stockholders and our directors and certain of our executive officers have agreed, subject to certain customary exceptions, that they will not offer, sell, contract to sell, or otherwise dispose of, any shares of our common stock or any options or warrants to purchase shares of our common stock, or securities convertible into or exchangeable or exercisable for any shares of our common stock, or enter into a transaction that would have the same effect (other than pursuant to employee stock option plans, stock incentive plans or director incentive plans existing on, or upon or in connection with the conversion, exercise, exchange or settlement of, or offer to convert, exchange or settle, any option or convertible or exchangeable securities outstanding as of, the date of this prospectus supplement), without, in each case, the prior written consent of Credit Suisse for a period of 90 days after the date of this prospectus. This lock-up also applies to common stock owned now or acquired later by the person executing the lock-up agreement in connection with the exercise of any option. However, in the event that either (1) during the last 17 days of the lock-up period, we release earnings results or material news or a material event relating to us occurs or (2) prior to the expiration of the lock-up period, we announce that we will release earnings results during the 15-day period following the last day of the lock-up period, then in either case the expiration of the lock-up will be extended until the expiration of the 18-day period beginning on the date of the release of the earnings results or the announcement of the material news or event, as applicable, unless Credit Suisse waives, in writing, such an extension. Credit Suisse may, in its sole discretion, release all or some portion of the shares subject to the lock-up agreements prior to expiration of such period.

We and the selling stockholders have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

Shares of our common stock are listed on the NYSE under the symbol NCS.

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of our common stock in the open market for the purpose of preventing or retarding a decline in the market price of our common stock while this offering is in progress. These stabilizing transactions may include making short sales of our common stock, which involves the sale by the underwriters of a greater number of shares of our common stock than they are required to purchase in

S-37

TABLE OF CONTENTS

this offering, and purchasing shares of our common stock on the open market to cover positions created by short sales. Short sales may be covered shorts, which are short positions in an amount not greater than the underwriters' option to purchase additional shares referred to above, or may be naked shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M under the Exchange Act they may also engage in other activities that stabilize, maintain or otherwise affect the price of our common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchases common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock, and, as a result, the price of our common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the New York Stock Exchange, in the over-the-counter market or otherwise.

A prospectus in electronic format may be made available on the web sites maintained by the underwriters participating in this offering and the underwriters participating in this offering may distribute prospectuses electronically. The underwriters may allocate a number of shares for sale to online brokerage account holders. Internet distributions will be allocated by the underwriters and selling group members that will make internet distributions on the same basis as other allocations.

The underwriters and their affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. The underwriters and their affiliates have provided and may in the future provide, a variety of these services to us and the selling stockholders and to persons and entities with relationships with us and the selling stockholders, for which they received or will receive customary fees and expenses. Certain of the underwriters and their affiliates are lenders, administrative agents and/or bookrunners and syndication agents for various credit facilities and other borrowings by us and our affiliates, which may include our ABL Facility and certain of our term loans pursuant to our Credit Agreement. In addition, from time to time, the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future. Furthermore, the underwriters and their affiliates may enter into arms-length transactions with us and the selling stockholders in the ordinary course of their business.

In the ordinary course of their various business activities, the underwriters and their affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of the issuer (directly, as collateral securing other obligations or otherwise) and/or persons and

entities with relationships with the issuer. The underwriters and their affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

S-38

TABLE OF CONTENTS

European economic area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State) an offer to the public of any shares which are the subject of the offering contemplated by this Prospectus may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any shares may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the joint book-running managers for any such offer; or
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares shall result in a requirement for the publication by the issuer or the underwriters of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an offer to the public in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase any shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State, and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

Hong Kong

The shares may not be offered or sold in Hong Kong, by means of any document, other than (a) to professional investors as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a prospectus as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance.

No advertisement, invitation or document, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) may be issued, whether in Hong Kong or elsewhere, other than with respect to the shares which are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors within the meaning of the Securities and Futures Ordinance and any rules made under that Ordinance.

Warning

The contents of this document have not been reviewed by any regulatory authority in Hong Kong. You are advised to exercise caution in relation to the offer. If you are in any doubt about any of the contents of this document, you should

obtain independent professional advice.

Japan

The shares have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial Instruments and Exchange Law). Accordingly, no resident of Japan may participate in the offering of the shares and the underwriters have agreed that they may not offer or sell any shares, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

S-39

TABLE OF CONTENTS

Singapore

The offer or invitation which is the subject of this document is only allowed to be made to the persons set out herein. Moreover, this document is not a prospectus as defined in the Securities and Futures Act (Chapter 289) of Singapore (SFA) and accordingly, statutory liability under the SFA in relation to the content of the document will not apply.

As this document has not been and will not be lodged with or registered as a document by the Monetary Authority of Singapore, this document and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than: (i) to an institutional investor under Section 274 of the SFA; (ii) to a relevant person, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions, specified in Section 275 of the SFA; or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person who is:

(a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for six months after that corporation or that trust has acquired the shares under Section 275 of the SFA except:

(1) to an institutional investor under Section 274 of the SFA or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than \$200,000 (or its equivalent foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets;

(2) where no consideration is given for the transfer; or

(3) by operation of law.

By accepting this document, the recipient hereof represents and warrants that he is entitled to receive such report in accordance with the restrictions set forth above and agrees to be bound by the limitations contained herein. Any failure to comply with these limitations may constitute a violation of law.

Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland.

This document has been prepared without regard to the disclosure standards for issuance prospectuses under article 652a or article 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under article 27 et seq. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in

Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company or the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

S-40

TABLE OF CONTENTS

United Kingdom

This prospectus and any other material in relation to the shares described herein may only be distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospective Directive (qualified investors) that also (i) have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the Order, (ii) who fall within Article 49(2)(a) to (d) of the Order or (iii) to whom it may otherwise lawfully be communicated (all such persons together being referred to as relevant persons). The shares are only available to, and any invitation, offer or agreement to purchase or otherwise acquire such shares will be engaged in only with, relevant persons. This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other person in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this prospectus or any of its contents.

