RICHARDSON ELECTRONICS LTD/DE
Form S-1
May 26, 2005
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AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON MAY 26, 2005

Registration Statement No. 333-

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM S-1

Registration Statement

Under

the Securities Act of 1933

RICHARDSON ELECTRONICS, LTD.

(Exact name of registrant as specified in its charter)

Delaware	**5065**	**36-2096643**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification Number)**

40W267 Keslinger Road

P.O. Box 393

LaFox, Illinois 60147-0393

(630) 208-2200

(Address, including zip code, and telephone number, including area code, of registrant s principal executive offices)

William G. Seils, Esq.

Senior Vice President, General Counsel & Secretary

Richardson Electronics, Ltd.

P.O. Box 393

LaFox, Illinois 60147-0393

(630) 208-2200

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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Approximate date of commencement of proposed sale to the public: As soon as possible after the effective date of this registration statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. x

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. ¨

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	**Amount to be Registered**	**Proposed maximum price per unit(1)**	**Proposed maximum aggregate offering price(1)(2)**	**Amount of registration fee**
7 3/4% Convertible Senior Subordinated Notes due 2011 (3)	$ 44,683,000	100%	$ 44,683,000	$ 5,259.20
Common Stock, $.05 par value	2,482,388(1)	(3)	(3)	(3)

(1) Estimated solely for purposes of calculating the registration fee in accordance with Rule 457 under the Securities Act of 1933 and based on 100% of the aggregate principal amount of the notes, exclusive of accrued interest and dividends, if any.
(2) Represents the aggregate initial offering price of all securities sold. Amounts represent United States Dollars or the equivalent thereof in foreign currencies.
(3) Reflects the maximum number of shares of common stock initially issuable upon conversion of the exchange notes being registered hereunder, subject to anti-dilution adjustments. No separate consideration will be received for the Common Stock issuable upon such conversion.

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in

accordance with Section 8(a) of the Securities Act of 1933 or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MAY 26, 2005

$44,683,000

7 3/4% Convertible Senior Subordinated Notes due 2011

This prospectus covers resales by holders of our 7 3/4% Convertible Senior Subordinated Notes due 2011 and shares of common stock into which the notes are convertible. We will not receive any proceeds from the resale of the notes or the shares of common stock hereunder. The notes are convertible, at holders option, prior to the maturity date into shares of our common stock.

The notes may be converted into shares of our common stock at an initial conversion price of $18.00 per share of common stock. The conversion price is subject to adjustment if certain events occur, as described in Description of the Notes. Upon conversion of a note, holders will receive only shares of our common stock and a cash payment to account for any fractional share. Holders will not receive any cash payment for interest accrued and unpaid to the conversion date except under the limited circumstances described below. At any time on or after December 19, 2006, we may elect to automatically convert the notes if the last reported sale price of our common stock has been at least 125% of the conversion price for at least 20 trading days during any 30 trading day period, subject to certain conditions.

The notes bear interest at 7 3/4% per year. Interest on the notes will accrue from February 15, 2005 or from the most recent date to which interest has been paid or duly provided for and will be payable semi-annually in arrears on June 15 and December 15 of each year, beginning on June 15, 2005. Interest will be computed on the basis of a 360-day year comprised of twelve 30-day months.

On or after December 19, 2006, but prior to December 19, 2007, we may redeem the notes, in whole or in part, at any time at a redemption price equal to 100% of the principal amount of the notes to be redeemed plus accrued and unpaid interest, if any, to, but excluding the date of redemption, provided that the closing price of our common stock has been at least 125% of the conversion price for 20 trading days during any 30 trading day period, subject to certain conditions. On or after December 19, 2007, we may redeem the notes, in whole or in part, at any time at a redemption price equal to 100% of the principal amount of the notes to be redeemed plus accrued and unpaid interest, if any, to, but excluding the date of redemption.

The notes mature on December 15, 2011 unless earlier converted, redeemed, or repurchased and will be issued in denominations of $1,000 and integral multiples thereof. The notes were initially issued in the aggregate principal amount of $44,683,000. The notes are subordinated to our senior indebtedness, including amounts borrowed under our credit agreement and future indebtedness that is not expressly subordinate to the notes. In addition, the notes are structurally subordinate to any indebtedness of our subsidiaries, including trade payables.

Prior to this offering, the notes were eligible for transfer on The Portal^{SM} Market of The Nasdaq Stock Market, Inc. The notes sold by means of this prospectus are not expected to remain eligible for transfer on The Portal^{SM} Market. We do not intend to list the notes for transfer on any national securities exchange or the Nasdaq National Market. Our common stock is listed on the Nasdaq National Market under the symbol RELL . On May 24, 2005, the last reported sale price of our common stock was $8.42 per share.

Investing in the notes and the underlying shares of common stock involves risks. Before purchasing notes, see the information under Risk Factors beginning on page 13 of this prospectus.

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 , 2005.

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You should rely only on the information contained in this prospectus. Neither we nor the holders have authorized anyone else to provide you with additional or different information. This prospectus is not an offer to sell or a solicitation of an offer to buy securities in any circumstances in which the offer or solicitation is unlawful. You should not interpret the delivery of this prospectus, or any sale of securities, as an indication that there has been no change in our affairs since the date of this prospectus. You should also be aware that information in this prospectus may change after this date.

When we use the terms we, us, our, or the Company in this prospectus, we mean Richardson Electronics, Ltd. and its subsidiaries, on a consolidated basis, unless we state or the context implies otherwise. When we use the term holders we mean the holders of our 7 3/4% Convertible Senior Subordinated Notes due December 15, 2011 offered for sale from time to time pursuant to this prospectus.

References in this prospectus to our common stock mean our common stock, \$.05 par value per share; references to our Class B common stock mean our Class B common stock, \$.05 par value per share; references to the notes mean our 7 3/4% Convertible Senior Subordinated Notes due 2011; references to the 7 1/4% debentures mean our 7 1/4% Convertible Subordinated Debentures due December 15, 2006; and references to the 8 1/4% debentures mean our 8 1/4% Convertible Senior Subordinated Debentures due June 15, 2006.

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PROSPECTUS SUMMARY

This summary highlights selected information from this prospectus and may not contain all of the information that is important to you. You should read carefully the entire prospectus, including the consolidated financial statements and related notes and other financial data, before making an investment decision.

Our Company

We are a global provider of engineered solutions and a distributor of electronic components to the radio frequency, or RF, and wireless communications, industrial power conversion, security, and display systems markets. We are committed to a strategy of providing specialized technical expertise and value-added products, which we refer to as engineered solutions, in response to our customers needs. We estimate that sales involving engineered solutions are in the range of approximately 50% of our total sales, consisting of:

- products which we manufacture or modify;
- products which are manufactured to our specifications by independent manufacturers under our own private labels; and
- value we add through design-in support, systems integration, prototype design and manufacturing, testing, and logistics for our customers end products. We define design-in support to be component modifications or the identification of lower-cost product alternatives or complementary products.

Our products include RF and microwave components, power semiconductors, electron tubes, microwave generators, data display monitors, and electronic security products and systems. These products are used to control, switch or amplify electrical power or signals, or as display, recording or alarm devices in a variety of industrial, communication, and security applications.

Our broad array of technical services and products supports both our customers and vendors.

Our Strategic Business Units

We serve our customers through four strategic business units, each of which is focused on different end markets with distinct product and application needs. Our four strategic business units are:

- RF and Wireless Communications Group;

Industrial Power Group;

Security Systems Division; and

Display Systems Group.

Each strategic business unit has dedicated marketing, sales, product management and purchasing functions to better serve its targeted markets. The strategic business units operate globally, serving North America, Europe, Asia/Pacific, and Latin America.

RF and Wireless Communications Group

Our RF and Wireless Communications Group serves the expanding global RF and wireless communications market, including infrastructure and wireless networks, as well as the fiber optics market. Our team of RF and wireless engineers assists customers in designing circuits, selecting cost effective components, planning reliable and timely supply, prototype testing, and assembly. The group offers our customers and vendors complete engineering and technical support from the design-in of RF and wireless components to the development of engineered solutions for their system requirements.

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We expect continued growth in wireless applications as the demand for all types of wireless communication increases worldwide. We believe wireless networking and infrastructure products for a number of niche applications will require engineered solutions using the latest RF technology and electronic components, including:

- automotive telematics, which is the use of computers and telecommunications to provide wireless voice and data applications in motor vehicles;
- RF identification, which is an electronic data collection and identification technology for a wide range of products to transfer data between a movable item and a reader to identify, track, or locate items; and
- wireless local area networks.

In addition to voice communication, we believe the rising demand for high-speed data transmission will result in major investments in both system upgrades and new systems to handle broader bandwidth.

Industrial Power Group

Our Industrial Power Group provides engineered solutions for customers in the steel, automotive, textile, plastics, semiconductor manufacturing, and transportation industries. Our team of engineers designs solutions for applications such as motor speed controls, industrial heating, laser technology, semiconductor manufacturing equipment, radar, and welding. We build on our expertise in power conversion technology to provide engineered solutions to fit our customers specifications using what we believe are the most competitive components from industry-leading vendors.

This group serves the industrial market s need for both vacuum tube and solid-state technologies. We provide replacement products for systems using electron tubes as well as design and assembly services for new systems employing power semiconductors. As electronic systems increase in functionality and become more complex, we believe the need for intelligent, efficient power management will continue to increase and drive power conversion demand growth.

Security Systems Division

Our Security Systems Division is a global provider of closed circuit television, fire, burglary, access control, sound, and communication products and accessories for the residential, commercial, and government markets. We specialize in closed circuit television design-in support, offering extensive expertise with applications requiring digital technology. Our products are primarily used for security and access control purposes but are also utilized in industrial applications, mobile video, and traffic management.

The security systems industry is rapidly transitioning from analog to digital imaging technology. We are positioned to take advantage of this transition through our array of innovative products and solutions marketed under our *National Electronics*, *Capture*®, *AudioTrak*, and *Elite National Electronics*® brands. We expect to gain additional market share by marketing ourselves as a value-added service provider and partnering with our other strategic business units to develop customized solutions as the transition to digital technology continues in the security industry.

Display Systems Group

Our Display Systems Group is a global provider of integrated display products and systems to the public information, financial, point-of-sale, and medical imaging markets. The group works with leading hardware vendors to offer the highest quality liquid crystal display, plasma, cathode ray tube, and customized display monitors. Our engineers design custom display solutions that include touch screens, protective panels, custom enclosures, specialized finishes, application specific software, and privately branded products.

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The medical imaging market is transitioning from film-based technology to digital technology. Our medical imaging hardware partnership program allows us to deliver integrated hardware and software solutions for this growing market by combining our hardware expertise in medical imaging engineered solutions with our software partners expertise in picture archiving and communications systems. Through such collaborative arrangements, we are able to provide integrated workstation systems to the end user.

Our legacy business of supplying replacement cathode ray tubes continues to be an important market. We believe we are successful in supplying replacement cathode ray tubes because of our extensive cross-reference capability. This database, coupled with custom mounting hardware installed by us, enables us to provide replacement tubes for more than 200,000 products.

We have long-standing relationships with key manufacturers including 3M, Clinton Electronics, IBM, Intel, NEC, Panasonic Industrial, Philips-FIMI, Planar Systems, Siemens Displays, and Samsung. We believe these relationships allow us to maintain a well-balanced and technologically advanced line of products.

We have design and integration operations in LaFox, Illinois, and Hudson, Massachusetts and stocking locations in LaFox, Hudson, and Lincoln, England.

The following is a description of our Display Systems Group s major product areas:

Cathode Ray Tubes vacuum tubes that convert an electrical signal into a visual image to display information on data display monitors, cathode ray tubes are used in various environments, including hospitals, financial institutions, airports, and numerous other applications wherever large user groups share electronic data visually. This product line includes both monochrome and color tubes.

Flat Panel Displays display monitors incorporating a liquid crystal or plasma panel, as an alternative to the traditional cathode ray tube technology, typically a few inches in depth and ranging from 10 to 52 measured diagonally. These displays are typically integrated with touchscreen technology or special mounting configurations based on the customer s requirements.

High Resolution Medical Displays an integral component of picture archiving and communications systems, displays are used in diagnostic and non-diagnostic imaging to display the digital image generated from computed tomography, magnetic resonance imaging, radiography, and other digital modalities.

Business Strategies

We are pursuing a number of strategies designed to enhance our business and, in particular, to increase sales of engineered solutions. Our strategies are to:

Capitalize on Engineering and Manufacturing Expertise. We believe that our success is largely attributable to our core engineering and manufacturing competency and skill in identifying cost-competitive solutions for our customers, and we believe that these factors will be significant to our future success. Historically, our primary business was the distribution and manufacture of electron tubes and we continue to be a major supplier of these products. This business enabled us to develop manufacturing and design engineering capabilities. Today, we use this expertise to identify engineered solutions for customers applications not only in electron tube technology but also in new and growing end markets and product applications. We work closely with our customers engineering departments which allows us to identify engineered solutions for a broad range of applications. We believe our customers use our engineering and manufacturing expertise as well as our in depth knowledge of the components best suited to deliver a solution that meets their performance needs cost-effectively.

Target Selected Niche Markets. We focus on selected niche markets that demand a high level of specialized technical service, where price is not the primary competitive factor. These niche markets include wireless infrastructure, high power/high frequency power conversion, custom display and digital imaging. In most cases, we do not compete against pure commodity distributors. We often function as an extension of our customers and vendors engineering teams. Frequently, our customers use our design and engineering expertise to provide a product solution that is not readily available from a traditional distributor. By utilizing our expertise, our customers and vendors can focus their engineering resources on more critical core design and development issues.

Focus on Growth Markets. We are focused on markets we believe have high growth potential and which can benefit from our engineering and manufacturing expertise and from our strong vendor relationships. These markets are characterized by substantial end-market growth and rapid technological change. For example, the continuing demand for wireless communications is driving wireless application growth. Power conversion demand continues to grow due to increasing system complexity and the need for intelligent, efficient power management. We also see growth opportunities as security systems transition from analog to digital video recording and medical display systems transition from film to digital imaging.

Leverage Our Existing Customer Base. An important part of our growth is derived from offering new products to our existing customer base. We support the migration of our Industrial Power Group customers from electron tubes to newer solid-state technologies. Sales of products other than electron tubes represented approximately 83% of our sales in fiscal 2004 compared to 76% in fiscal 2000. In addition, our salespeople increase sales by selling products from all strategic business units to customers who currently may only purchase from one strategic business unit and by selling engineered solutions to customers who currently may only purchase standard components.

Growth and Profitability Strategies

Our long-range growth plan is centered around three distinct strategies by which we are seeking to maximize our overall profitability:

Focus on Internal Growth. We believe that, in most circumstances, internal growth provides the best means of expanding our business, both on a geographic and product line basis. The recent economic downturn increased the trend to outsourcing engineering as companies focused on their own core competencies, which we believe contributed to the increased demand for our engineered solutions. As technologies change, we plan to continue to capitalize on our customers need for design engineering. We serve over 100,000 active customers worldwide. We consider active customers to be those customers to whom we have made a sale in the past seven years. We estimate seven years to be the lifecycle for several of our tube-based product lines. In fiscal 2004, we made sales to approximately 37,000 customers. We have developed internal systems to capture forecasted product demand by potential design opportunity. This allows us to anticipate our customers future requirements and identify new product opportunities. In addition, we share these future requirements with our manufacturing suppliers to help them predict near and long-term demand, technology trends and product life cycles.