S-41

TABLE OF CONTENTS

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports and other information with the SEC under the Exchange Act (Commission File No. 001-14315). You may read and copy any document we file with the SEC at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call 1-800-SEC-0330 for further information about the operation of the Public Reference Room. Materials also may be obtained from the SEC's website (<http://www.sec.gov>), which contains reports, proxy and information statements and other information regarding companies that file electronically with the SEC. Our filings are also available to the public at our website (<http://www.ncigroup.com>). The information on our website and any other website is not incorporated in this prospectus supplement by reference, and you should not consider it a part of this prospectus supplement. In addition, documents filed by us can be inspected at the offices of the New York Stock Exchange, Inc., 20 Broad Street, New York, New York 10005. You may also request a copy of our filings by contacting our Investor Relations Department, attention Layne de Alvarez at: (281) 897-7710 or by writing to us at 10943 North Sam Houston Parkway West, Houston, Texas 77064, Attention: Investor Relations, Layne de Alvarez.

The SEC allows us to incorporate by reference into this prospectus supplement the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below (File No. 001-14315) and any future filings we make with the SEC under section 13(a), 13(c), 14 or 15(d) of the Exchange Act until this offering is completed or otherwise terminated (other than information that is furnished and not deemed filed under the Exchange Act):

our Definitive Proxy Statement on Schedule 14A, filed January 28, 2013;

our Annual Report on Form 10-K for the fiscal year ended November 3, 2013;

the description of our common stock contained in our Form 8-A/A, filed on June 25, 1999, and any subsequent amendment thereto filed for the purpose of updating such description.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus supplement is delivered, upon written or oral request, a copy of any document incorporated by reference into this prospectus supplement, other than exhibits to any such document not specifically described above. Requests for such documents should be directed to our Investor Relations Department, Layne de Alvarez at (281) 897-7710 or by writing to us at 10943 North Sam Houston Parkway West, Houston, Texas 77064, Attention: Investor Relations, Layne de Alvarez.

LEGAL MATTERS

The validity of the common stock offered in this prospectus supplement will be passed upon by Debevoise & Plimpton LLP. Certain legal matters in connection with the offering of the securities made by this prospectus supplement are passed upon by Latham & Watkins LLP, New York, New York, counsel for the underwriters in this offering.

EXPERTS

The consolidated financial statements of NCI Building Systems, Inc. appearing in NCI Building Systems, Inc.'s Annual Report on Form 10-K for the year ended November 3, 2013, and the effectiveness of NCI Building Systems, Inc.'s internal control over financial reporting as of November 3, 2013, have been audited by Ernst & Young LLP,

independent registered public accounting firm, as set forth in their reports thereon, included therein and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

S-42

TABLE OF CONTENTS

PROSPECTUS

NCI BUILDING SYSTEMS, INC.

54,136,818 Shares of Common Stock Offered by the Selling Stockholders

This prospectus relates to up to 54,136,818 shares of our common stock, par value \$.01 per share, which may be offered for sale from time to time by the selling stockholders named in this prospectus. The shares of common stock registered hereby are issuable to the selling stockholders from time to time upon conversion of the Series B Cumulative Convertible Participating Preferred Stock (the Convertible Preferred Stock, and shares thereof, the Preferred Shares) held by them, after giving effect to accrued but unpaid cash and Convertible Preferred Stock dividends in the amount of \$5.8 million, at the initial conversion price of \$6.374 per share as specified in the Certificate of Designations governing the Convertible Preferred Stock, as amended through the date hereof. The selling stockholders may elect to sell the shares of common stock described in this prospectus in a number of different ways and at varying prices. We provide more information about how the selling stockholders may elect to sell their shares of common stock in the section titled Plan of Distribution on page 9 of this prospectus. We and the selling stockholders named in this prospectus are parties to a registration rights agreement with respect to the shares of our common stock issuable upon conversion of the Preferred Shares. We will not receive any proceeds from any sale of shares of common stock by any selling stockholder. We will bear all expenses of any offering of common stock, except that the selling stockholders will pay any applicable underwriting fees, discounts or commissions and certain transfer taxes.

You should read this prospectus and the related prospectus supplement carefully before you invest in our securities. No person may use this prospectus to offer and sell our securities unless a prospectus supplement accompanies this prospectus.

Our common stock is listed on the New York Stock Exchange (NYSE) under the trading symbol NCS.

You should consider carefully the risk factors on page 2 of this prospectus and in any applicable prospectus supplement before purchasing any of our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is March 27, 2013.

TABLE OF CONTENTS

TABLE OF CONTENTS
PROSPECTUS

	Page
<u>About This Prospectus</u>	<u>1</u>
<u>Our Company</u>	<u>1</u>
<u>Risk Factors</u>	<u>2</u>
<u>Forward-Looking Statements</u>	<u>2</u>
<u>Use of Proceeds</u>	<u>3</u>
<u>General Description of the Common Stock that the Selling Stockholders May Sell</u>	<u>4</u>

	Page
<u>Selling Stockholders</u>	<u>8</u>
<u>Plan of Distribution</u>	<u>9</u>
<u>Where You Can Find More Information</u>	<u>12</u>
<u>Legal Matters</u>	<u>13</u>
<u>Experts</u>	<u>13</u>

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we have filed with the U.S. Securities and Exchange Commission the SEC using a shelf registration process. Pursuant to this prospectus, the selling stockholders named on page 8 may, from time to time, sell up to a total of 54,136,818 shares of common stock described in this prospectus in one or more offerings. The shares of common stock registered hereby are issuable to the selling stockholders from time to time upon conversion of the Convertible Preferred Stock held by them. This prospectus only provides you with a general description of the securities the selling stockholders may offer. If required by applicable law, each time the selling stockholders use this prospectus to offer securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering, including specific amounts, prices and terms of the securities offered. The prospectus supplement may also add to, update or change the information contained in this prospectus. If there is any inconsistency between the information in this prospectus and any prospectus supplement, you should rely on the information in the prospectus supplement. Please carefully read this prospectus, the prospectus supplement and any pricing supplement, in addition to the information contained in the documents we refer to under the heading Where You Can Find More Information on page 12 of this prospectus.