Expansion of our product offerings is an ongoing program. In particular, the following areas have generated significant sales increases in recent years: RF amplifiers; interconnect and passive devices; silicon controlled rectifiers; custom and medical monitors; and digital closed circuit television security systems.

Reduce Operating Costs Through Continuous Operational Improvements. We constantly strive to reduce costs in our business through initiatives designed to improve our business processes. Recently, we have embarked on a vigorous program in an effort to improve operating efficiencies and asset utilization, with an emphasis on inventory control. Our incentive programs were revised in fiscal 2004 to heighten our managers commitment to these objectives. Our strategic business units goals are now based on return on assets. Additional programs are ongoing, including a significant investment in enterprise resource planning software which was implemented during this fiscal year.

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Grow Through Acquisitions. We have an established record of acquiring and integrating businesses. Since 1980, we have acquired 35 companies or significant product lines and continue to evaluate acquisition opportunities on an ongoing basis. We seek acquisitions that provide product line growth opportunities by permitting us to leverage our existing customer base, expand the geographic coverage for our existing product offerings, or add incremental engineering resources/expertise. Our most significant acquisitions over the past five years include:

TRL Engineering (amplifier pallet design and engineering now part of our RF and Wireless Communications Group) in 1999;

Pixelink (display systems integration now part of our Display Systems Group) in 1999;

Adler Video (security systems now part of our Security Systems Division) in 1999;

Celti (fiber optic communication now part of our RF and Wireless Communications Group) in 2001;

Aviv (design-in services for active and passive components now part of our RF and Wireless Communications Group) in 2001;

Sangus (RF and microwave applications now part of our RF and Wireless Communications Group) in 2002; and

Evergreen (power conversion now part of our Industrial Power Group) in 2004.

Recent Developments

Appointment of Chief Financial Officer

On April 4, 2005, we announced that Kelly Phillips had been elected Chief Financial Officer on an interim basis replacing Dario Sacomani who has taken a medical leave of absence. Ms. Phillips has been Controller since joining Richardson Electronics in 2003. Prior to joining Richardson Electronics, Ms. Phillips was Director of Accounting, Global Financial Shared Services for Motorola since 1998. Prior to that she was employed by Motorola as Controller, Cellular Infrastructure Group from 1996 to 1998 and held various financial positions with Motorola since 1985.

Termination of NASDAQ National Market Delisting Proceedings

On May 24, 2005, we received notice that the Nasdaq Listing Qualifications Panel has closed its proceedings to delist our common stock from the Nasdaq National Market. The delisting proceedings were initiated as a result of our inability to timely file our Form 10-Q for the quarter ended February 26, 2005. With the filing of our Form 10-Q/A on May 18, 2005, the Nasdaq Listing Qualifications Panel determined that we were in compliance with the Nasdaq National Market s continued listing requirements and that the delisting proceedings were no longer necessary. Effective with the opening of business on May 26, 2005, our stock resumed trading under the symbol RELL.

Restatement of Previously Reported Financial Statements

In connection with our independent registered public accounting firm s review of our Form 10-Q for the third quarter of fiscal 2005, an error was identified in the application of Statement of Financial Accounting Standards (SFAS) No. 52, Foreign Currency Translation, that related to foreign currency translation on intercompany indebtedness with our subsidiaries. The consolidated financial statements for fiscal 2002 and 2003, selected quarterly financial data for fiscal 2003 and 2004, and the condensed consolidated financial statements for the three- and six-month periods ended August 28, 2004 and November 27, 2004 have been restated to correct this error. See Notes B and P to our audited consolidated financial statements for the year ended May 29, 2004 and Note K to our unaudited condensed consolidated financial statements for the nine months ended February 26, 2005.

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Identification of Material Weaknesses in Internal Control over Financial Reporting

We maintain a set of disclosure controls and procedures (as defined in Rules 13a-15(e) and 15(d)-15(e) under the Securities Act of 1934, as amended (the Exchange Act)) designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms. Any controls and procedures, no matter how well designed and operated, can provide only a reasonable assurance of achieving the desired control objectives.

During the fiscal third quarter ended February 26, 2005, our independent registered public accounting firm, KPMG, LLP, reported to management and to the audit committee on certain matters involving internal controls that they considered to be material weaknesses. These internal controls related to (1) inappropriate application of certain provisions of SFAS No. 52, Foreign Currency Translation, affecting previously issued consolidated financial statements and (2) the origination and maintenance of contemporaneous documentation of the factual support or key judgments made in connection with the execution of several legal documents that represented important accounting events. The misapplication affected reported currency translation in previously issued consolidated financial statements for fiscal years 2002 and 2003, selected quarterly financial data for fiscal 2003 and 2004, and the condensed consolidated financial statements for the three- and six-month periods ended August 28, 2004 and November 27, 2004.

Also during the fiscal third quarter of fiscal 2005, our independent registered public accounting firm reported to management and to the audit committee on certain matters involving internal controls regarding income taxes that they considered to be material weaknesses, including (1) lack of appropriate quarterly analysis of the valuation of deferred tax assets in accordance with SFAS No. 109, Accounting for Income Taxes, (2) lack of consideration of Accounting Principles Board (APB) Opinion No. 23, Undistributed Earnings of Subsidiaries, and (3) lack of appropriate quarterly analysis of tax liabilities.

We have begun remediating these weaknesses, including implementing the following measures:

- We have engaged a third party to provide global tax compliance and reporting services, in order to improve the quarterly analysis of tax liabilities.
- We are reviewing and will update our policy regarding inter-company loan agreements, including the initiation, approval and maintenance of inter-company loans.
- We are reviewing and will update our policies and procedures surrounding the accounting for inter-company transactions to ensure compliance with SFAS 52.
- We have reviewed all inter-company loans to ensure loan documentation exists and supports the accounting treatment of the loans.
- We perform a monthly variance analysis of foreign currency activity as part of our standard operating procedures.

During fiscal 2005, we have made significant progress on remediating the six material weaknesses previously described in our Annual Report on Form 10-K/A for the year ended May 29, 2004, including implementation of the following measures:

We developed formal procedures for financial statement variance analysis and balance sheet reconciliations. The monthly closing schedule was formally communicated to all subsidiaries. The procedures were put in place during the second quarter of fiscal 2005 and are currently being tested as part of the Sarbanes-Oxley assessment process.

We improved documentation of management review and reconciliation performance through policies, education and re-enforcement, a balance sheet listing employees who are responsible for reconciling and approving the balance sheet accounts, and the implementation of Financial Services Manager, Accounting Manager, Corporate Controller and CFO checklists. These measures were put in place during the second and third quarters of fiscal 2005 and will be tested as part of the Sarbanes-Oxley assessment process for fiscal 2005.

Improvements to the reconciliation process during the migration from local accounting systems to PeopleSoft financials have been made and are expected to continue throughout fiscal 2005 in conjunction with our Sarbanes-Oxley compliance plan.

Our Information Systems group is in the process of installing several software packages which we believe will remediate the internal control issues regarding change management and system monitoring. These remediation efforts are expected to be completed before the end of fiscal 2005 in conjunction with our Sarbanes-Oxley compliance plan.

Upon completion of the annual audit, KPMG may identify additional deficiencies which, either individually or in the aggregate, constitute a material weakness. We are committed to maintaining effective internal control over financial reporting and will take steps to address promptly any material weaknesses that are identified. Over the last two years, we have instituted additional processes and procedures to improve our internal control over financial reporting.

See Risk Factors Risks Related to Our Business If we do not maintain effective internal control over financial reporting, we could be unable to provide timely and reliable financial information.

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The Offering

The summary below describes the principal terms of the notes. Certain of the terms and conditions described below are subject to important limitations and exceptions. The Description of the Notes section of this prospectus contains a more detailed description of the terms and conditions of the notes.

Issuer	Richardson Electronics, Ltd.
Securities Offered	$44,683,000 aggregate principal amount of 7 3/4% Convertible Senior Subordinated Notes due 2011.
Interest	We will pay interest at 7 3/4% per year. Interest on the notes will accrue from February 15, 2005 or from the most recent date to which interest has been paid or duly provided for and will be payable semi-annually in arrears on June 15 and December 15 of each year, beginning on June 15, 2005. Interest will be computed on the basis of a 360-day year comprised of twelve 30-day months.
Maturity Date	December 15, 2011.
Conversion	The notes are convertible at the holders option at any time prior to maturity into shares of our common stock, initially at a conversion price of $18.00 per share, subject to adjustment upon certain events.
Auto-Conversion	We may elect to automatically convert the notes at any time on or after December 19, 2006 and prior to maturity if the last reported sale price of the common stock has been at least 125% of the conversion price for at least 20 trading days during any 30 day trading period ending within five trading days prior to the date of the automatic conversion notice, provided that (x) this registration statement is effective and available for use from the date we notify holders of the automatic conversion through and including the earlier of the date of the automatic conversion or the last date on which the registration statement registering the resale of such common stock is required to be kept effective under the terms of the Registration Rights Agreement, or (y) the common stock issuable upon conversion may be sold pursuant to Rule 144 under the Securities Act.
Adjustments to the Conversion Price	The conversion price of the notes will be subject to adjustment under certain circumstances, including the payment of dividends on our common stock in cash in excess of $0.16 per share per year or in additional shares of common stock or other capital stock.
Optional Redemption	We may redeem some or all of the notes on or after December 19, 2006 and prior to December 19, 2007, at 100% of the principal amount, plus accrued and unpaid interest, to, but excluding, the applicable redemption date if the last reported sale price of the common stock has been at least 125% of the conversion price for at least 20 trading days during any 30 day trading period ending on the date of mailing the redemption notice. We may redeem some or all of the notes at any time on or after December 19, 2007 at 100% of the principal amount, plus accrued and unpaid interest to, but excluding, the applicable redemption date.

Repurchase at Holder s Option upon Certain Events	Upon a change of control, as defined in Description of the Notes Repurchase at Option of Holder, holders may require us to repurchase their notes in cash at a price equal to 101% of the principal amount plus accrued and unpaid interest to, but excluding, the applicable repurchase date. We may elect to pay the repurchase price in cash, shares of our common stock or any combination of cash and shares of our common stock.
Ranking	The notes are unsecured senior subordinated obligations and are subordinated in right of payment to any existing and future senior indebtedness and structurally subordinated to the indebtedness and other liabilities of our subsidiaries.
Trading	Currently, there is no public market for the notes, and we cannot assure you that any such market will develop. The notes will not be listed on any securities exchange or included in any automated quotation system. Our common stock is traded on the Nasdaq National Market under the symbol RELL .
Sinking Fund	None.
Use of Proceeds	The net proceeds from the sale of the notes or the shares of common stock covered by this prospectus will be received by the selling holders. We will not receive any of the proceeds from any sale by any selling holder of the notes or the shares of common stock covered by this prospectus.
Book-Entry Form	The notes were issued in book-entry form and are represented by permanent global certificates deposited with, or on behalf of, the Depository Trust Company, or DTC, and registered in the name of a nominee of DTC. Beneficial interests in any of the securities are shown on, and transfers are effected only through, records maintained by DTC or its nominee and any such interest may not be exchanged for certificated securities, except in limited circumstances. See Description of the Notes Book-Entry System.
Risk Factors	An investment in the notes involves a high degree of risk. See Risk Factors beginning on page 12 for a discussion of certain factors that you should consider when evaluating an investment in the notes and the underlying common stock.

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Summary Selected Consolidated Financial Information

The following table contains summary selected consolidated financial information as of and for the fiscal years ended June 1, 2002, May 31, 2003 and May 29, 2004 and as of and for the nine months ended February 28, 2004 and February 26, 2005. The summary selected consolidated financial information as of and for the fiscal years ended June 1, 2002, May 31, 2003 and May 29, 2004, are derived from our audited financial statements contained elsewhere in this prospectus. The summary selected consolidated financial data as of and for the nine months ended February 28, 2004 and February 26, 2005 are derived from our unaudited financial statements contained elsewhere in this prospectus and, in our opinion, reflect all adjustments, which are normal recurring adjustments, necessary for a fair presentation. Our results of operations for the nine months ended February 26, 2005 may not be indicative of the results that may be expected for the full year. The summary selected 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 notes to those consolidated financial statements contained elsewhere in this prospectus. Historical results are not necessarily indicative of results to be expected in the future.

	Fiscal Year Ended[1]			Nine Months Ended	
	June 1, 2002	May 31, 2003[2]	May 29, 2004[3]	February 28, 2004	February 26, 2005
	(In thousands, except per share amounts)			(Unaudited)	
Statement of Operations Data:					
Net sales	$ 443,492	$ 464,517	$ 520,069	$ 374,523	$ 431,421
Cost of products sold	349,326	365,427	392,117	283,102	327,271
Gross margin	94,166	99,090	127,952	91,421	104,150
Selling, general and administrative expenses	99,070	100,749	108,545	78,269	95,273
Other expense, net	12,695	9,700	10,837	8,165	3,748
Income (loss) before income taxes	(17,599)	(11,359)	8,570	4,987	5,129
Income tax provision (benefit)[4]	(6,268)	(2,370)	2,537	1,533	18,943
Income (loss) before cumulative effect of accounting change	(11,331)	(8,989)	6,033	3,454	(13,814)
Cumulative effect of accounting change, net of tax[5]		17,862			
Net income (loss)	$ (11,331)	$ (26,851)	$ 6,033	$ 3,454	$ (13,814)

		9,382		15,800			
Less: Net income (loss) attributable to noncontrolling interests	143		186		379		(1,769)
Net income attributable to Ferro Corporation common shareholders	$ 18,969	$	6,599	$	9,003	$	17,569
Earnings (loss) per share attributable to Ferro Corporation common shareholders:							
Basic earnings (loss):							
Continuing operations	$ 0.30	$	0.14	$	0.53	$	0.31

Discontinued operations		(0.07)		(0.06)		(0.42)		(0.11)
	$	0.23	$	0.08	$	0.11	$	0.20
Diluted earnings (loss):								
Continuing operations	$	0.29	$	0.14	$	0.53	$	0.31
Discontinued operations		(0.07)		(0.06)		(0.42)		(0.11)
	$	0.22	$	0.08	$	0.11	$	0.20

See accompanying notes to condensed consolidated financial statements.

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Ferro Corporation and Subsidiaries

Condensed Consolidated Statements of Comprehensive Income (Loss)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
	(Dollars in thousands)			
Net income	$ 19,112	$ 6,785	$ 9,382	$ 15,800
Other comprehensive income (loss), net of income tax:				
Foreign currency translation (loss) income	(3,269)	9,407	(4,947)	(28,389)
Postretirement benefit liabilities gain (loss)	27	(18)	295	(2)
Other comprehensive (loss) income, net of income tax	(3,242)	9,389	(4,652)	(28,391)
Total comprehensive income (loss)	15,870	16,174	4,730	(12,591)
Less: Comprehensive (loss) income attributable to noncontrolling interests	(9)	185	259	(2,908)
Comprehensive income (loss) attributable to Ferro Corporation	$ 15,879	$ 15,989	$ 4,471	$ (9,683)

See accompanying notes to condensed consolidated financial statements.