You should rely only on the information contained in or incorporated by reference into this prospectus and any prospectus supplement. We have not authorized anyone to provide you with different information. You should assume that the information appearing in or incorporated by reference into this prospectus and any prospectus supplement is accurate only as of the date on its cover page and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since such dates.

OUR COMPANY

NCI Building Systems, Inc. is one of North America's largest integrated manufacturers and marketers of metal products for the nonresidential construction industry. Of the \$148 billion nonresidential construction industry, we primarily serve the low-rise nonresidential construction market (five stories or less) which, according to FW Dodge/McGraw-Hill represented approximately 88% of the total nonresidential construction industry during our fiscal year 2012. Our broad range of products are used in repair, retrofit and new construction activities, primarily in North America.

We provide metal coil coating services for commercial and construction applications, servicing both internal and external customers. We design, engineer, manufacture and market what we believe is one of the most comprehensive lines of metal components and engineered building systems in the industry, with a reputation for high quality and superior engineering and design. We go to market with well-recognized brands, which allow us to compete effectively within a broad range of end-user markets including industrial, commercial, institutional and agricultural. Our service versatility allows us to support the varying needs of our diverse customer base, which includes general contractors and sub-contractors, developers, manufacturers, distributors and a current network of over 3,400 authorized builders across North America.

We are comprised of a family of companies operating 38 manufacturing facilities spanning the United States and Mexico, with additional sales and distribution offices throughout the United States and Canada. Our broad geographic footprint along with our hub-and-spoke distribution system allows us to efficiently supply a broad range of customers with high quality customer service and reliable deliveries.

The Company was founded in 1984 and reincorporated in Delaware in 1991. In 1998, we acquired Metal Building Components, Inc. (MBCI) and doubled our revenue base. As a result of the acquisition of MBCI, we became the largest domestic manufacturer of nonresidential metal components. In 2006, we acquired Robertson-Ceco II Corporation (RCC) which operates the Ceco Building Systems, Star Building Systems and Robertson Building Systems divisions and is a leader in the metal buildings industry. The RCC acquisition created an organization with greater product and geographic diversification, a stronger customer base and a more extensive distribution network than either company had individually, prior to the acquisition. In 2012, we completed the acquisition of Metl-Span LLC, a Texas limited liability company (Metl-Span). Metl-Span operates five manufacturing facilities in the United States serving the nonresidential building products market with cost-effective and energy efficient insulated metal wall and roof panels. This transaction strengthened our position as a leading fully integrated supplier to the nonresidential building products industry in North America, providing our customers a comprehensive suite of building products.

TABLE OF CONTENTS

In this prospectus, we refer to NCI, its wholly owned and majority owned subsidiaries as we, us or our, unless we specifically state otherwise or the context indicates otherwise. Our principal executive offices are located at 10943 North Sam Houston Parkway West, Houston, Texas 77064, and our telephone number at that location is (281) 897-7788.

RISK FACTORS

An investment in our securities involves risks. You should carefully consider all of the information contained in or incorporated by reference in this prospectus and other information which may be incorporated by reference in this prospectus or any prospectus supplement as provided under Where You Can Find More Information, including the risks described under Risk Factors and Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Reports on Form 10-K and our Quarterly Reports on Form 10-Q. This prospectus also contains forward-looking statements that involve risks and uncertainties. Please read Forward-Looking Statements.

Our actual results could differ materially from those anticipated in the forward-looking statements as a result of certain factors, including the risks described elsewhere in this prospectus or any prospectus supplement and in the documents incorporated by reference into this prospectus or any prospectus supplement. If any of these risks occur, our business, financial condition or results of operations could be adversely affected. Additional risks not currently known to us or that we currently deem immaterial may also have a material adverse effect on us.

FORWARD-LOOKING STATEMENTS

This prospectus, any accompanying prospectus supplement and some of the documents we have incorporated herein and therein by reference include statements concerning our expectations, beliefs, plans, objectives, goals, strategies, future events or performance and underlying assumptions and other statements that are not historical facts. These statements are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those expressed or implied by these statements. In some cases, our forward-looking statements can be identified by the words anticipate, believe, continue, could, estimate, expect, forecast, goal, intend, may, objective, plan, potential, predict, projection, should, will or other similar words. Our forward-looking statements are based on our management's beliefs and assumptions based on information available to our management at the time the statements are made. We caution you that assumptions, beliefs, expectations, intentions and projections about future events may and often do vary materially from actual results. Therefore, we cannot assure you that actual results will not differ materially from those expressed or implied by our forward-looking statements. Accordingly, investors are cautioned not to place undue reliance on any forward-looking information, including any earnings guidance, if applicable. Although we believe that the expectations reflected in the forward-looking statements are reasonable, these expectations and the related statements are subject to risks, uncertainties, and other factors that could cause the actual results to differ materially from those projected. These risks, uncertainties, and other factors include, but are not limited to:

- industry cyclicality and seasonality and adverse weather conditions;
- challenging economic conditions affecting the nonresidential construction industry;
- volatility in the U.S. economy and abroad, generally, and in the credit markets;
- our ability to service or refinance our debt and obtain future financing;
- operational limitations or restrictions in connection with our debt;
- recognition of asset impairment charges;
- commodity price increases and/or limited availability of raw materials, including steel;

the ability to make strategic acquisitions accretive to earnings;
retention and replacement of key personnel;

2

TABLE OF CONTENTS

enforcement and obsolescence of intellectual property rights;
fluctuations in customer demand;
costs related to environmental cleanups and liabilities;
competitive activity and pricing pressure;
the volatility of our stock price;

the substantial rights, seniority and dilutive effect on our common stockholders of the Convertible Preferred Stock issued to investment funds affiliated with Clayton, Dubilier & Rice, LLC;
breaches of our information security system security measures;

hazards that may cause personal injury or property damage, thereby subjecting us to liabilities and possible losses, which may not be covered by insurance;

changes in laws or regulations;

our ability to integrate Metl-Span LLC with our business and to realize the anticipated benefits of such acquisition;
and
costs and other effects of legal and administrative proceedings, settlements, investigations, claims and other matters.