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Ferro Corporation and Subsidiaries

Condensed Consolidated Balance Sheets

	June 30, 2016	December 31, 2015
	(Dollars in thousands)	
ASSETS		
Current assets		
Cash and cash equivalents	$ 49,416	$ 58,380
Accounts receivable, net	278,931	231,970
Inventories	207,299	184,854
Deferred income taxes	—	12,088
Other receivables	32,008	34,088
Other current assets	15,479	15,695
Current assets held-for-sale	18,648	16,215
Total current assets	601,781	553,290
Other assets		
Property, plant and equipment, net	252,548	260,429
Goodwill	141,162	145,669
Intangible assets, net	110,493	106,633
Deferred income taxes	100,126	87,385
Other non-current assets	48,206	48,767
Non-current assets held-for-sale	370	23,178
Total assets	$ 1,254,686	$ 1,225,351
LIABILITIES AND EQUITY		
Current liabilities		
Loans payable and current portion of long-term debt	$ 10,451	$ 7,446
Accounts payable	129,946	120,380
Accrued payrolls	28,713	28,584
Accrued expenses and other current liabilities	60,525	54,664
Current liabilities held-for-sale	4,165	7,156
Total current liabilities	233,800	218,230
Other liabilities		
Long-term debt, less current portion	485,436	466,108
Postretirement and pension liabilities	147,820	148,249
Other non-current liabilities	65,080	66,990
Non-current liabilities held-for-sale	1,643	1,493
Total liabilities	933,779	901,070
Equity		
Ferro Corporation shareholders' equity:		
	93,436	93,436

Common stock, par value $1 per share; 300.0 million shares authorized; 93.4 million shares issued; 83.2 million and 84.0 million shares outstanding at June 30, 2016, and December 31, 2015, respectively		
Paid-in capital	307,059	314,854
Retained earnings	144,510	135,507
Accumulated other comprehensive loss	(65,850)	(61,318)
Common shares in treasury, at cost	(166,329)	(166,020)
Total Ferro Corporation shareholders’ equity	312,826	316,459
Noncontrolling interests	8,081	7,822
Total equity	320,907	324,281
Total liabilities and equity	$ 1,254,686	$ 1,225,351

See accompanying notes to condensed consolidated financial statements.

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Ferro Corporation and Subsidiaries

Condensed Consolidated Statements of Equity

	Ferro Corporation Shareholders Common Shares in Treasury Shares	Amount	Common Stock	Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive (Loss)	Non-controlling Interests	Total Equity
	(Dollars in thousands)							
Balances at December 31, 2014	6,445	$ (136,058)	$ 93,436	$ 317,404	$ 71,407	$ (21,805)	$ 11,632	$ 336,016
Net income (loss)	—	—	—	—	17,569	—	(1,769)	15,800
Other comprehensive (loss)	—	—	—	—	—	(27,252)	(1,139)	(28,391)
Stock-based compensation transactions	(280)	8,003	—	(3,310)	—	—	—	4,693
Balances at June 30, 2015	6,165	(128,055)	93,436	314,094	88,976	(49,057)	8,724	328,118
Balances at December 31, 2015	9,431	(166,020)	93,436	314,854	135,507	(61,318)	7,822	324,281
Net income	—	—	—	—	9,003	—	379	9,382
Other comprehensive (loss)	—	—	—	—	—	(4,532)	(120)	(4,652)
Purchase of treasury stock	1,175	(11,429)	—	—	—	—	—	(11,429)
Stock-based compensation transactions	(399)	11,120	—	(7,795)	—	—	—	3,325
Balances at June 30, 2016	10,207	$ (166,329)	$ 93,436	$ 307,059	$ 144,510	$ (65,850)	$ 8,081	$ 320,907

See accompanying notes to condensed consolidated financial statements.

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Ferro Corporation and Subsidiaries

Condensed Consolidated Statements of Cash Flows

	Six Months Ended June 30,	
	2016	2015
	(Dollars in thousands)	
Cash flows from operating activities		
Net cash (used in) provided by operating activities	$ (1,975)	$ 3,934
Cash flows from investing activities		
Capital expenditures for property, plant and equipment and other long lived assets	(14,044)	(26,554)
Proceeds from sale of assets	3,597	125
Business acquisitions, net of cash acquired	(6,639)	(5,479)
Net cash (used in) investing activities	(17,086)	(31,908)
Cash flows from financing activities		
Net borrowings (repayments) under loans payable	3,031	(931)
Proceeds from revolving credit facility	163,516	105,000
Principal payments on revolving credit facility	(92,706)	—
Principal payments on term loan facility	(51,500)	(1,500)
Payment of debt issuance costs	(301)	—
Purchase of treasury stock	(11,429)	—
Other financing activities	211	(181)
Net cash provided by financing activities	10,822	102,388
Effect of exchange rate changes on cash and cash equivalents	(725)	(3,501)
(Decrease) increase in cash and cash equivalents	(8,964)	70,913
Cash and cash equivalents at beginning of period	58,380	140,500
Cash and cash equivalents at end of period	$ 49,416	$ 211,413
Cash paid during the period for:		
Interest	$ 9,283	$ 7,045
Income taxes	$ 7,432	$ 9,482

See accompanying notes to condensed consolidated financial statements.

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Ferro Corporation and Subsidiaries

Notes to Condensed Consolidated Financial Statements

1. Basis of Presentation

The accompanying unaudited condensed consolidated financial statements of Ferro Corporation ("Ferro," "we," "us" or "the Company") have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") for interim financial information, the instructions to Form 10-Q, and Article 10 of Regulation S-X. These statements reflect all normal and recurring adjustments which are, in the opinion of management, necessary to present fairly the financial position, results of operations and cash flows for the periods presented. The preparation of financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. These interim condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and related notes included in our Annual Report on Form 10-K for the year ended December 31, 2015.

The Company owned 51% of an operating affiliate in Venezuela that was a consolidated subsidiary of Ferro. During the fourth quarter of 2015, we sold our interest in the operating affiliate in Venezuela for a cash purchase price of $0.5 million. During the first quarter of 2015, the Ministry of Economy, Finance, and Public Banking, and the Central Bank of Venezuela published a new exchange rate, the Foreign Exchange Marginal System ("SIMADI"). We concluded in March 2015 that SIMADI was the most relevant exchange mechanism available, and began using SIMADI to translate the local currency financial statements. As a result of the revaluation, we recognized a $1.9 million foreign currency loss and a $2.6 million loss due to lower of cost or market charges against our inventory, prior to the adjustment for losses allocated to our noncontrolling interest partner, which is recorded within Foreign currency losses, net and Cost of sales, respectively, within our condensed consolidated statement of operations for the six months ended June 30, 2015.

During the second quarter of 2014, substantially all of the assets and liabilities of the Europe-based Polymer Additives business were classified as held-for-sale. As further discussed in Note 3, we have classified the assets and liabilities as held-for-sale in the accompanying condensed consolidated balance sheets and have classified the related operating results, net of income tax, as discontinued operations in the accompanying condensed consolidated statements of operations for all periods presented.

Operating results for the three and six months ended June 30, 2016, are not necessarily indicative of the results expected in subsequent quarters or for the full year ending December 31, 2016.

2. Recent Accounting Pronouncements

Accounting Standards Adopted in the period ended June 30, 2016

In November 2015, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2015-17, Income Taxes: Topic 740: Balance Sheet Classification of Deferred Taxes. ASU 2015-17 requires deferred tax assets and liabilities to be classified as noncurrent in a classified statement of financial position. During the second quarter of 2016, we elected to prospectively adopt ASU 2015-17, thus reclassifying current deferred tax assets to noncurrent on the accompanying condensed consolidated balance sheets as of June 30, 2016. The prior reporting period was not retrospectively adjusted. Other than this reclassification, the adoption of ASU 2015-17 did not have an impact on the Company's condensed consolidated financial statements.

New Accounting Standards

In March 2016, the FASB issued ASU 2016-09, Compensation – Stock Compensation: Topic 718: Improvements to Employee Share-Based Payment Accounting. ASU 2016-09 is intended to simplify several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. This pronouncement is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. Early adoption is permitted. The Company is in the process of assessing the impact the adoption of this ASU will have on our condensed consolidated financial statements.

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In February 2016, the FASB issued ASU 2016-02, Leases: Topic 842. ASU 2016-02 requires companies to recognize a lease liability and asset on the balance sheet for operating leases with a term greater than one year. This pronouncement is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption is permitted. The Company is in the process of assessing the impact the adoption of this ASU will have on our condensed consolidated financial statements.

In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers: Topic 606. This ASU replaces nearly all existing U.S. GAAP guidance on revenue recognition. The standard prescribes a five-step model for recognizing revenue, the application of which will require significant judgment. This standard is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017. The Company is in the process of assessing the impact the adoption of this ASU will have on our condensed consolidated financial statements.

No other new accounting pronouncements issued or with effective dates during fiscal 2016 had or are expected to have a material impact of the Company's condensed consolidated financial statements.

3. Discontinued Operations

During the second quarter of 2014, we commenced a process to market for sale all of the assets within our Europe-based Polymer Additives business, including the Antwerp, Belgium dibenzoates manufacturing assets, and related Polymer Additives European headquarters and lab facilities. We determined that the criteria to classify these assets as held-for-sale under ASC Topic 360, Property, Plant and Equipment, have been met. We have classified the Europe-based Polymer Additives assets and liabilities as held-for-sale in the accompanying condensed consolidated balance sheets and have classified the related operating results, net of income tax, as discontinued operations in the accompanying condensed consolidated statements of operations for all periods presented. We expect resolution with respect to these assets during the third quarter, which could result in additional impairment charges and other related expenses of $25 million to $30 million. Additional impairment of the asset group's net working capital would be recognized upon disposition.

The table below summarizes results for the Europe-based Polymer Additives assets, for the three and six months ended June 30, 2016 and 2015, which are reflected in our condensed consolidated statements of operations as discontinued operations. Interest expense has been allocated to the discontinued operations based on the ratio of net assets of each business to consolidated net assets excluding debt.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
	(Dollars in thousands)			
Net sales	$ 6,900	$ 7,837	$ 14,650	$ 19,736
Cost of sales	10,789	11,903	22,819	26,458
Gross loss	(3,889)	(4,066)	(8,169)	(6,722)
Selling, general and administrative expenses	1,502	1,009	2,505	2,228
Restructuring and impairment charges	—	—	24,059	—
Interest expense	40	206	276	319
Miscellaneous expense (income)	30	365	(387)	333
(Loss) from discontinued operations before income taxes	(5,461)	(5,646)	(34,622)	(9,602)
Income tax expense	287	—	620	—
(Loss) from discontinued operations, net of income taxes	$ (5,748)	$ (5,646)	$ (35,242)	$ (9,602)

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The following table summarizes the assets and liabilities which are classified as held-for-sale at June 30, 2016, and December 31, 2015:

	June 30, 2016	December 31, 2015
	(Dollars in thousands)	
Accounts receivable, net	$ 3,857	$ 4,028
Inventories	11,066	9,733
Other current assets	3,725	2,454
Current assets held-for-sale	18,648	16,215
Property, plant and equipment, net	—	22,973
Other non-current assets	370	205
Total assets held-for-sale	$ 19,018	$ 39,393
Accounts payable	$ 3,514	$ 5,736
Accrued expenses and other current liabilities	651	1,420
Current liabilities held-for-sale	4,165	7,156
Other non-current liabilities	1,643	1,493
Total liabilities held-for-sale	$ 5,808	$ 8,649

Included within non-current assets are deferred tax assets of $37.8 million at June 30, 2016, and $25.0 million at December 31, 2015, which are fully reserved for at both periods.

4. Acquisitions

Pinturas

On June 1, 2016, the Company acquired 100% of the equity of privately held Pinturas Benicarló, S.L. ("Pinturas") for €16.2 million in cash (approximately $18.0 million). The information included herein has been prepared based on the preliminary allocation of the purchase price using estimates of the fair value and useful lives of the assets acquired and liabilities assumed, which were determined with the assistance of third parties who performed independent valuations using discounted cash flow and comparative market approaches and estimates made by management. As of June 30, 2016, the purchase price allocation is subject to further adjustment until all information is fully evaluated by the Company. The Company preliminarily recorded $8.5 million of amortizable intangible assets, $3.8 million of goodwill, $0.7 million of personal and real property, $2.6 million of a deferred tax liability related to the amortizable intangible assets, and $7.6 million of net working capital on the condensed consolidated balance sheet.

Ferer

On January 5, 2016, the Company completed the purchase of 100% of the equity of privately held Istanbul-based Ferer Dis Ticaret Ve Kimyasallar Anonim Sirketi A.S. (“Ferer”) on a cash-free and debt-free basis for approximately $9.4 million in cash, subject to customary working capital and other adjustments. The information included herein has been prepared based on the preliminary allocation of the purchase price using estimates of the fair value and useful lives of the assets acquired and liabilities assumed, which were determined with the assistance of third parties who performed independent valuations using discounted cash flow and comparative market approaches and estimates made by management. As of June 30, 2016, the purchase price allocation is subject to further adjustment until all information is fully evaluated by the Company. The Company preliminarily recorded $3.3 million of amortizable intangible assets, $4.5 million of goodwill, $0.6 million of personal and real property, $0.7 million of a deferred tax liability related to the amortizable intangible assets, and $1.7 million of net working capital on the condensed consolidated balance sheet.

Al Salomi

On November 17, 2015, the Company acquired 100% of the equity of Egypt-based tile coatings manufacturer Al Salomi for Frits and Glazes (“Al Salomi”) for EGP 307 million (approximately $38.2 million), including the assumption of debt. The acquired business

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contributed net sales of $6.4 million and $12.0 million for the three and six months ended June 30, 2016 and net income attributable to Ferro Corporation of $1.6 million and $2.2 million for the three and six months ended June 30, 2016.

The information included herein has been prepared based on the preliminary allocation of the purchase price using estimates of the fair value and useful lives of the assets acquired and liabilities assumed, which were determined with the assistance of third parties who performed independent valuations using discounted cash flow and comparative market approaches and estimates made by management. As of June 30, 2016, the purchase price allocation is subject to further adjustment until all information is fully evaluated by the Company. The Company preliminarily recorded $15.0 million of amortizable intangible assets, $14.3 million of goodwill, $10.7 million of personal and real property, $4.8 million of a deferred tax liability related to the amortizable intangible assets, and $3.0 million of net working capital on the condensed consolidated balance sheet.

Nubiola

On July 7, 2015, the Company acquired the entire share capital of Corporación Química Vhem, S.L., Dibon USA, LLC and Ivory Corporation, S.A. (together with their direct and indirect subsidiaries, “Nubiola”) on a cash-free and debt-free basis for €167 million (approximately $184.2 million). The acquisition was funded with excess cash and borrowings under the Company’s existing revolving credit facility. See Note 8 for additional detail on the revolving credit facility. During the second quarter of 2016, the Company had a purchase price adjustment due to the settlement of an escrow that reduced the fair value of net assets acquired to $168.1 million. As a result of the purchase price adjustment, the carrying amount of goodwill decreased by $11.7 million, intangibles decreased $6.4 million and the related deferred tax liability decreased $1.9 million. The impact of the change on the condensed consolidated statements of operations was not material. Nubiola is a worldwide producer of specialty inorganic pigments and the world’s largest producer of Ultramarine Blue. Nubiola also produces specialty Iron Oxides, Chrome Oxide Greens and Corrosion Inhibitors. Nubiola has production facilities in Spain, Colombia, Romania, and India and a joint venture in China.

The information included herein has been prepared based on the preliminary allocation of the purchase price using estimates of the fair value and useful lives of the assets acquired and liabilities assumed, which were determined with the assistance of third parties who performed independent valuations using discounted cash flow and comparative market approaches and estimates made by management. As of June 30, 2016, the purchase price allocation is subject to further adjustment until all information is fully evaluated by the Company.