A forward-looking statement may include a statement of the assumptions or bases underlying the forward-looking statement. We believe that we have chosen these assumptions or bases in good faith and that they are reasonable. However, we caution you that assumed facts or bases almost always vary from actual results, and the differences between assumed facts or bases and actual results can be material, depending on the circumstances. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements in this prospectus and the documents that we have incorporated by reference, including those described under the caption Risk Factors in Item 1A of our most recent annual report on Form 10-K and subsequently filed quarterly reports on Form 10-Q. We expressly disclaim any obligations to release publicly any updates or revisions to these forward-looking statements to reflect any changes in our expectations unless the securities laws require us to do so.

USE OF PROCEEDS

We will not receive any proceeds from the sale of shares of our common stock by the selling stockholders identified in this prospectus, their pledgees, donees, transferees or other successors in interest. The selling stockholders will receive all of the net proceeds from the sale of their shares or our common stock. See Selling Stockholders.

TABLE OF CONTENTS

GENERAL DESCRIPTION OF THE COMMON STOCK THAT THE SELLING STOCKHOLDERS MAY SELL

The following is a description of NCI Building Systems, Inc.'s restated certificate of incorporation (Certificate of Incorporation) and third amended and restated by-laws (By-Laws). The following descriptions of our capital stock and provisions of the Certificate of Incorporation and By-Laws are summaries of their material terms and provisions and are qualified by reference to the Certificate of Incorporation and By-Laws. The descriptions do not purport to be complete statements of the provisions of the Certificate of Incorporation By-Laws. You must read those documents for complete information on the terms of our capital stock.

Our authorized capital stock consists of

100,000,000 shares of common stock, \$.01 par value per share, of which 20,699,203 shares are issued and outstanding as of March 1, 2013; and

1,000,000 shares of Convertible Preferred Stock, \$1.00 par value per share, of which 339,293 shares are issued and outstanding as of March 1, 2013.

The shares of common stock registered hereby are issuable to the selling stockholders from time to time upon conversion of the Convertible Preferred Stock held by them.

The following summary of certain provisions of our common stock and preferred stock does not purport to be complete and is subject to, and qualified in its entirety by, our Certificate of Incorporation and By-Laws.

Common Stock

Holders of common stock are entitled to one vote per share on any matter submitted to the vote of stockholders. Cumulative voting is prohibited in the election of our directors. Subject to preferences that may be applicable to any outstanding preferred stock, the holders of common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by the Board of Directors out of funds legally available therefor. Subject to the rights of the holders of any outstanding series of preferred stock, the number of authorized shares of any class or classes of stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holder or holders of a majority of the stock of the corporation entitled to vote generally in the election of directors. The holders of common stock, as such, shall not be entitled to vote on any amendment to our Certificate of Incorporation (including any certificate of designation relating to any series of preferred stock) that relates solely to the terms of one or more outstanding series of preferred stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to our Certificate of Incorporation (including any certificate of designation relating to any series of preferred stock) or pursuant to the General Corporation Law of the State of Delaware.

The common stock is not redeemable, does not have any conversion rights and is not subject to call. If we are liquidated, dissolved or wound up, the holders of common stock will be entitled to a pro rata share in any distribution to stockholders, but only after satisfaction of all of our liabilities and of the prior rights of any outstanding shares of our preferred stock. Holders of shares of common stock have no preemptive rights to maintain their respective percentage of ownership in future offerings or sales of stock by us. All outstanding shares of our common stock are fully paid and nonassessable.

Preferred Stock

Under our Certificate of Incorporation, our Board of Directors by resolution may establish one or more additional series of preferred stock having such number of shares, designations, relative voting rights, dividend rates, redemption rights, liquidation rights, sinking fund provisions, conversion rights and other rights, preferences and limitations as may be fixed by the Board of Directors without any further stockholder approval. The issuance of preferred stock, while providing desired flexibility in connection with possible acquisition and other corporate purposes, could adversely affect the voting power of holders of our common stock. It could also affect the likelihood that holders of common stock will receive dividend payments and payments upon liquidation.

339,293 shares of our Convertible Preferred Stock were outstanding as of March 1, 2013, which currently do not pay a dividend.

4

TABLE OF CONTENTS

Authorized but Unissued Capital Stock

Delaware law does not require stockholder approval for any issuance of authorized shares. However, the listing requirements of the New York Stock Exchange, which would apply so long as the common stock remains listed on the New York Stock Exchange, require stockholder approval of certain issuances equal to or exceeding 20% of the then outstanding voting power or the then outstanding number of shares of common stock. These additional shares may be used for a variety of corporate purposes, including future public offerings to raise additional capital or to facilitate acquisitions.

One of the effects of the existence of unissued and unreserved common stock and preferred stock may be to enable our Board of Directors to issue shares to persons friendly to current management, which issuance could render more difficult or discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, and thereby protect the continuity of our management and possibly deprive the stockholders of opportunities to sell their shares of common stock at prices higher than prevailing market prices.