The following table summarizes the preliminary purchase price allocations:

	June 30, 2016 (Dollars in thousands)
Net working capital (1)	$ 46,642
Cash and equivalents	19,966

Personal property		39,444
Real property		28,510
Intangible assets		26,757
Other assets and liabilities		(20,733)
Goodwill		27,498
Net assets acquired	$	168,084

(1) Net working capital is defined as current assets, less cash, less current liabilities, and includes an estimate of potential transactional adjustments.

The acquired business contributed net sales of $30.8 million and $64.2 million for the three and six months ended June 30, 2016 and net income attributable to Ferro Corporation of $9.0 million and $14.2 million for the three and six months ended June 30, 2016.

The estimated fair value of the receivables acquired is $24.5 million, with a gross contractual amount of $25.2 million. The Company preliminarily recorded acquired intangible assets subject to amortization of $21.1 million, which is comprised of $5.4 million of customer relationships and $15.7 million of technology/know-how, which will be amortized over 20 years and 15 years, respectively. The Company preliminarily recorded acquired indefinite-lived intangible assets of $5.6 million related to trade names and trademarks. Goodwill is calculated as the excess of the purchase price over the estimated fair values of the assets acquired and the

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liabilities assumed in the acquisition and is a result of anticipated synergies. Goodwill is not expected to be deductible for tax purposes.

The following unaudited pro froma information represents the consolidated results of the Company as if the Nubiola acquisition occurred as of January 1, 2014:

	Three months ended June 30, 2015	Six months ended June 30, 2015
	(unaudited)	
	(In thousands, except per share amounts)	
Net sales	$ 326,905	$ 622,727
Net income attributable to Ferro Corporation common shareholders	$ 14,666	$ 30,927
Net earnings per share attributable to Ferro Corporation common shareholders - Basic	$ 0.17	$ 0.35
Net earnings per share attributable to Ferro Corporation common shareholders - Diluted	$ 0.17	$ 0.35

The unaudited pro forma information has been adjusted with the respect to certain aspects of the acquisition to reflect the following:

- Additional depreciation and amortization expenses that would have been recognized assuming fair value adjustments to the existing Nubiola assets acquired, including intangible assets and fixed assets.
- Elimination of revenue and cost of goods sold for sales from Nubiola to the Company, which would be eliminated as intercompany transactions for Nubiola and the Company on a consolidated basis.
- Increased interest expense due to additional borrowings to fund the acquisition.
- Acquisition-related costs, which were included in the Company’s results.
- Adjustments for the income tax effect of the pro forma adjustments related to the acquisition.

Thermark

In February 2015, the Company acquired TherMark Holdings, Inc., a leader in laser marking technology, for a cash purchase price of $5.5 million. The Company recorded $4.6 million of amortizable intangible assets, $2.5 million of goodwill, $1.7 million of a deferred tax liability related to the amortizable intangible assets, and $0.1 million of net working capital on the condensed consolidated balance sheet.

5. Inventories

	June 30, 2016	December 31, 2015
	(Dollars in thousands)	
Raw materials	$ 62,518	$ 56,291
Work in process	34,890	33,099
Finished goods	109,891	95,464
Total inventories	$ 207,299	$ 184,854

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In the production of some of our products, we use precious metals, some of which we obtain from financial institutions under consignment agreements with terms of one year or less. The financial institutions retain ownership of the precious metals and charge us fees based on the amounts we consign. These fees were $0.2 million for the three months ended June 30, 2016 and 2015, and were $0.4 million for the six months ended June 30, 2016 and 2015. We had on-hand precious metals owned by participants in our precious metals consignment program of $26.6 million at June 30, 2016, and $20.5 million at December 31, 2015, measured at fair value based on market prices for identical assets and net of credits.

6. Property, Plant and Equipment

Property, plant and equipment is reported net of accumulated depreciation of $437.0 million at June 30, 2016, and $421.3 million at December 31, 2015. Unpaid capital expenditure liabilities, which are non-cash investing activities, were $2.1 million at June 30, 2016, and $3.8 million at June 30, 2015.

As discussed in Note 3 - Discontinued Operations, during the second quarter of 2014, our Europe-based Polymer Additives assets were classified as held-for-sale under ASC Topic 360, Property, Plant and Equipment. As such, at each reporting date, these assets are tested for impairment comparing the fair value of the assets less costs to sell to the carrying value. The fair value was determined using both the market approach and income approach, utilizing Level 3 measurements within the fair value hierarchy, which indicated the fair value less costs to sell was less than the carrying value during the first quarter of 2016, resulting in an impairment charge of $24.1 million during the six months ended June 30, 2016. The impairment charge of $24.1 million, representing the remaining carrying value of long-lived assets, is included in Loss from discontinued operations, net of income taxes in our condensed consolidated statements of operations for the six months ended June 30, 2016.

The following table presents information about the Company's impairment charges on assets that were measured on a fair value basis for the six months ended June 30, 2016, and for the year ended December 31, 2015. The table also indicates the level within the fair value hierarchy of the valuation techniques used by the Company to determine the fair value:

Description	Fair Value Measurements Using				Total
	Level 1	Level 2	Level 3	Total	(Losses)
	(Dollars in thousands)				
June 30, 2016					
Assets held for sale	$ —	$ —	$ 13,210	$ 13,210	$ (24,059)

December 31, 2015					
Assets held for sale	$ —	$ —	$ 33,711	$ 33,711	$ (11,792)

The inputs to the valuation techniques used to measure fair value are classified into the following categories:

Level 1: Quoted market prices in active markets for identical assets or liabilities.

Level 2: Observable market-based inputs or unobservable inputs that are corroborated by market data.

Level 3: Unobservable inputs that are not corroborated by market data.

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7. Goodwill and Other Intangible Assets

Details and activity in the Company's goodwill by segment follow:

	Performance Coatings	Pigments, Powders and Oxides		Performance Colors and Glass		Total
	(Dollars in thousands)					
December 31, 2015						
Gross goodwill	$ 88,753	$ 48,794		$ 53,391		$ 190,938
Accumulated impairment losses	(45,269)	—		—		(45,269)
	43,484	48,794		53,391		145,669
Acquisitions	—	(11,653)	(3)	8,286	(1), (2)	(3,367)
Foreign currency adjustments	(1,278)	179		(41)		(1,140)
June 30, 2016						
Gross goodwill	87,475	37,320		61,636		186,431
Accumulated impairment losses	(45,269)	—		—		(45,269)
	$ 42,206	$ 37,320		$ 61,636		$ 141,162

(1) During the first quarter of 2016, the Company recorded goodwill related to the Ferer acquisition. Refer to Note 4 for additional details.
(2) During the second quarter of 2016, the Company recorded goodwill related to the Pinturas acquisition. Refer to Note 4 for additional details.
(3) During the second quarter of 2016, the Company recorded a purchase price adjustment within the measurement period for goodwill related to the Nubiola acquisition. Refer to Note 4 for additional details.

Goodwill is calculated as the excess of the purchase price over the estimated fair values of the assets acquired and the liabilities assumed in the acquisition.

Goodwill is tested for impairment at the reporting unit level on an annual basis in the fourth quarter and between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value. As of June 30, 2016, the Company is not aware of any events or circumstances that occurred which would require a goodwill impairment test.

Amortizable intangible assets consisted of the following:

	June 30, 2016	December 31, 2015
	(Dollars in thousands)	

Gross amortizable intangible assets:		
Patents	$ 5,238	$ 5,229
Land rights	4,875	4,947
Technology/know-how and other	82,387	66,558
Customer relationships	51,842	46,320
Total gross amortizable intangible assets	144,342	123,054
Accumulated amortization:		
Patents	(4,986)	(4,880)
Land rights	(2,697)	(2,671)
Technology/know-how and other	(32,166)	(16,473)
Customer relationships	(3,480)	(2,234)
Total accumulated amortization	(43,329)	(26,258)
Amortizable intangible assets, net	$ 101,013	$ 96,796

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Indefinite-lived intangible assets consisted of the following:

	June 30, 2016	December 31, 2015
	(Dollars in thousands)	
Indefinite-lived intangibles assets:		
Trade names and trademarks	$ 9,480	$ 9,837

8. Debt

Loans payable and current portion of long-term debt consisted of the following:

	June 30, 2016	December 31, 2015
	(Dollars in thousands)	

Loans payable	$ 5,819	$ 2,749
Current portion of long-term debt	4,632	4,697
Loans payable and current portion of long-term debt	$ 10,451	$ 7,446

Long-term debt consisted of the following:

	June 30, 2016	December 31, 2015
	(Dollars in thousands)	
Term loan facility, net of unamortized issuance costs	$ 240,598	$ 291,717
Revolving credit facility	240,810	170,000
Capital lease obligations	3,945	4,478
Other notes	4,715	4,610
Total long-term debt	490,068	470,805
Current portion of long-term debt	(4,632)	(4,697)
Long-term debt, less current portion	$ 485,436	$ 466,108

Credit Facility

On July 31, 2014, the Company entered into a credit facility (the "Credit Facility") with a group of lenders to refinance the majority of its then outstanding debt. The Credit Facility consisted of a $200 million secured revolving line of credit with a term of five years and a $300 million secured term loan facility with a term of seven years. On January 25, 2016, the Company amended the Credit Facility by entering into the Incremental Assumption Agreement (the "Incremental Agreement") to increase the revolving line of credit commitment amount from $200 million to $300 million. The Company then used a portion of the increase in the revolving line of credit to repay $50 million of the term loan facility. The Credit Facility was amended and a portion of the outstanding term loans were repaid to increase the amount of total liquidity available under the Credit Facility and reduce the total cost of borrowings.

Principal payments on the term loan facility of $0.75 million quarterly, are payable commencing December 31, 2014, with the remaining balance due on the maturity date. At June 30, 2016, after taking into account all prior quarterly payments and the $50 million prepayment that was made in January 2016, the Company had borrowed $244.8 million under the term loan facility at an annual rate of 4.0%. There are no additional borrowings available under the term loan facility.

Subject to certain conditions, the Company can request up to $100 million of additional commitments under the Credit Facility, though the lenders are not required to provide such additional commitments. In addition, up to $100 million of the revolving line of credit will be available to certain of the Company's subsidiaries in the form of revolving loans denominated in Euros.

Certain of the Company's U.S. subsidiaries have guaranteed the Company's obligations under the Credit Facility and such obligations are secured by (a) substantially all of the personal property of the Company and the U.S. subsidiary guarantors and (b) a

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pledge of 100% of the stock of most of the Company's U.S. subsidiaries and 65% of most of the stock of the Company's first tier foreign subsidiaries.

Interest Rate – Term Loan: The interest rates applicable to the term loans will be, at the Company's option, equal to either a base rate or a London Interbank Offered Rate ("LIBOR") rate plus, in both cases, an applicable margin.

- The base rate will be the highest of (i) the federal funds rate plus 0.50%, (ii) syndication agent's prime rate or (iii) the daily LIBOR rate plus 1.00%.
- The applicable margin for base rate loans is 2.25%.
- The LIBOR rate will be set as quoted by Bloomberg and shall not be less than 0.75%.
- The applicable margin for LIBOR rate loans is 3.25%.
- For LIBOR rate loans, the Company may choose to set the duration on individual borrowings for periods of one, two, three or six months, with the interest rate based on the applicable LIBOR rate for the corresponding duration.

Interest Rate – Revolving Credit Line: The interest rates applicable to loans under the revolving credit line will be, at the Company's option, equal to either a base rate or a LIBOR rate plus an applicable variable margin. The variable margin will be based on the ratio of (a) the Company's total consolidated debt outstanding at such time to (b) the Company's consolidated EBITDA computed for the period of four consecutive fiscal quarters most recently ended.

- The base rate will be the highest of (i) the federal funds rate plus 0.50%, (ii) syndication agent's prime rate or (iii) the daily LIBOR rate plus 1.00%.
- The applicable margin for base rate loans will vary between 1.50% and 2.00%.
- The LIBOR rate will be set as quoted by Bloomberg for U.S. Dollars.
- The applicable margin for LIBOR Rate Loans will vary between 2.50% and 3.00%.
- For LIBOR rate loans, the Company may choose to set the duration on individual borrowings for periods of one, two, three or six months, with the interest rate based on the applicable LIBOR rate for the corresponding duration.

At June 30, 2016, the Company had borrowed $240.8 million under the revolving credit facilities at an annual weighted average interest rate of 3.6%. The borrowing on the revolving credit facilities was used to fund the acquisitions, the share repurchase programs, and for other general business purposes. After reductions for outstanding letters of credit secured by these facilities, we had $54.8 million of additional borrowings available under the revolving credit facilities at June 30, 2016.

The Credit Facility contains customary restrictive covenants including, but not limited to, limitations on use of loan proceeds, limitations on the Company's ability to pay dividends and repurchase stock, limitations on acquisitions and dispositions and limitations on certain types of investments. The Credit Facility also contains standard provisions relating to conditions of borrowing and customary events of default, including the non-payment of obligations by the Company and the bankruptcy of the Company.

Specific to the revolving credit facility, the Company is subject to financial covenants regarding the Company's outstanding net indebtedness and interest coverage ratios.

If an event of default occurs, all amounts outstanding under the Credit Facility may be accelerated and become immediately due and payable. At June 30, 2016, we were in compliance with the covenants of the Credit Facility.

Other Financing Arrangements

We maintain other lines of credit to provide global flexibility for our short-term liquidity requirements. These facilities are uncommitted lines for our international operations and totaled $7.6 million and $8.0 million at June 30, 2016, and December 31, 2015, respectively. The unused portions of these lines provided additional liquidity of $6.1 million at June 30, 2016, and $7.3 million at December 31, 2015.

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9. Financial Instruments

The following financial instrument assets (liabilities) are presented at their respective carrying amount, fair value and classification within the fair value hierarchy:

	June 30, 2016				
	Carrying Amount	Fair Value Total	Level 1	Level 2	Level 3
	(Dollars in thousands)				
Cash and cash equivalents	$ 49,416	$ 49,416	$ 49,416	$ —	$ —
Loans payable	(5,819)	(5,819)	—	(5,819)	—
Term loan facility(1)	(240,598)	(241,186)	—	(241,186)	—
Revolving credit facility	(240,810)	(238,355)	—	(238,355)	—
Other long-term notes payable	(4,715)	(4,046)	—	(4,046)	—
Foreign currency forward contracts, net	2,336	2,336	—	2,336	—

	December 31, 2015				
	Carrying Amount	Fair Value Total	Level 1	Level 2	Level 3
	(Dollars in thousands)				
Cash and cash equivalents	$ 58,380	$ 58,380	$ 58,380	$ —	$ —
Loans payable	(2,749)	(2,749)	—	(2,749)	—
Term loan facility(1)	(291,717)	(297,552)	—	(297,552)	—
Revolving credit facility	(170,000)	(169,019)	—	(169,019)	—
Other long-term notes payable	(4,610)	(3,956)	—	(3,956)	—
Foreign currency forward contracts, net	(1,207)	(1,207)	—	(1,207)	—

(1) The carrying value of the term loan facility is net of unamortized debt issuance costs.

The fair values of cash and cash equivalents are based on the fair values of identical assets. The fair values of loans payable are based on the present value of expected future cash flows and approximate their carrying amounts due to the short periods to maturity. The fair values of the term loan facility, the revolving credit facility and other long-term notes payable are based on the present value of expected future cash flows and interest rates that would be currently available to the Company for issuance of similar types of debt instruments with similar terms and remaining maturities adjusted for the Company's non-performance risk.

Foreign currency forward contracts. We manage foreign currency risks principally by entering into forward contracts to mitigate the impact of currency fluctuations on transactions. These forward contracts are not formally designated as hedges. Gains and losses on these foreign currency forward contracts are netted with gains and losses from currency fluctuations on transactions arising from international trade and reported as Foreign currency losses, net in the condensed consolidated statements of operations. We recognized net foreign currency losses of $0.4 million and $2.0 million in the three and six months ended June 30, 2016, respectively, and net foreign currency losses of $2.8 million and $4.6 million in the three and six months ended June 30, 2015, respectively, which is primarily comprised of the foreign exchange impact on transactions in countries where it is not economically feasible for us to enter into hedging arrangements and hedging inefficiencies, such as timing of transactions. We recognized net gains of $5.9 million and net losses of $4.7 million in the three and six months ended June 30, 2016, respectively, and net losses of $0.3 million and net gains of $1.3 million in the three and six months ended June 30, 2015, respectively, arising from the change in fair value of our financial instruments, which offset the related net gains and losses on international trade transactions. The fair values of these contracts are based on market prices for comparable contracts. The notional amount of foreign currency forward contracts was $278.0 million at June 30, 2016, and $338.4 million at December 31, 2015.

The following table presents the effect on our condensed consolidated statements of operations for the three and six months ended June 30, 2016 and 2015, respectively, of our foreign currency forward contracts:

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	Amount of Gain (Loss) Recognized in Earnings Three Months Ended June 30,		
	2016	2015	Location of Gain (Loss) in Earnings
	(Dollars in thousands)		
Foreign currency forward contracts	$ 5,884	$ (317)	Foreign currency losses, net

	Amount of (Loss) Gain Recognized in Earnings Six Months Ended June 30,		
	2016	2015	Location of (Loss) Gain in Earnings
	(Dollars in thousands)		
Foreign currency forward contracts	$ (4,684)	$ 1,328	Foreign currency losses, net

The following table presents the fair values on our condensed consolidated balance sheets of foreign currency forward contracts:

	June 30, 2016	December 31, 2015	Balance Sheet Location
	(Dollars in thousands)		
Asset derivatives:			
Foreign currency forward contracts	$ 2,722	$ 913	Other current assets
Liability derivatives:			
Foreign currency forward contracts	$ (386)	$ (2,120)	Accrued expenses and other current liabilities

10. Income Taxes

During the first half of 2016, income tax expense was $16.5 million, or 27.0% of pre-tax income. In the first half of 2015, income tax expense was $8.1 million, or 24.3% of pre-tax income. The tax expense in the first half of 2016 and 2015, as a percentage of pre-tax income, is lower than the U.S. federal statutory income tax rate of 35% primarily as a result of foreign statutory rate differences. The first half of 2015 tax expense was further lowered as a result of the amount of pre-tax losses in jurisdictions for which no tax benefit is recognized in proportion to the amount of pre-tax income in jurisdictions with no tax expense due to the utilization of fully valued tax attributes. Additionally, the first half of 2015 tax expense was benefited by certain discrete items, which had a favorable impact on the rate of approximately 5%, taking it from approximately 29.0% to 24.3%.

11. Contingent Liabilities

We have recorded environmental liabilities of $7.9 million at June 30, 2016, and $7.4 million at December 31, 2015, for costs associated with the remediation of certain of our properties that have been contaminated. The liability at June 30, 2016, and December 31, 2015, was primarily related to a non-operating facility in Brazil, and for retained environmental obligations related to a site in the United States that was part of the sale of our North American and Asian metal powders product lines in 2013. The costs include legal and consulting fees, site studies, the design and implementation of remediation plans, post-remediation monitoring and related activities. The ultimate liability could be affected by numerous uncertainties, including the extent of contamination found, the required period of monitoring and the ultimate cost of required remediation.

In the fourth quarter of 2013, the Supreme Court in Argentina ruled unfavorably related to certain export taxes associated with a divested operation. As a result of this ruling, we have recorded a $8.3 million and a $7.8 million liability at June 30, 2016, and December 31, 2015, respectively.

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There are various lawsuits and claims pending against the Company and its consolidated subsidiaries. We do not currently expect the resolution of these lawsuits and claims to materially affect the consolidated financial position, results of operations, or cash flows of the Company.

12. Retirement Benefits

Net periodic benefit (credit) cost of our U.S. pension plans (including our unfunded nonqualified plans), non-U.S. pension plans, and postretirement health care and life insurance benefit plans for the three months ended June 30, 2016 and 2015, respectively, follow:

	U.S. Pension Plans		Non-U.S. Pension Plans		Other Benefit Plans	
	Three Months Ended June 30,					
	2016	2015	2016	2015	2016	2015
	(Dollars in thousands)					
Service cost	$ 4	$ 5	$ 371	$ 383	$ —	$ —
Interest cost	3,937	4,697	954	915	236	242
Expected return on plan assets	(4,935)	(7,291)	(525)	(674)	—	—
Amortization of prior service cost	3	3	11	15	—	—
Net periodic benefit (credit) cost	$ (991)	$ (2,586)	$ 811	$ 639	$ 236	$ 242

Net periodic benefit (credit) cost for the six months ended June 30, 2016 and 2015, respectively, follow:

	U.S. Pension Plans		Non-U.S. Pension Plans		Other Benefit Plans	
	Six Months Ended June 30,					
	2016	2015	2016	2015	2016	2015
	(Dollars in thousands)					
Service cost	$ 9	$ 9	$ 734	$ 774	$ —	$ —
Interest cost	7,875	9,395	1,893	1,838	472	485

Expected return on plan assets	(9,870)	(14,583)	(1,045)	(1,349)	—	—
Amortization of prior service cost	6	6	22	30	—	—
Net periodic benefit (credit) cost	$ (1,980)	$ (5,173)	$ 1,604	$ 1,293	$ 472	$ 485

Net periodic benefit (credit) for our U.S. pension plans for the six months ended June 30, 2016 decreased from the prior year due to reduced plan assets as a result of executing our terminated-vested buyout program in the fourth quarter of 2015. Net periodic benefit cost for our non-U.S. pension plans and our postretirement health care and life insurance benefit plans did not change significantly compared with the prior-year same period.

In 2015, the Company initiated and executed on a buyout of terminated vested participants in our U.S defined benefit pension plan. In October 2015, the buyout was funded and reduced plan assets and liability by approximately $71 million.

13. Stock-Based Compensation

On May 22, 2013, our shareholders approved the 2013 Omnibus Incentive Plan (the "Plan"), which was adopted by the Board of Directors on February 22, 2013, subject to shareholder approval. The Plan's purpose is to promote the Company's long-term financial interests and growth by attracting, retaining and motivating high quality key employees and directors, motivating such employees and directors to achieve the Company's short- and long-range performance goals and objectives and thereby align their interests with those of the Company's shareholders. The Plan reserves 4,400,000 shares of common stock to be issued for grants of several different types of long-term incentives including stock options, stock appreciation rights, restricted shares, performance shares, other common stock based awards, and dividend equivalent rights.

In the first half of 2016, our Board of Directors granted 0.3 million stock options, 0.3 million performance share units and 0.3 million deferred stock units under the Plan.

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We estimate the fair value of each stock option on the date of grant using the Black-Scholes option pricing model. The following table details the weighted-average grant-date fair values and the assumptions used for estimating the fair values of stock option grants made during the six months ended June 30, 2016:

	Stock Options
Weighted-average grant-date fair value	$ 4.92
Expected life, in years	6.0
Risk-free interest rate	1.6 %
Expected volatility	53.6 %

The weighted average grant date fair value of our performance share units granted in the six months ended June 30, 2016, was $10.02. We measure the fair value of performance share units based on the closing market price of our common stock on the date of the grant. These shares are evaluated each reporting period for likelihood of achieving the performance criteria.

We measure the fair value of deferred stock units based on the closing market price of our common stock on the date of the grant, which is when the awards immediately vest. The weighted-average fair value per unit for grants made during the six months ended June 30, 2016, was $10.43.

We recognized stock-based compensation expense of $2.2 million for the six months ended June 30, 2016, and $8.0 million for the six months ended June 30, 2015. At June 30, 2016, unearned compensation cost related to the unvested portion of all stock-based awards was approximately $10.5 million and is expected to be recognized over the remaining vesting period of the respective grants, through the first quarter of 2019.

14. Restructuring and Cost Reduction Programs

In 2013, we initiated a Global Cost Reduction Program that was designed to address three key areas of the company - (1) business realignment, (2) operational efficiency and (3) corporate and back office functions. Business realignment was targeted at right-sizing our commercial management organizations globally. The operational efficiency component of the program was designed to improve the efficiency of our plant operations and supply chain. The corporate and back office initiative relates to work that we are doing with our strategic partners in the areas of finance and accounting and information technology outsourcing, and procurement. The restructuring charges for the three and six months ended June 30, 2016, primarily consists of implementing this strategy for our recently acquired acquisitions. The cumulative charges incurred to date associated with this Program are $51.3 million. Total costs related to the Program expected to be incurred, as of June 30, 2016, are approximately $51.3 million. Total restructuring charges were $0.8 million and $1.7 million for the three and six months ended June 30, 2016, respectively, and $1.1 million and $1.5 million for the three and six months ended June 30, 2015, respectively.

The activities and accruals related to our restructuring and cost reduction programs are summarized below:

	Employee Severance	Other Costs	Total
	(Dollars in thousands)		
Balances at December 31, 2015	$ 693	$ 2,077	$ 2,770
Restructuring charges	1,141	527	1,668
Cash payments	(1,144)	(932)	(2,076)
Non-cash items	19	36	55
Balances at June 30, 2016	$ 709	$ 1,708	$ 2,417

We expect to make cash payments to settle the remaining liability for employee termination benefits and other costs over the next twelve months, except where legal or contractual restrictions prevent us from doing so.

15. Earnings Per Share

Details of the calculation of basic and diluted earnings per share are shown below:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
	(Dollars in thousands, except per share amounts)			
Basic earnings per share computation:				
Net income attributable to Ferro Corporation common shareholders	$ 18,969	$ 6,599	$ 9,003	$ 17,569
Adjustment for loss from discontinued operations	5,748	5,646	35,242	9,602
Total	$ 24,717	$ 12,245	$ 44,245	$ 27,171
Weighted-average common shares outstanding	83,209	87,264	83,260	87,189
Basic earnings per share from continuing operations attributable to Ferro Corporation common shareholders	$ 0.30	$ 0.14	$ 0.53	$ 0.31
Diluted earnings per share computation:				
Net income attributable to Ferro Corporation common shareholders	$ 18,969	$ 6,599	$ 9,003	$ 17,569
Adjustment for loss from discontinued operations	5,748	5,646	35,242	9,602
Total	$ 24,717	$ 12,245	$ 44,245	$ 27,171
Weighted-average common shares outstanding	83,209	87,264	83,260	87,189
Assumed exercise of stock options	551	552	462	547
Assumed exercise of deferred stock unit conditions	80	108	—	87
Assumed satisfaction of restricted stock unit conditions	473	300	419	264
Assumed satisfaction of performance stock unit conditions	111	576	58	569
Weighted-average diluted shares outstanding	84,424	88,800	84,199	88,656
Diluted earnings per share from continuing operations attributable to Ferro Corporation common shareholders	$ 0.29	$ 0.14	$ 0.53	$ 0.31

The number of anti-dilutive or unearned shares was 2.5 million and 2.8 million for the three and six months ended June 30, 2016, respectively, and 2.0 million and 2.1 million for the three and six months ended June 30, 2015. These shares were excluded from the calculation of diluted earnings per share due to their anti-dilutive impact.

16. Share Repurchase Program

On July 29, 2015, the Company's Board of Directors approved a share repurchase program, under which the Company was authorized to repurchase up to $25 million of the Company's outstanding shares of Common Stock on the open market, including through a Rule 10b5-1 plan, or in privately negotiated transactions. On February 18, 2016, and

October 16, 2015, the Company’s Board of Directors approved follow-on share repurchase programs, authorizing the Company to repurchase an additional $25 million of the Company’s outstanding shares of common stock under each program.

The timing and amount of shares to be repurchased will be determined by the Company, based on evaluation of market and business conditions, share price, and other factors. The share repurchase programs do not obligate the Company to repurchase any dollar amount or number of common shares, and may be suspended or discontinued at any time.

For the six months ended June 30, 2016, the Company repurchased 1,175,437 shares of common stock at an average price of $9.72 per share for a total cost of $11.4 million. Under the total share repurchase programs, the Company repurchased 4,458,345 shares of common stock, at an average price of $11.21 per share, for a total cost of $50.0 million. As of June 30, 2016, $25.0 million may still be purchased under the programs.

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17. Accumulated Other Comprehensive Income (Loss)

Changes in accumulated other comprehensive income (loss) by component, net of tax, were as follows:

	Three Months Ended June 30,			
	Postretirement Benefit Liability Adjustments	Translation Adjustments	Other Adjustments	Total
	(Dollars in thousands)			
Balances at March 31, 2015	$ 904	$ (59,281)	$ (70)	$ (58,447)
Other comprehensive income (loss) before reclassifications	—	9,408	—	9,408
Amounts reclassified from accumulated other comprehensive (loss) income	(18)	—	—	(18)
Net current period other comprehensive (loss) income	(18)	9,408	—	9,390
Balances at June 30, 2015	$ 886	$ (49,873)	$ (70)	$ (49,057)
Balances at March 31, 2016	1,079	(63,769)	(70)	(62,760)
Other comprehensive income (loss) before reclassifications	—	(3,117)	—	(3,117)
Amounts reclassified from accumulated other comprehensive income (loss)	27	—	—	27
Net current period other comprehensive income (loss)	27	(3,117)	—	(3,090)
Balances at June 30, 2016	$ 1,106	$ (66,886)	$ (70)	$ (65,850)

	Six Months Ended June 30,			
	Postretirement Benefit Liability Adjustments	Translation Adjustments	Other Adjustments	Total
	(Dollars in thousands)			
Balances at December 31, 2014	$ 888	$ (22,623)	$ (70)	$ (21,805)
Other comprehensive income (loss) before reclassifications	—	(27,250)	—	(27,250)
Amounts reclassified from accumulated other comprehensive (loss) income	(2)	—	—	(2)
Net current period other comprehensive (loss) income	(2)	(27,250)	—	(27,252)
Balances at June 30, 2015	886	(49,873)	(70)	(49,057)

Balances at December 31, 2015	811	(62,059)	(70)	(61,318)
Other comprehensive income (loss) before reclassifications	—	(4,827)	—	(4,827)
Amounts reclassified from accumulated other comprehensive income (loss)	295	—	—	295
Net current period other comprehensive income (loss)	295	(4,827)	—	(4,532)
Balances at June 30, 2016	$ 1,106	$ (66,886)	$ (70)	$ (65,850)

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18. Reporting for Segments

Net sales to external customers by segment are presented in the table below. Sales between segments were not material.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
	(Dollars in thousands)			
Performance Coatings	$ 140,589	$ 139,460	$ 268,713	$ 276,246
Performance Colors and Glass	95,933	98,729	184,103	198,193
Pigments, Powders and Oxides	61,455	30,025	122,612	56,547
Total net sales	$ 297,977	$ 268,214	$ 575,428	$ 530,986

Each segment’s gross profit and reconciliations to income before income taxes are presented in the table below:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
	(Dollars in thousands)			
Performance Coatings	$ 39,234	$ 35,144	$ 71,349	$ 64,019
Performance Colors and Glass	36,705	33,389	68,543	67,878
Pigments, Powders and Oxides	22,404	9,292	42,690	17,146
Other cost of sales	30	(185)	20	(768)
Total gross profit	98,373	77,640	182,602	148,275
Selling, general and administrative expenses	57,871	52,695	110,517	102,151
Restructuring and impairment charges	787	1,116	1,668	1,625
Other expense, net	6,371	5,719	9,291	10,959
Income before income taxes	$ 33,344	$ 18,110	$ 61,126	$ 33,540

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Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview

Net sales for the three months ended June 30, 2016, increased by $29.8 million, or 11.1%, compared with the prior-year same period. The increase in net sales was primarily driven by sales from Nubiola of $30.8 million, which was acquired in the third quarter of 2015. During the three months ended June 30, 2016, gross profit increased $20.7 million, or 26.7%, compared with the prior-year same period; and, as a percentage of net sales, it increased approximately 410 basis points to 33.0%. The increase was driven by higher gross profit attributable to Pigments, Powders and Oxides, Performance Coatings, and Performance Colors and Glass of $13.1 million, $4.1 million and $3.3 million, respectively.