Delaware Business Combination Statute

We have expressly elected not to be subject to Section 203 of the General Corporation Law of the State of Delaware, which is described below. However, our stockholders can amend our Certificate of Incorporation and By-Laws to elect to be subject to Section 203. Section 203 provides that, subject to specified exceptions, an interested stockholder of a Delaware corporation is not permitted to engage in any business combination, including mergers or consolidations or acquisitions of additional shares of the corporation, with the corporation for a three-year period following the time that stockholder became an interested stockholder, unless one of the following conditions is met:

prior to the time the stockholder became an interested stockholder, the board of directors approved either the business combination or the transaction that resulted in the stockholder's becoming an interested stockholder, upon consummation of the transaction that resulted in the stockholder's becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, other than statutorily excluded shares, or on or subsequent to the time the stockholder became an interested stockholder, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Except as otherwise set forth in Section 203, interested stockholder means:

any person that is the owner of 15% or more of the outstanding voting stock of the corporation, or is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation at any time within three years immediately prior to the date of determination, and the affiliates and associates of any such person.

If we ever become subject to Section 203, it may be more difficult for a person who is an interested stockholder to effect various business combinations with us for the applicable three-year period. Section 203, if it becomes applicable, also may have the effect of preventing changes in our management. It is possible that Section 203, if it becomes applicable, could make it more difficult to accomplish transactions which our stockholders may otherwise deem to be in their best interests. The provisions of Section 203, if it becomes applicable, may cause persons interested in acquiring us to negotiate in advance with our board of directors. The restrictions on business combinations set forth in Section 203 are not applicable to the principal stockholder so long as the principal stockholder holds 15% or more of our outstanding shares of common stock. Because we are not currently subject to Section 203, the principal stockholder, as a controlling stockholder, may find it easier to sell its controlling interest to

Edgar Filing: NCI BUILDING SYSTEMS INC - Form 424B1
a third party because Section 203 would not apply to the third party.

5

TABLE OF CONTENTS

Our Certificate of Incorporation and By-Laws

Anti-Takeover Provisions. The provisions of our Certificate of Incorporation and By-Laws summarized in the succeeding paragraphs may be deemed to have an anti-takeover effect and may delay, defer or prevent a tender offer or takeover attempt that a stockholder might consider in such stockholder's best interest, including attempts that might result in a premium over the market price for the shares held by stockholders.

Our Certificate of Incorporation provides that:

the Board of Directors be divided into three classes that are elected for staggered three-year terms; stockholders may remove a director with or without cause, and only by the affirmative vote of the holder or holders of not less than 80% of our outstanding voting stock; meetings of stockholders can be called only by the Chief Executive Officer, a majority of the entire Board of Directors or by the Secretary of the corporation at the written request of the holder or holders of 25% of our outstanding voting stock.

To be amended, these provisions require the affirmative vote of the holder or holders of not less than 80% of our outstanding voting stock.

Under our Certificate of Incorporation, our Board of Directors by resolution may establish one or more additional series of preferred stock having such number of shares, designations, relative voting rights, dividend rates, liquidation and other rights, preferences and limitations as may be fixed by the Board of Directors without any further stockholder approval. Such rights, preferences, powers and limitations as may be established could have the effect of impeding or discouraging the acquisition of control of us.

Our Certificate of Incorporation contains a provision that allows the Board of Directors to evaluate factors other than the price offered when considering a proposed acquisition of us. The Certificate of Incorporation permits the Board of Directors to consider the social, legal and economic effects on our employees, suppliers, customers and the communities in which we operate. The Board of Directors can also consider any other factors it deems relevant, including not only the consideration offered in the proposed transaction relative to market price, but also our value in a freely negotiated transaction and in relation to the estimate by the Board of Directors of our future value as an independent entity. To be amended, this provision requires the affirmative vote of the holder or holders of not less than two-thirds of our outstanding voting stock.

Our By-Laws establish advance notice procedures with regard to the nomination, other than by or at the direction of the Board of Directors or a committee thereof, of candidates for election as directors and with regard to certain matters to be brought before an annual meeting of our stockholders. These procedures provide that the notice of proposed stockholder nominations for the election of directors must be timely given in writing to the Secretary of the Company prior to the meeting at which directors are to be elected. To be timely, notice must be received at our principal executive offices not less than 90 or more than 110 days before any annual meeting of stockholders. If, however, notice or prior public disclosure of an annual meeting is given or made less than 90 days before the date of the annual meeting, notice by the stockholder must be received no later than the 10th day following the date of mailing of the notice of the annual meeting or the date of public disclosure of the date of the annual meeting, whichever is earlier.

The procedures also provide that at an annual meeting, and subject to any other applicable requirements, only such business may be conducted as has been brought before the meeting by, or at the direction of, the Board of Directors or by a stockholder who has given timely prior written notice to the Secretary of the Company of such stockholder's intention to bring such business before the meeting. For such stockholder's notice to be timely, notice must also be

received not less than 90 or more than 110 days before any annual meeting of stockholders. If, however, notice or prior public disclosure of an annual meeting is given or made less than 90 days before the date of the annual meeting, notice by the stockholder must be received no later than the 10th day following the date of mailing of the notice of the annual meeting or the date of public disclosure of the date of the annual meeting, whichever is earlier. Such notice must contain certain information specified in the By-Laws. Our By-Laws can be amended by our stockholders only upon the affirmative vote of the holder or holders of not less than two-thirds of our outstanding voting stock.

6

TABLE OF CONTENTS

Liability of Directors; Indemnification. Our Certificate of Incorporation provides that a director will not be liable to us or our stockholders for acts or omissions as a director, except to the extent such exemption from liability or limitation thereof is not permitted under the Delaware statutory or decisional law. Our By-Laws provide that each current or former director, officer or employee of ours, or each such person who is or was serving or who had agreed to serve another corporation, trust or other enterprise in any capacity at our request, will be indemnified by us to the full extent permitted by law for liability arising from such service. Our By-Laws require us to advance expenses incurred in defending a civil or criminal action, suit or proceeding, so long as the person undertakes in writing to repay such amounts if it is ultimately determined that such person is not entitled to indemnification. In addition, our By-Laws authorize us to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of ours, or each such person who was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against and incurred by such person in any such capacity, or arising out of his status as such, whether or not we would have the power or the obligation to indemnify him against such liability.