For the three months ended June 30, 2016, selling, general and administrative ("SG&A") expenses increased $5.2 million, or 9.8%, compared with the prior-year same period. The increase was primarily driven by higher SG&A expenses related to Nubiola of $2.9 million and an increase in pension and other postretirement benefits of $1.8 million which is a result of the effect of a lower expected return on plan assets in the current year as a result of executing our terminated-vested buyout program in the fourth quarter of 2015.

For the three months ended June 30, 2016, net income was $19.1 million, compared with net income of $6.8 million for the prior-year same period, and net income attributable to common shareholders was $19.0 million, compared with net income attributable to common shareholders of $6.6 million for the prior-year same period. Income from continuing operations was $24.9 million for the three months ended June 30, 2016, compared with income from continuing operations of $12.4 million for the three months ended June 30, 2015. Our total gross profit for the second quarter of 2016 was $98.4 million, compared with $77.6 million for the three months ended June 30, 2015.

Outlook

The Company delivered strong performance in the second quarter of 2016, despite challenging economic conditions in Latin America and Asia. Sales increased 11% due to recent acquisitions. In addition, gross profit, as a percentage of net sales, increased to 33.0% from 28.9%. Partially offsetting the higher gross profit were increased SG&A costs, primarily driven by recent acquisitions and a reduction in pension and postretirement benefits income. Our effective tax rate for the second quarter of 2016 was 25.4%, compared with 31.4% in the second quarter of 2015. We continue to expect the full year 2016 tax rate to be in the range of 27% - 28%.

For the remainder of 2016, we anticipate benefitting from strategic actions taken to improve growth in our core businesses and will continue to benefit from recent acquisitions. We expect tile sales, particularly in Asia, the Middle East and North Africa, and Southern Europe will continue to stabilize and rebound, providing growth. Certain economies where we, or our customers, participate, however, are expected to remain weak, including Argentina and Brazil. The net impact is expected to result in increased sales growth over the remainder of the year, before consideration of foreign currency impacts. Gross profit as a percentage of net sales is expected to be greater than 2015 levels due to strong volumes and a richer product mix.

We remain focused on the integration of Vetriceramici, Nubiola, Al Salomi, Ferer, and Pinturas and continue to work toward achieving the identified synergies. We will continue to focus on opportunities to optimize our cost structure and make our business processes and systems more efficient, and to leverage tax planning opportunities. We continue to expect cash flow from operating activities to be positive for the year, providing additional liquidity.

Further, we are continuing efforts to divest our Europe-based Polymer Additives assets, including the Antwerp, Belgium dibenzoates manufacturing assets, and related Polymer Additives European headquarters and lab facilities. The assets associated with this facility are currently classified as held-for-sale on our condensed consolidated balance sheets.

Factors that could adversely affect our future performance include those described under the heading “Risk Factors” in Item 1A of Part I of our Annual Report on Form 10-K for the year ended December 31, 2015.

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Results of Operations - Consolidated

Comparison of the three months ended June 30, 2016 and 2015

For the three months ended June 30, 2016, income from continuing operations was $24.9 million, compared with $12.4 million income from continuing operations for the three months ended June 30, 2015. Net income was $19.1 million, compared with net income of $6.8 million for the three months ended June 30, 2015. For the three months ended June 30, 2016, net income attributable to common shareholders was $19.0 million, or earnings per share of $0.23, compared with net income attributable to common shareholders of $6.6 million, or earnings per share of $0.08, for the three months ended June 30, 2015.

Net Sales

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Net sales	297,977	268,214	29,763	11.1 %
Cost of sales	199,604	190,574	9,030	4.7 %
Gross profit	$ 98,373	$ 77,640	$ 20,733	26.7 %
Gross profit as a % of net sales	33.0 %	28.9 %		

Net sales increased by $29.8 million, or 11.1%, in the three months ended June 30, 2016, compared with the prior-year same period, driven by higher sales in Pigments, Powders and Oxides and Performance Coatings of $31.4 million and $1.1 million, respectively, partially offset by lower sales in Performance Colors and Glass of $2.8 million. The increase in net sales was primarily driven by the sales from Nubiola of $30.8 million, which was acquired in the third quarter of 2015.

Gross Profit

Gross profit increased $20.7 million, or 26.7%, in the three months ended June 30, 2016, compared to the prior-year same period, and as a percentage of net sales, it increased 410 basis points to 33.0%. The increase was driven by an increase in gross profit attributable to Pigments, Powders and Oxides, Performance Coatings, and Performance Colors and Glass of $13.1 million, $4.1 million and $3.3 million, respectively. The increase in gross profit was primarily due to higher sales volumes and mix of $12.6 million, lower raw material costs of $7.9 million and lower manufacturing costs of $7.2 million, partially offset by unfavorable product pricing of $5.5 million and unfavorable foreign currency impacts of $1.7 million.

Geographic Revenues

The following table presents our sales on the basis of where sales originated.

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Geographic Revenues on a sales origination basis				
Europe	$ 138,888	$ 121,018	$ 17,870	14.8 %
United States	76,853	72,875	3,978	5.5 %
Asia Pacific	44,887	38,252	6,635	17.3 %
Latin America	37,349	36,069	1,280	3.5 %
Net sales	$ 297,977	$ 268,214	$ 29,763	11.1 %

The increase in net sales of $29.8 million, compared with the prior-year same period, was driven by an increase in sales across all regions. The increase in Europe was primarily attributable to sales from recent acquisitions, including Nubiola sales of $12.1 million, Al Salomi sales of $6.5 million, and Ferer sales of $1.6 million, partially offset by a decrease in electronic products sales of $4.3 million. The increase in sales in Asia Pacific was primarily attributable to Nubiola sales of $4.3 million, which was acquired in the third quarter of 2015 and an increase in sales in Performance Coatings of $1.8 million. The increase in sales in the United States was

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attributable to Nubiola sales of $8.2 million, partially offset by lower sales in Performance Colors and Glass of $5.5 million. The increase in sales in Latin America was attributable to Nubiola sales of $6.1 million, partially offset by lower sales in Performance Coatings of $4.3 million.

The following table presents our sales on the basis of where sold products were shipped.

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Geographic Revenues on a shipped-to basis				
Europe	$ 136,454	$ 119,032	$ 17,422	14.6 %
United States	60,590	52,422	8,168	15.6 %
Asia Pacific	60,152	55,274	4,878	8.8 %
Latin America	40,781	41,486	(705)	(1.7) %
Net sales	$ 297,977	$ 268,214	$ 29,763	11.1 %

Selling, General and Administrative Expenses

The following table includes significant components of SG&A and their respective changes between 2016 and 2015:

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Personnel expenses	$ 28,751	$ 27,832	$ 919	3.3 %
Incentive compensation	3,161	72	3,089	4,290.3 %
Stock-based compensation	2,211	5,866	(3,655)	(62.3) %
Pension and other postretirement benefits	104	(1,705)	1,809	(106.1) %
Bad debt	345	140	205	146.4 %

Business development	3,855	3,021	834	27.6	%
All other expenses	19,444	17,469	1,975	11.3	%
Selling, general and administrative expenses	$ 57,871	$ 52,695	$ 5,176	9.8	%

SG&A expenses were $5.2 million higher in the three months ended June 30, 2016, compared with the prior-year same period. Included in SG&A expenses were $2.9 million and $0.4 million of expenses attributable to Nubiola and Ferer, which were acquired in the third quarter of 2015 and the first quarter of 2016, respectively. The increase in incentive compensation expense of $3.1 million is a result of the Company's performance relative to targets for certain awards compared with the prior year. The increase in pension and other postretirement benefits of $1.8 million is a result of the effect of a lower expected return on plan assets in the current year as a result of executing our terminated-vested buyout program in the fourth quarter of 2015. These increases were partially mitigated by lower stock-based compensation expense of $3.7 million.

The following table presents SG&A expenses attributable to sales, research and development and operations costs as strategic services and other SG&A costs as functional services.

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	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Strategic services	$ 29,012	$ 26,261	$ 2,751	10.5 %
Functional services	23,487	20,496	2,991	14.6 %
Incentive compensation	3,161	72	3,089	4,290.3 %
Stock-based compensation	2,211	5,866	(3,655)	(62.3) %
Selling, general and administrative expenses	$ 57,871	$ 52,695	$ 5,176	9.8 %

SG&A expenses were $5.2 million higher in the three months ended June 30, 2016, compared with the prior-year same period. The increase in strategic and functional services was driven by an increase in expenses from recently acquired acquisitions of $2.5 million and $1.1 million, respectively. The increase in functional services was also driven by the increase in pension and other postretirement benefits of $1.8 million.

Restructuring and Impairment Charges

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Employee severance	$ 609	$ 1,019	$ (410)	(40.2)%
Other restructuring costs	178	97	81	83.5 %
Restructuring and impairment charges	$ 787	$ 1,116	$ (329)	(29.5)%

Restructuring and impairment charges decreased in the second quarter of 2016 compared with the prior-year same period. The decrease was primarily due to less costs associated with employee severance during the three months ended June 30, 2016, compared with the prior-year same period.

Interest Expense

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Interest expense	$ 5,118	$ 3,325	$ 1,793	53.9 %
Amortization of bank fees	329	289	40	13.8 %
Interest capitalization	(19)	(504)	485	(96.2) %
Interest expense	$ 5,428	$ 3,110	$ 2,318	74.5 %

Interest expense increased the second quarter of 2016 compared with the prior-year same period. The increase in interest expense was due to an increase in the average long-term debt balance during the three months ended June 30, 2016, compared with the prior-year same period, as well as less interest capitalization associated with long-term capital projects.

Income Tax Expense

During the second quarter of 2016, income tax expense was $8.5 million, or 25.4% of pre-tax income. In the second quarter of 2015, we recorded tax expense of $5.7 million, or 31.4% of pre-tax income. The tax expense in the second quarter of 2016 and 2015, as a percentage of pre-tax income, is lower than the U.S. federal statutory income tax rate of 35% primarily as a result of foreign statutory rate differences. Second quarter 2015 tax expense was further lowered as a result of pre-tax losses in jurisdictions for which no tax benefit was recognized net against the benefit of pre-tax income in jurisdictions with no tax expense due to the utilization of fully valued tax attributes.

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Results of Operations - Segment Information

Comparison of the three months ended June 30, 2016 and 2015

Performance Coatings

	Three Months Ended June 30,				Change due to			
						Volume /		
	2016	2015	$ Change	% Change	Price	Mix	Currency	Other
	(Dollars in thousands)							
Segment net sales	$ 140,589	$ 139,460	$ 1,129	0.8 %	$ (4,941)	$ 13,647	$ (7,577)	$ —
Segment gross profit	39,234	35,144	4,090	11.6 %	(4,941)	3,932	(1,621)	6,720
Gross profit as a % of segment net sales	27.9 %	25.2 %						

Net sales increased in Performance Coatings compared with the prior-year same period, driven by an increase in sales from Al Salomi of $6.5 million, which was acquired in the fourth quarter of 2015, $0.8 million in porcelain enamel, and $0.2 million in other tile products, partially offset by decrease of $4.0 million in frits and glazes, $1.1 million in digital inks, $0.7 million in color products, and $0.6 million due to the sale of our interest in an operating affiliate in Venezuela (“Venezuela”) in the fourth quarter of 2015. The increase in net sales was driven by increased sales volume and mix of $13.6 million, partially offset by unfavorable foreign currency impacts of $7.6 million and lower product pricing of $4.9 million. Gross profit increased $4.1 million from the prior-year same period, primarily driven by higher sales volumes and mix of $3.9 million, lower manufacturing costs of $3.9 million, and lower raw materials of $2.8 million, partially offset by unfavorable product pricing impacts of $4.9 million and unfavorable foreign currency impacts of $1.6 million.

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Segment net sales by Region				
Europe	$ 80,224	$ 76,395	$ 3,829	5.0 %

Latin America	26,165	31,036	(4,871)	(15.7)	%
Asia Pacific	22,502	20,751	1,751	8.4	%
United States	11,698	11,278	420	3.7	%
Total	$ 140,589	$ 139,460	$ 1,129	0.8	%

The net sales increase of $1.1 million was driven by increases in Europe, Asia Pacific and the United States, partially offset by a decrease in Latin America. The increase in sales in Europe was primary attributable to $6.5 million in sales from Al Salomi, which was acquired in the fourth quarter of 2015, partially offset by a decrease in sales in other tile product lines and color products of $1.3 million and $1.1 million, respectively. The sales increase in Asia Pacific was driven by higher sales in digital inks and frits and glazes of $1.0 million and $1.0 million, respectively, and the increase in sales in the United States was driven by higher sales in porcelain enamel of $0.4 million. The sales decrease in Latin America was primarily driven by lower sales in frits and glazes of $6.5 million, partially mitigated by increased sales in other tile product lines of $1.5 million.

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Performance Colors and Glass

	Three Months Ended June 30,				Change due to			
	2016	2015	$ Change	% Change	Price	Volume / Mix	Currency	Other
	(Dollars in thousands)							
Segment net sales	$ 95,933	$ 98,729	$ (2,796)	(2.8) %	$ (289)	$ (1,922)	$ (585)	$ —
Segment gross profit	36,705	33,389	3,316	9.9 %	(289)	(2,164)	(109)	5,878
Gross profit as a % of segment net sales	38.3 %	33.8 %						

Net sales decreased compared with the prior-year same period, primarily driven by lower sales of our electronics and decoration products of $4.2 million and $2.5 million, respectively, partially mitigated by higher sales of automotive products of $2.1 million and $1.2 million of sales attributable to Ferer, which was acquired in the first quarter of 2016. Net sales were impacted by unfavorable volume and mix of $1.9 million, unfavorable foreign currency impacts of $0.6 million, and lower product pricing of $0.3 million. Gross profit increased from the prior-year same period, primarily due to lower raw material costs of $3.6 million and favorable manufacturing costs of $2.2 million, partially offset by lower sales volumes and mix of $2.2 million, lower product pricing of $0.3 million and unfavorable foreign currency impacts of $0.1 million.

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Segment net sales by Region				
Europe	$ 41,960	$ 40,070	$ 1,890	4.7 %
United States	34,420	39,883	(5,463)	(13.7) %
Asia Pacific	14,750	14,123	627	4.4 %
Latin America	4,803	4,653	150	3.2 %
Total	$ 95,933	$ 98,729	$ (2,796)	(2.8) %

The net sales decline of $2.8 million was driven by lower sales in the United States, partially mitigated by increased sales in Europe, Asia Pacific and Latin America. The decrease in sales in the United States was attributable to lower sales in electronics and decoration products of $4.3 million and $1.2 million, respectively. The increase in Europe was primarily attributable to $1.2 million and $0.6 million in sales from Ferer and Pinturas, which were acquired in the first quarter of 2016 and the second quarter of 2016, respectively. The increases in Asia Pacific and Latin America were primarily due to higher sales of automotive products of $1.0 million and $0.2 million, respectively.

Pigments, Powders and Oxides

	Three Months Ended June 30,				Change due to			
	2016	2015	$ Change	% Change	Price	Volume / Mix	Currency	Other
	(Dollars in thousands)							
Segment net sales	$ 61,455	$ 30,025	$ 31,430	104.7 %	$ (288)	$ 31,762	$ (44)	$ —
Segment gross profit	22,404	9,292	13,112	141.1 %	(288)	10,785	(5)	2,620
Gross profit as a % of segment net sales	36.5 %	30.9 %						

Net sales increased compared with the prior-year same period, primarily due to sales from Nubiola of $30.8 million, which was acquired in the third quarter of 2015. Net sales were positively impacted by higher volumes and mix, excluding the increase from Nubiola, of $1.0 million, partially offset by lower product pricing of $0.3 million. Gross profit increased from the prior-year same

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period, primarily due to favorable sales volumes and mix of $10.8 million, favorable raw material costs of $1.5 million, and lower manufacturing costs of $1.1 million, partially offset by unfavorable product pricing of $0.3 million.

	Three Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Segment net sales by Region				
United States	$ 30,735	$ 21,714	$ 9,021	41.5 %
Europe	16,704	4,553	12,151	266.9 %
Asia Pacific	7,635	3,378	4,257	126.0 %
Latin America	6,381	380	6,001	1,579.2 %
Total	$ 61,455	$ 30,025	$ 31,430	104.7 %

Net sales increased $31.4 million, primarily driven by increased sales from Nubiola of $30.8 million, which was acquired in the third quarter of 2015, and contributed to the increased sales in all regions.

Comparison of the six months ended June 30, 2016 and 2015

For the six months ended June 30, 2016, income from continuing operations was $44.6 million, compared with $25.4 million income from continuing operations for the six months ended June 30, 2015. Net income was $9.4 million, which includes an impairment charge from discontinued operations of $24.1 million, for the six months ended June 30, 2016, compared with net income of $15.8 million for the six months ended June 30, 2015. For the six months ended months ended June 30, 2016, net income attributable to common shareholders was $9.0 million, or earnings per share of $0.11, compared with net income attributable to common shareholders of $17.6 million, or earnings per share of $0.20, for the six months ended June 30, 2015.

Net Sales

	Six Months Ended June 30,			
	2016	2015	$ Change	% Change

	(Dollars in thousands)			
Net sales	575,428	530,986	44,442	8.4 %
Cost of sales	392,826	382,711	10,115	2.6 %
Gross profit	$ 182,602	$ 148,275	$ 34,327	23.2 %
Gross profit as a % of net sales	31.7 %	27.9 %		

Net sales increased by $44.4 million, or 8.4%, in the six months ended June 30, 2016, compared with the prior-year same period driven by higher sales in Pigments, Powders and Oxides of $66.1 million, partially offset by lower sales in Performance Colors and Glass and Performance Coatings of $14.1 million and $7.5 million, respectively. The increase in net sales was primarily driven by the sales from Nubiola of $64.2 million, which was acquired in the third quarter of 2015, partially offset by a decrease in electronic and decoration products of $10.0 million and $7.0 million, respectively.

Gross Profit

Gross profit increased $34.3 million, or 23.2%, in the six months ended June 30, 2016, compared with the prior-year same period, and as a percentage of net sales, it increased 380 basis points to 31.7%. The increase in gross profit was driven by increases in Pigments, Powders and Oxides, Performance Coatings and Performance Colors and Glass of $25.5 million, $7.3 million and $0.7 million, respectively. The increase was primarily due to higher sales volumes and mix of $21.6 million, lower raw material costs of $14.6 million and lower manufacturing costs of $12.8 million, partially offset by unfavorable product pricing of $10.7 million and unfavorable foreign currency impacts of $4.9 million.

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Geographic Revenues

The following table presents our sales on the basis of where sales originated.

	Six Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Geographic Revenues on a sales origination basis				
Europe	$ 267,591	$ 236,854	$ 30,737	13.0 %
United States	147,023	141,686	5,337	3.8 %
Asia Pacific	87,824	77,189	10,635	13.8 %
Latin America	72,990	75,257	(2,267)	(3.0) %
Net sales	$ 575,428	$ 530,986	$ 44,442	8.4 %

The increase in net sales of $44.4 million, compared with the prior-year same period, was driven by increases in Europe, Asia Pacific and the United States of $30.7 million, $10.6 million and $5.3 million, respectively, partially offset by a decrease in Latin America of $2.3 million. The increases in Europe and Asia Pacific were primarily attributable to Nubiola sales of $25.0 million and $8.4 million, respectively, which was acquired in the third quarter of 2015. The increase in the United States was attributable to Nubiola sales of $17.0 million, partially offset by lower sales in Performance Colors and Glass of $12.4 million. The decrease in sales in Latin America was due to the sale of our interest in an operating affiliate in Venezuela in the fourth quarter of 2015, which accounted for $5.0 million of the decrease, partially offset by higher sales in Pigments, Powders and Oxides.

The following table presents our sales on the basis of where sold products were shipped.

	Six Months Ended June 30,		
	2016	2015	$ Change

				% Change
	(Dollars in thousands)			
Geographic Revenues on a shipped-to basis				
Europe	$ 264,790	$ 233,915	$ 30,875	13.2 %
United States	120,218	103,150	17,068	16.5 %
Asia Pacific	114,680	107,023	7,657	7.2 %
Latin America	75,740	86,898	(11,158)	(12.8)%
Net sales	$ 575,428	$ 530,986	$ 44,442	8.4 %

Selling, General and Administrative Expenses

The following table includes SG&A components with significant changes between 2016 and 2015:

	Six Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Personnel expenses	$ 59,580	$ 56,865	$ 2,715	4.8 %
Incentive compensation	5,146	1,724	3,422	198.5 %
Stock-based compensation	3,837	7,980	(4,143)	(51.9) %
Pension and other postretirement benefits	142	(3,394)	3,536	(104.2)%
Bad debt	223	(150)	373	(248.7)%
Business development	4,955	4,639	316	6.8 %
All other expenses	36,634	34,487	2,147	6.2 %
Selling, general and administrative expenses	$ 110,517	$ 102,151	$ 8,366	8.2 %

SG&A expenses were $8.4 million higher in the six months ended June 30, 2016, compared with the prior-year same period. Included in SG&A expenses were $6.4 million and $0.8 million of expenses attributable to Nubiola and Ferer, which were acquired in the third quarter of 2015 and the first quarter of 2016, respectively. The increase in incentive compensation expense of $3.4 million was a result of the Company's performance relative to targets for certain awards compared with the prior year. The increase in pension and other postretirement benefits of $3.5 million is a result of the effect of a lower expected return on plan assets in the current year as a result of executing our terminated-vested buyout program in the fourth quarter of 2015. These increases were offset by lower stock-based compensation expense of $4.1 million.

The following table presents SG&A expenses attributable to sales, research and development and operations costs as strategic services and other SG&A costs as functional services.

	Six Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Strategic services	$ 57,416	$ 51,982	$ 5,434	10.5 %
Functional services	44,118	40,465	3,653	9.0 %
Incentive compensation	5,146	1,724	3,422	198.5 %
Stock-based compensation	3,837	7,980	(4,143)	(51.9) %
Selling, general and administrative expenses	$ 110,517	$ 102,151	$ 8,366	8.2 %

SG&A expenses were $8.4 million higher in the six months ended June 30, 2016, compared with the prior-year same period. The increase in strategic and functional services was driven by an increase in expenses from recently acquired businesses of $5.2 million and $2.5 million, respectively.

Restructuring and Impairment Charges

Six Months Ended

	June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Employee severance	$ 1,141	$ 1,290	$ (149)	(11.6)%
Other restructuring costs	527	335	192	57.3 %
Restructuring and impairment charges	$ 1,668	$ 1,625	$ 43	2.6 %

Restructuring and impairment charges did not change significantly in the first six months of 2016 compared with the prior-year same period.

Interest Expense

	Six Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Interest expense	$ 9,662	$ 6,603	$ 3,059	46.3 %
Amortization of bank fees	644	586	58	9.9 %
Interest capitalization	(31)	(929)	898	(96.7)%
Interest expense	$ 10,275	$ 6,260	$ 4,015	64.1 %

Interest expense increased the first six months of 2016 due to an increase in the average long-term debt balance for the 2016 period, compared with the prior-year same period, as well as less interest capitalization associated with long-term capital projects.

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Income Tax Expense

During the first half of 2016, income tax expense was $16.5 million, or 27.0% of pre-tax income. In the first half of 2015, income tax expense was $8.1 million, or 24.3% of pre-tax income. The tax expense in the first half of 2016 and 2015, as a percentage of pre-tax income, is lower than the U.S. federal statutory income tax rate of 35% primarily as a result of foreign statutory rate differences. The first half of 2015 tax expense was further lowered as a result of the amount of pre-tax losses in jurisdictions for which no tax benefit is recognized in proportion to the amount of pre-tax income in jurisdictions with no tax expense due to the utilization of fully valued tax attributes. Additionally, the first half of 2015 tax expense was benefited by certain discrete items, which had a favorable impact on the rate of approximately 5%, taking it from approximately 29.0% to 24.3%.

Results of Operations - Segment Information

Comparison of the six months ended June 30, 2016 and 2015

Performance Coatings

	Six Months Ended June 30,				Change due to			
	2016	2015	$ Change	% Change	Price	Volume / Mix	Currency	Other
	(Dollars in thousands)							
Segment net sales	$ 268,713	$ 276,246	$ (7,533)	(2.7) %	$ (11,406)	$ 22,392	$ (18,519)	$ —
Segment gross profit	71,349	64,019	7,330	11.4 %	(11,406)	8,877	(3,732)	13,591
Gross profit as a % of segment net sales	26.6 %	23.2 %						

Net sales declined in Performance Coatings compared with the prior-year same period, primarily driven by a decrease in sales of $11.5 million in frits and glazes, $5.0 million due to the sale of Venezuela, which was sold in the fourth quarter of 2015, and $2.5 million in porcelain enamel, partially mitigated by $12.0 million in sales from Al Salomi, which was acquired in the fourth quarter of 2015. The decrease in net sales was driven by unfavorable foreign currency impacts of $18.5 million, lower product pricing of $11.4 million and unfavorable mix of $2.3 million, partially mitigated by increased sales volume of $24.7 million. Gross profit increased $7.3 million from the prior-year same period, primarily driven by lower manufacturing costs of $9.0 million, higher sales volumes and mix of $8.9 million, and lower raw materials costs of $4.6 million, partially offset by unfavorable product pricing impacts of $11.4 million and unfavorable foreign currency impacts of $3.7 million.

	Six Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Segment net sales by Region				
Europe	$ 152,251	$ 144,106	$ 8,145	5.7 %
Latin America	49,410	64,710	(15,300)	(23.6)%
Asia Pacific	44,069	43,666	403	0.9 %
United States	22,983	23,764	(781)	(3.3) %
Total	$ 268,713	$ 276,246	$ (7,533)	(2.7) %

The net sales decrease of $7.5 million was driven by declines in Latin America and the United States, partially mitigated by an increase in Europe and Asia Pacific. The sales decline in Latin America was primarily driven by lower sales from Venezuela of $5.0 million, which was sold in the fourth quarter of 2015, and lower sales in frits and glazes of $13.4 million, partially mitigated by increased sales in other tile products of $2.8 million. The sales decline in the United States was fully attributable to lower sales in porcelain enamel of $0.8 million. The increase in sales in Europe was primary attributable to $12.0 million in sales from Al Salomi, which was acquired in the fourth quarter of 2015, partially offset by decreased sales in digital inks of $3.0 million. The increase in

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Asia Pacific was primarily due to increased sales in digital inks and frits and glazes of $1.8 million and $0.5 million, partially offset by decreased sales in porcelain enamel of $1.9 million.

Performance Colors and Glass

	Six Months Ended June 30,				Change due to			
	2016	2015	$ Change	% Change	Price	Volume / Mix	Currency	Other
	(Dollars in thousands)							
Segment net sales	$ 184,103	$ 198,193	$ (14,090)	(7.1) %	$ 636	$ (11,373)	$ (3,353)	$ —
Segment gross profit	68,543	67,878	665	1.0 %	636	(8,654)	(1,043)	9,726
Gross profit as a % of segment net sales	37.2 %	34.2 %						

Net sales decreased compared with the prior-year same period, primarily driven by lower sales of our electronics, decoration and industrial products of $10.0 million, $7.0 million and $1.7 million, respectively, partially mitigated by increased sales attributable to Ferer of $2.8 million, which was acquired in the first quarter of 2016, and automobile products of $1.8 million. Net sales were impacted by unfavorable volume and mix of $11.4 million and unfavorable foreign currency impacts of $3.4 million, partially mitigated by higher product pricing of $0.6 million. Gross profit increased from the prior-year same period, primarily due to lower raw material costs of $7.3 million, lower manufacturing costs of $2.4 million and higher product pricing of $0.6 million, partially offset by lower sales volumes and mix of $8.7 million and unfavorable foreign currency impacts of $1.0 million.

	Six Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Segment net sales by Region				
Europe	$ 81,057	$ 83,517	$ (2,460)	(2.9) %
United States	64,909	77,331	(12,422)	(16.1) %

Asia Pacific	28,990	27,597	1,393	5.0	%
Latin America	9,147	9,748	(601)	(6.2)	%
Total	$ 184,103	$ 198,193	$ (14,090)	(7.1)	%

The net sales decline of $14.1 million was driven by lower sales in the United States, Europe, and Latin America, partially mitigated by increased sales in Asia Pacific. The decrease in sales in the United States was attributable to lower sales across all product lines, and the decline in sales in Europe and Latin America was primarily due to lower sales of decoration products of $4.2 million and $0.8 million, respectively. The decreased sales in Europe was partially mitigated by increased sales attributable to Ferer of $2.8 million, which was acquired in the first quarter of 2016. The increase in sales in Asia Pacific was primarily due to higher sales of automotive products of $1.9 million, partially offset by lower sales in industrial products of $0.4 million.

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Pigments, Powders and Oxides

	Six Months Ended June 30,				Change due to			
	2016	2015	$ Change	% Change	Price	Volume / Mix	Currency	Other
	(Dollars in thousands)							
Segment net sales	$ 122,612	$ 56,547	$ 66,065	116.8 %	$ 101	$ 66,355	$ (391)	$ —
Segment gross profit	42,690	17,146	25,544	149.0 %	101	21,406	(107)	4,144
Gross profit as a % of segment net sales	34.8 %	30.3 %						

Net sales increased compared with the prior-year same period, primarily due to higher sales from Nubiola of $64.2 million, which was acquired in the third quarter of 2015. Net sales were positively impacted by higher volumes and mix of $66.4 million and favorable product pricing of $0.1 million, partially offset by unfavorable foreign currency impacts of $0.4 million. Gross profit increased from the prior-year same period, primarily due to higher sales volumes and mix of $21.4 million, favorable raw material costs of $2.7 million, lower manufacturing costs of $1.4 million and favorable product pricing of $0.1 million, partially offset by unfavorable foreign currency impacts of $0.1 million.