Amendment. Our Certificate of Incorporation provides that the affirmative vote of the holder or holders of at least 80% of the voting power of the outstanding shares of voting stock, voting together as a single class, is required to amend provisions of the certificate of incorporation relating to stockholder action without a meeting; the number, election and term of our directors; and the removal of directors. Our Certificate of Incorporation further provides that our By-Laws may be amended by the Board or by the affirmative vote of the holder or holders of at least two thirds of the outstanding shares of voting stock, voting together as a single class.

Dividend Policy

We do not currently intend to pay dividends on our common stock in the foreseeable future and currently intend to retain any earnings for use in our business. Our board of directors will determine whether we will pay future dividends on our common stock. Any payment of cash dividends in the future will depend upon our financial condition, our capital requirements and earnings, any applicable contractual restrictions on our ability to pay dividends and such other factors our board may deem relevant. Our existing senior credit agreement limits our ability to pay dividends.

Stockholders Agreement and Registration Rights Agreement

For information regarding the stockholders agreement and registration rights agreement between us and the selling stockholders named herein, see Item 1. Business and Item 1A. Risk Factors of our Annual Report on Form 10-K for the fiscal year ended October 28, 2012, incorporated herein by reference.

Registrar and Transfer Agent

The registrar and transfer agent for our common stock is Computershare Investor Services.

Listing

Our common stock, including the common stock issuable upon the conversion of outstanding preferred stock, is listed on the New York Stock Exchange under the symbol NCS.

TABLE OF CONTENTS**SELLING STOCKHOLDERS**

The registration statement of which this prospectus forms a part has been filed in order to permit the selling stockholders to resell to the public shares of our common stock issuable to them upon conversion of our Convertible Preferred Stock, as well as any common stock that we may issue or may be issuable by reason of any stock split, stock dividend or similar transaction involving these shares. We and the selling stockholders are parties to a registration rights agreement, and under the terms of this agreement, we will pay all expenses of the registration of their shares of our common stock, including SEC filing fees, except that the selling stockholders will pay all underwriting discounts and selling commissions, if any.

The selling stockholders identified below may resell the common stock issuable to them upon conversion of our Convertible Preferred Stock that are the subject of this prospectus in the manner contemplated under the Plan of Distribution or as otherwise permitted by applicable law. The table below sets forth certain information known to us, based upon written representations from the selling stockholders, with respect to the beneficial ownership of the shares of our common stock held by the selling stockholders as of January 15, 2013. Because the selling stockholders may sell, transfer or otherwise dispose of all, some or none of the shares of our common stock covered by this prospectus, we cannot determine the number of such shares that will be sold, transferred or otherwise disposed of by the selling stockholders, or the amount or percentage of shares of our common stock that will be held by the selling stockholders upon termination of any particular offering. See Plan of Distribution. For the purposes of the table below, we assume that the selling stockholders will convert all of the shares of our Convertible Preferred Stock held by them into shares of our common stock, and will sell all of their shares of our common stock covered by this prospectus. When we refer to the selling stockholders in this prospectus, we mean the entities listed in the table below, as well as their pledgees, donees, assignees, transferees, and successors in interest.

In the table below, the percentage of shares beneficially owned is based on 74,836,021 shares of our common stock outstanding as of the date of this prospectus, taking into account the selling stockholders Preferred Shares on an as-converted basis. Beneficial ownership is determined under the rules of the SEC and generally includes voting or investment power with respect to securities. Unless indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares beneficially owned, subject to community property laws where applicable. Shares of our common stock subject to options that are currently exercisable or exercisable within 60 days of the date of this prospectus are deemed to be outstanding and to be beneficially owned by the person holding such options for the purpose of computing the percentage ownership of that person but are not treated as outstanding for the purpose of computing the percentage ownership of any other person.

Name of Beneficial Owner	Number	Percentage	Number of Shares Registered Hereby	Shares Beneficially Owned After Sale of All Shares Offered Hereby
				NumberPercentage
Clayton, Dubilier & Rice Fund VIII, L.P. ⁽¹⁾	54,001,629	72.2 %	54,001,629	
CD&R Friends & Family Fund VIII, L.P. ⁽¹⁾	135,189	.18 %	135,189	

Unless otherwise indicated, Clayton, Dubilier & Rice Fund VIII, L.P. and CD&R Friends & Family Fund VIII, L.P. are referred to collectively as the Investors. Does not include 33,593 shares of common stock issued to Clayton, Dubilier & Rice, LLC (CD&R, LLC), as assignee of director compensation payable to Messrs. James G. Berges, Nathan K. Sleeper and Jonathan L. Zrebiec. The Investors have the right to vote with the holders of common stock on an as-converted basis (without taking into account any limitations on convertibility that may then be applicable). At an initial conversion price of \$6.374, and after giving effect to accrued but unpaid cash and

(1) Convertible Preferred Stock dividends in the amount of \$5.8 million, the 339,293 shares of Convertible Preferred Stock held by the Investors are convertible into 54,136,818 shares of common stock, broken down as follows: (i) 54,001,629 shares of common stock into which 338,440 shares of Convertible Preferred Stock held by Clayton, Dubilier & Rice Fund VIII, L.P. are convertible; and (ii) 135,189 shares of common stock into which 853 shares of Convertible Preferred Stock held by CD&R Friends & Family Fund VIII, L.P. are convertible. The Investors hold approximately 72.4% of the voting power of NCI.

8

TABLE OF CONTENTS

The general partner of each of the Investors is CD&R Associates VIII, Ltd., whose sole stockholder is CD&R Associates VIII, L.P. The general partner of CD&R Associates VIII, L.P. is CD&R Investment Associates VIII, Ltd.

CD&R Investment Associates VIII, Ltd. is managed by a two-person board of directors, Donald J. Gogel and Kevin J.

Conway, who, as the directors of CD&R Investment Associates VIII, Ltd., may be deemed to share beneficial ownership of the shares of common stock and Convertible Preferred Stock shown as beneficially owned by the Investors. Such persons expressly disclaim such beneficial ownership. Investment and voting decisions with respect to shares held by each of the Investors are made by an investment committee of limited partners of CD&R Associates

VIII, L.P., currently consisting of more than ten individuals (the Investment Committee). All members of the Investment Committee disclaim beneficial ownership of the shares shown as beneficially owned by the Investors.

Each of CD&R Associates VIII, L.P., CD&R Associates VIII, Ltd. and CD&R Investment Associates VIII, Ltd. expressly disclaims beneficial ownership of the shares held by the Investors and by CD&R, LLC and of the stock options held by CD&R, LLC. The Investors expressly disclaim beneficial ownership of the shares held by CD&R, LLC and of the stock options held by CD&R, LLC. CD&R, LLC expressly disclaims beneficial ownership of the shares held by the Investors.

The address for the Investors, CD&R Associates VIII, L.P., CD&R Associates VIII, Ltd. and CD&R Investment Associates VIII, Ltd. is c/o Maples Corporate Services Limited, P.O. Box 309, Uglund House, South Church Street, George Town, Grand Cayman, KY1-1104, Cayman Islands, British West Indies. The address for CD&R, LLC is 375 Park Avenue, 18th Floor, New York, NY 10152.

PLAN OF DISTRIBUTION

General

The selling stockholders may sell the shares of our common stock covered by this prospectus, in accordance with the terms of the stockholders agreement and registration rights agreement, using one or more of the following methods:

underwriters in a public offering;

at the market to or through market makers or into an existing market for the securities;

ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

block trades in which a broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

privately negotiated transactions;

through the writing or settlement of standardized or over-the-counter options or other hedging or derivative transactions, whether through an options exchange or otherwise;

9

TABLE OF CONTENTS

by pledge to secure debts and other obligations;
in other ways not involving market makers or established trading markets, including direct sales to purchasers or sales effected through agents;

a combination of any such methods of sale; and
any other method permitted pursuant to applicable law.

To the extent required by law, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. Any prospectus supplement relating to a particular offering of our common stock by the selling stockholders may include the following information to the extent required by law:

the terms of the offering;
the names of any underwriters or agents, and the amount of securities underwritten or purchased by each of them;
the purchase price of the securities;
any delayed delivery arrangements;
any over-allotment options under which underwriters may purchase additional common stock from the selling stockholders;

any underwriting discounts and other items constituting underwriters' compensation;
any public offering price and the proceeds to the selling stockholders; and
any discounts or concessions allowed or reallocated or paid to dealers.

The selling stockholders may distribute the common stock from time to time in one or more transactions:

at a fixed price or prices, which may be changed from time to time;
at market prices prevailing at the time of sale;
at prices related to the prevailing market prices; or
at negotiated prices.

The selling stockholders may offer our common stock to the public through underwriting syndicates represented by managing underwriters or through underwriters without an underwriting syndicate. If underwriters are used for the sale of our common stock, the securities will be acquired by the underwriters for their own account. The underwriters may resell the common stock in one or more transactions, including in negotiated transactions at a fixed public offering price or at varying prices determined at the time of sale. In connection with any such underwritten sale of common stock, underwriters may receive compensation from the selling stockholders, for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters may sell common stock to or through dealers, and the dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Such compensation may be in excess of customary discounts, concessions or commissions.

If the selling stockholders use an underwriter or underwriters to effectuate the sale of common stock, we and/or they will execute an underwriting agreement with those underwriters at the time of sale of those securities. To the extent required by law, the names of the underwriters will be set forth in the prospectus supplement used by the underwriters to sell those securities. The selling stockholders may use underwriters with whom we or the selling stockholders have a material relationship. We will describe the nature of such relationship in the prospectus supplement, naming the underwriter. Unless otherwise indicated in the prospectus supplement relating to a particular offering of common stock, the obligations of the underwriters to purchase the securities will be subject to customary conditions precedent and the underwriters will be obligated to purchase all of the securities offered if any of the securities are purchased.

TABLE OF CONTENTS

In effecting sales, brokers or dealers engaged by the selling stockholders may arrange for other brokers or dealers to participate. Broker-dealers may receive discounts, concessions or commissions from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. Such compensation may be in excess of customary discounts, concessions or commissions. If dealers are utilized in the sale of securities, the names of the dealers and the terms of the transaction will be set forth in a prospectus supplement, if required.

The selling stockholders may also sell shares of our common stock from time to time through agents. We will name any agent involved in the offer or sale of such shares and will list commissions payable to these agents in a prospectus supplement, if required. These agents will be acting on a best efforts basis to solicit purchases for the period of their appointment, unless we state otherwise in any required prospectus supplement.

Each underwriter, dealer and agent participating in the distribution of any offered securities that are issuable in bearer form will agree that it will not offer, sell, resell or deliver, directly or indirectly, offered securities in bearer form in the United States or to United States persons except as otherwise permitted by Treasury Regulations Section 1.163-5(c)(2)(i)(D).

The selling stockholders may sell shares of our common stock directly to purchasers. In this case, they may not engage underwriters or agents in the offer and sale of such shares.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the selling stockholders' shares of common stock or interests therein may be underwriters within the meaning of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are underwriters within the meaning of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act. We will make copies of this prospectus available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act, if applicable. If any entity is deemed an underwriter or any amounts deemed underwriting discounts and commissions, the prospectus supplement will identify the underwriter or agent and describe the compensation received from the selling stockholders.

We are not aware of any plans, arrangements or understandings between any of the selling stockholders and any underwriter, broker-dealer or agent regarding the sale of any shares of our common stock by the selling stockholders. We cannot assure you that the selling stockholders will sell any or all of the shares of our common stock offered by them pursuant to this prospectus. In addition, we cannot assure you that the selling stockholders will not transfer, devise or gift the shares of our common stock by other means not described in this prospectus. Moreover, shares of common stock covered by this prospectus that qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than pursuant to this prospectus.

From time to time, one or more of the selling stockholders may pledge, hypothecate or grant a security interest in some or all of the shares owned by them. The pledgees, secured parties or persons to whom the shares have been hypothecated will, upon foreclosure, be deemed to be selling stockholders. The number of a selling stockholder's shares offered under this prospectus will decrease as and when it takes such actions. The plan of distribution for that selling stockholder's shares will otherwise remain unchanged.

A selling stockholder may enter into hedging transactions with broker-dealers and the broker-dealers may engage in short sales of the shares in the course of hedging the positions they assume with that selling stockholder, including, without limitation, in connection with distributions of the shares by those broker-dealers. A selling stockholder may enter into option or other transactions with broker-dealers that involve the delivery of the shares offered hereby to the

broker-dealers, who may then resell or otherwise transfer those securities.

A selling stockholder which is an entity may elect to make a pro rata in-kind distribution of the shares of common stock to its members, partners or shareholders. In such event we may file a prospectus supplement to the extent required by law in order to permit the distributees to use the prospectus to resell the common stock acquired in the distribution. A selling stockholder which is an individual may make gifts of shares of common stock covered hereby. Such donees may use the prospectus to resell the shares or, if required by law, we may file a prospectus supplement naming such donees.

TABLE OF CONTENTS

If more than 10% of the net proceeds of any offering of securities made under this prospectus will be received by members of the Financial Industry Regulatory Authority (FINRA) participating in the offering or affiliates or associated persons of such FINRA members, the offering will be conducted in accordance with FINRA Rule 5110(h).

The specific terms of the lock-up provisions, if any, in respect of any given offering will be described in the applicable prospectus supplement.

Indemnification

We and the selling stockholders may enter agreements under which underwriters, dealers and agents who participate in the distribution of our common stock may be entitled to indemnification by us and/or the selling stockholders against various liabilities, including liabilities under the Securities Act, and to contribution with respect to payments which the underwriters, dealers or agents may be required to make.

Price Stabilization and Short Positions

If underwriters or dealers are used in a sale of the common stock offered hereby, until the distribution of the securities is completed, rules of the SEC may limit the ability of any underwriters to bid for and purchase the securities. As an exception to these rules, representatives of any underwriters are permitted to engage in transactions that stabilize the price of the securities. These transactions may consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of the securities. If the underwriters create a short position in the securities in connection with the offering (that is, if they sell more securities than are set forth on the cover page of the prospectus supplement) the representatives of the underwriters may reduce that short position by purchasing securities in the open market.

We make no representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, we make no representation that the representatives of any underwriters will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports and other information with the SEC under the Securities Exchange Act of 1934 (Commission File No. 001-14315). You may read and copy any document we file with the SEC at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call 1-800-SEC-0330 for further information about the operation of the Public Reference Room. Materials also may be obtained from the SEC's website (<http://www.sec.gov>), which contains reports, proxy and information statements and other information regarding companies that file electronically with the SEC. Our filings are also available to the public at our website (<http://www.ncigroup.com>). The information on our website and any other website is not incorporated in this prospectus by reference, and you should not consider it a part of this prospectus. In addition, documents filed by us can be inspected at the offices of the New York Stock Exchange, Inc., 20 Broad Street, New York, New York 10005. You may also request a copy of our filings by contacting our Investor Relations Department at: (281) 897-7788 or by writing to us at 10943 North Sam Houston Parkway West, Houston, Texas 77064, Attention: Investor Relations.

The SEC allows us to incorporate by reference into this prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically

update and supersede this information. We incorporate by reference the documents listed below (File No. 001-14315) and any future filings we make with the SEC under section 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial Registration Statement and prior to the effectiveness of this Registration Statement; and (ii) until this offering is completed or otherwise terminated (other than information that is furnished and not deemed filed under the Exchange Act):

12

TABLE OF CONTENTS

our Annual Report on Form 10-K for the fiscal year ended October 28, 2012;
our Definitive Proxy Statement on Schedule 14A, filed January 28, 2013;
our Quarterly Report on Form 10-Q for the quarter ended January 27, 2013;
our Current Report on Form 8-K filed February 27, 2013; and

the description of our common stock contained in our Form 8-A/A, filed on June 25, 1999, and any subsequent amendment thereto filed for the purpose of updating such description.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any document incorporated by reference into this prospectus, other than exhibits to any such document not specifically described above. Requests for such documents should be directed to our Investor Relations Department at (281) 897-7788 or by writing to us at 10943 North Sam Houston Parkway West, Houston, Texas 77064, Attention: Investor Relations.

LEGAL MATTERS

The validity of the common stock offered in this prospectus will be passed upon by Debevoise & Plimpton LLP. If certain legal matters in connection with an offering of the securities made by this prospectus and a related prospectus supplement are passed on by counsel for the underwriters of such offering, that counsel will be named in the applicable prospectus supplement related to that offering.

EXPERTS

The consolidated financial statements of NCI Building Systems, Inc. appearing in NCI Building Systems, Inc.'s Annual Report on Form 10-K for the year ended October 28, 2012, and the effectiveness of NCI Building Systems, Inc.'s internal control over financial reporting as of October 28, 2012 (excluding the internal control over financial reporting of the acquired business of Metl-Span), have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, which as to the report on the effectiveness of NCI Building Systems, Inc.'s internal control over financial reporting contains an explanatory paragraph describing the above referenced exclusion of the acquired business of Metl-Span from the scope of such firm's audit of internal control over financial reporting, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

TABLE OF CONTENTS

8,500,000 Shares

NCI Building Systems, Inc.

Common Stock

P R O S P E C T U S S U P P L E M E N T

**Credit Suisse
Citigroup
RBC Capital Markets
UBS Investment Bank**

**BB&T Capital Markets
Stephens Inc.**

Sidoti & Company, LLC

January 9, 2014