	Six Months Ended June 30,			
	2016	2015	$ Change	% Change
	(Dollars in thousands)			
Segment net sales by Region				
United States	$ 59,131	$ 40,591	$ 18,540	45.7 %
Europe	34,283	9,231	25,052	271.4 %
Asia Pacific	14,765	5,926	8,839	149.2 %
Latin America	14,433	799	13,634	1,706.4 %
Total	$ 122,612	$ 56,547	$ 66,065	116.8 %

Net sales increased $66.1 million, primarily driven by increased sales from Nubiola of $64.2 million, which was acquired in the third quarter of 2015, and contributed to the increased sales in all regions.

Summary of Cash Flows for the six months ended June 2016 and 2015

	Six Months Ended June 30,		
	2016	2015	$ Change
	(Dollars in thousands)		
Net cash (used in) provided by operating activities	$ (1,975)	$ 3,934	$ (5,909)
Net cash (used in) investing activities	(17,086)	(31,908)	14,822
Net cash provided by financing activities	10,822	102,388	(91,566)
Effect of exchange rate changes on cash and cash equivalents	(725)	(3,501)	2,776
(Decrease) increase in cash and cash equivalents	$ (8,964)	$ 70,913	$ (79,877)

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Details of net cash provided by operating activities follows:

	Six Months Ended June 30,		
	2016	2015	$ Change
	(Dollars in thousands)		
Cash flows from operating activities:			
Net income	$ 9,382	$ 15,800	$ (6,418)
(Gain) loss on sale of assets and business	(3,774)	988	(4,762)
Depreciation and amortization	21,929	16,146	5,783
Interest amortization	644	586	58
Restructuring and impairment	23,651	(32)	23,683
Devaluation of Venezuela	—	3,343	(3,343)
Accounts receivable	(41,687)	(17,757)	(23,930)
Inventories	(17,695)	1,153	(18,848)
Accounts payable	3,226	(1,511)	4,737
Other current assets and liabilities, net	2,968	(20,786)	23,754
Other adjustments, net	(619)	6,004	(6,623)
Net cash (used in) provided by operating activities	$ (1,975)	$ 3,934	$ (5,909)

Cash flows from operating activities. Cash flows provided by operating activities decreased in the first six months of 2016 compared with the prior-year same period. The decrease was due to higher cash outflows for working capital of $38.0 million, partially mitigated by lower cash outflows for other assets and liabilities and higher earnings after consideration of non-cash items.

Cash flows from investing activities. Cash flows used in investing activities decreased $14.8 million in the first six months of 2016 compared with the prior-year same period. The decrease was primarily due to lower capital expenditures of $12.5 million and was driven by lower spend for the Antwerp, Belgium facility, which was substantially completed in the fourth quarter of 2015.

Cash flows from financing activities. Cash flows provided by financing activities decreased $91.6 million in the first six months of 2016 compared with the prior-year same period, driven by the $50.0 million prepayment on the term loan facility that was made in January 2016, a net borrowing decrease on the revolving credit facility of $34.2 million, and the purchase of treasury stock of $11.4 million.

Capital Resources and Liquidity

Credit Facility

On July 31, 2014, the Company entered into a credit facility (the “Credit Facility”) with a group of lenders to refinance the majority of its then outstanding debt. The Credit Facility consisted of a $200 million secured revolving line of credit with a term of five years and a $300 million secured term loan facility with a term of seven years. On January 25, 2016, the Company amended the Credit Facility by entering into the Incremental Assumption Agreement (the “Incremental Agreement”) to increase the revolving line of credit commitment amount from $200 million to $300 million. The Company then used a portion of the increase in the revolving line of credit to repay $50 million of the term loan facility. The Credit Facility was amended and a portion of the outstanding term loans were repaid to increase the amount of total liquidity available under the Credit Facility and reduce the total cost of borrowings.

Principal payments on the term loan facility of $0.75 million quarterly, are payable commencing December 31, 2014, with the remaining balance due on the maturity date. At June 30, 2016, the Company had borrowed $244.8 million under the term loan facility, taking into account all prior quarterly payments and the $50 million prepayment that was made in January 2016, at an annual rate of 4.0%. There are no additional borrowings available under the term loan facility.

Subject to certain conditions, the Company can request up to $100 million of additional commitments under the Credit Facility, though the lenders are not required to provide such additional commitments. In addition, up to $100 million of the revolving line of credit will be available to certain of the Company’s subsidiaries in the form of revolving loans denominated in Euros.

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Certain of the Company's U.S. subsidiaries have guaranteed the Company's obligations under the Credit Facility and such obligations are secured by (a) substantially all of the personal property of the Company and the U.S. subsidiary guarantors and (b) a pledge of 100% of the stock of most of the Company's U.S. subsidiaries and 65% of most of the stock of the Company's first tier foreign subsidiaries.

Interest Rate – Term Loan: The interest rates applicable to the term loans will be, at the Company's option, equal to either a base rate or a London Interbank Offered Rate ("LIBOR") rate plus, in both cases, an applicable margin.

- The base rate will be the highest of (i) the federal funds rate plus 0.50%, (ii) syndication agent's prime rate or (iii) the daily LIBOR rate plus 1.00%.
- The applicable margin for base rate loans is 2.25%.
- The LIBOR rate will be set as quoted by Bloomberg and shall not be less than 0.75%.
- The applicable margin for LIBOR rate loans is 3.25%.
- For LIBOR rate loans, the Company may choose to set the duration on individual borrowings for periods of one, two, three or six months, with the interest rate based on the applicable LIBOR rate for the corresponding duration.

Interest Rate – Revolving Credit Line: The interest rates applicable to loans under the revolving credit line will be, at the Company's option, equal to either a base rate or a LIBOR rate plus an applicable variable margin. The variable margin will be based on the ratio of (a) the Company's total consolidated debt outstanding at such time to (b) the Company's consolidated EBITDA computed for the period of four consecutive fiscal quarters most recently ended.

- The base rate will be the highest of (i) the federal funds rate plus 0.50%, (ii) syndication agent's prime rate or (iii) the daily LIBOR rate plus 1.00%.
- The applicable margin for base rate loans will vary between 1.50% and 2.00%.
- The LIBOR rate will be set as quoted by Bloomberg for U.S. Dollars.
- The applicable margin for LIBOR Rate Loans will vary between 2.50% and 3.00%.
- For LIBOR rate loans, the Company may choose to set the duration on individual borrowings for periods of one, two, three or six months, with the interest rate based on the applicable LIBOR rate for the corresponding duration.

At June 30, 2016, the Company had borrowed $240.8 million under the revolving credit facilities at an annual weighted average interest rate of 3.6%. The borrowing on the revolving credit facilities was used to fund the acquisitions, the share repurchase programs, and for other general business purposes. After reductions for outstanding letters of credit secured by these facilities, we had $54.8 million of additional borrowings available under the revolving credit facilities at at June 30, 2016.

The Credit Facility contains customary restrictive covenants including, but not limited to, limitations on use of loan proceeds, limitations on the Company's ability to pay dividends and repurchase stock, limitations on acquisitions and dispositions and limitations on certain types of investments. The Credit Facility also contains standard provisions relating to conditions of borrowing and customary events of default, including the non-payment of obligations by the Company and the bankruptcy of the Company.

Specific to the revolving credit facility, the Company is subject to financial covenants regarding the Company's outstanding net indebtedness and interest coverage ratios.

If an event of default occurs, all amounts outstanding under the Credit Facility may be accelerated and become immediately due and payable. At June 30, 2016, we were in compliance with the covenants of the Credit Facility.

Off Balance Sheet Arrangements

Consignment and Customer Arrangements for Precious Metals. We use precious metals, primarily silver, in the production of some of our products. We obtain most precious metals from financial institutions under consignment agreements (generally referred to as our precious metals consignment program). The financial institutions retain ownership of the precious metals and charge us fees based on the amounts we consign and the period of consignment. These fees were $0.2 million for the three months ended June 30, 2016 and 2015, and were $0.4 million for the six months ended June 30, 2016 and 2015. We had on hand precious metals owned by participants in our precious metals program of $26.6 million at June 30, 2016, and $20.5 million at December 31, 2015, measured at fair value based on market prices for identical assets and net of credits.

The consignment agreements under our precious metals program involve short-term commitments that typically mature within 30 to 90 days of each transaction and are typically renewed on an ongoing basis. As a result, the Company relies on the continued willingness of financial institutions to participate in these arrangements to maintain this source of liquidity. On occasion, we have been required to deliver cash collateral. While no deposits were outstanding at June 30, 2016, or December 31, 2015, we may be required to furnish cash collateral in the future based on the quantity and market value of the precious metals under consignment and the amount of collateral-free lines provided by the financial institutions. The amount of cash collateral required is subject to review by the financial institutions and can be changed at any time at their discretion, based in part on their assessment of our creditworthiness.

Bank Guarantees and Standby Letters of Credit.

At June 30, 2016, the Company and its subsidiaries had bank guarantees and standby letters of credit issued by financial institutions that totaled \$6.2 million. These agreements primarily relate to Ferro's insurance programs, foreign energy purchase contracts and foreign tax payments.

Other Financing Arrangements

We maintain other lines of credit to provide global flexibility for Ferro's short-term liquidity requirements. These facilities are uncommitted lines for our international operations and totaled \$7.6 million and \$8.0 million at June 30, 2016 and December 31, 2015, respectively. We had \$6.1 million and \$7.3 million of additional borrowings available under these lines at June 30, 2016 and December 31, 2015, respectively.

Liquidity Requirements

Our primary sources of liquidity are available cash and cash equivalents, available lines of credit under the revolving credit facility, and cash flows from operating activities. As of June 30, 2016 we had \$49.4 million of cash and cash equivalents. Substantially all of our cash and cash equivalents were held by foreign subsidiaries. Cash generated in the U.S. is generally used to pay down amounts outstanding under our revolving credit facility and for general corporate purposes, including acquisitions. If needed, we could repatriate the majority of cash held by foreign subsidiaries without the need to accrue and pay U.S. income taxes. We do not anticipate a liquidity need requiring such repatriation of these funds to the U.S.

Our liquidity requirements primarily include debt service, purchase commitments, labor costs, working capital requirements, restructuring expenditures, capital investments, precious metals cash collateral requirements, and postretirement obligations. In disposing of our Europe-based Polymer Additives business, we could be expected to incur cash charges of \$10 million to \$15 million. We expect to meet these requirements in the long term through cash provided by operating activities and availability under existing credit facilities or other financing arrangements. Cash flows from operating activities are primarily driven by earnings before non-cash charges and changes in working capital needs. We had additional borrowing capacity of \$61.0 million at June 30, 2016, and \$32.9 million at December 31, 2015, available under our various credit facilities, primarily our revolving credit facility.

Our revolving credit facility subjects us to customary financial covenants, including a leverage ratio and an interest coverage ratio. These covenants under our credit facility restrict the amount of our borrowings, reducing our flexibility to fund ongoing operations and strategic initiatives.

The most critical of these ratios is the leverage ratio for the revolving credit facility. As of June 30, 2016, we were in compliance with our maximum leverage ratio covenant of 3.75x as our actual ratio was 2.93x, providing \$36.9 million of EBITDA cushion on the leverage ratio, as defined within the Credit Facility. To the extent that economic conditions in key markets deteriorate or we are unable to meet our business projections and EBITDA falls below approximately $130 million for rolling four quarters, based on reasonably consistent debt levels with those as of December 31, 2015, we could become unable to maintain compliance with our leverage ratio covenant. In such case, our lenders could demand immediate payment of outstanding amounts and we would need to seek alternate financing sources to pay off such debts and to fund our ongoing operations. Such financing may not be available on favorable terms, if at all.

Difficulties experienced in global capital markets could affect the ability or willingness of counterparties to perform under our various lines of credit, forward contracts, and precious metals program. These counterparties are major, reputable, multinational institutions, all having investment-grade credit ratings, except for one, which is not rated. Accordingly, we do not anticipate

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counterparty default. However, an interruption in access to external financing could adversely affect our business prospects and financial condition.

We assess on an ongoing basis our portfolio of businesses, as well as our financial and capital structure, to ensure that we have sufficient capital and liquidity to meet our strategic objectives. As part of this process, from time to time we evaluate the possible divestiture of businesses that are not critical to our core strategic objectives and, where appropriate, pursue the sale of such businesses and assets. We also evaluate and pursue acquisition opportunities that we believe will enhance our strategic position. Generally, we publicly announce divestiture and acquisition transactions only when we have closed on those transactions.

Critical Accounting Policies and Their Application

There were no material changes to our critical accounting policies described in “Critical Accounting Policies” within Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2015.

Impact of Newly Issued Accounting Pronouncements

Refer to Note 2 to the condensed consolidated financial statements under Item 1 of this Quarterly Report on Form 10-Q for a discussion of accounting standards we recently adopted or will be required to adopt.

Risk Factors

Certain statements contained here and in future filings with the SEC reflect the Company’s expectations with respect to future performance and constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements are subject to a variety of uncertainties, unknown risks and other factors concerning the Company’s operations and business environment, which are difficult to predict and are beyond the control of the Company. Factors that could adversely affect our future financial performance include those described under the heading “Risk Factors” in Item 1A of Part I of our Annual Report on Form 10-K for the year ended December 31, 2015.

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Item 3. Quantitative and Qualitative Disclosures About Market Risk

The primary objective of the following information is to provide forward-looking quantitative and qualitative information about our exposure to instruments that are sensitive to fluctuations in interest rates, foreign currency exchange rates, and costs of raw materials and energy.

Our exposure to interest rate risk arises from our debt portfolio. We manage this risk by controlling the mix of fixed versus variable-rate debt after considering the interest rate environment and expected future cash flows. Our objective is to limit variability in earnings, cash flows and overall borrowing costs caused by changes in interest rates, while preserving operating flexibility.

We operate internationally and enter into transactions denominated in foreign currencies. These transactions expose us to gains and losses arising from exchange rate movements between the dates foreign currencies are recorded and the dates they are settled. We manage this risk by entering into forward currency contracts that substantially offset these gains and losses.

The notional amounts, carrying amounts of assets (liabilities), and fair values associated with our exposure to these market risks and sensitivity analysis about potential gains (losses) resulting from hypothetical changes in market rates are presented below:

	June 30, 2016	December 31, 2015
	(Dollars in thousands)	
Variable-rate debt:		
Carrying amount	$ 481,408	$ 461,717
Fair value	479,541	466,571
Change in annual interest expense from 1% change in interest rates	4,914	4,690
Fixed-rate debt:		
Carrying amount	4,715	4,610
Fair value	4,046	3,956
Change in fair value from 1% increase in interest rates	NM	NM
Change in fair value from 1% decrease in interest rates	NM	NM
Foreign currency forward contracts:		
Notional amount	278,015	338,418
Carrying amount and fair value	2,336	(1,207)
Change in fair value from 10% appreciation of U.S. dollar	11,313	19,814
Change in fair value from 10% depreciation of U.S. dollar	(13,827)	(24,217)

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Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Ferro is committed to maintaining disclosure controls and procedures that are designed to ensure that information required to be disclosed in its Exchange Act reports is recorded, processed, summarized, and reported within the time periods specified in the U.S. Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to its management, including its Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

As required by Rule 13a-15(b) of the Exchange Act, Ferro has carried out an evaluation, under the supervision and with the participation of its management, including its Chief Executive Officer and its Chief Financial Officer, of the effectiveness of the design and operation of its disclosure controls and procedures. The evaluation examined those disclosure controls and procedures as of June 30, 2016, the end of the period covered by this report. Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that the disclosure controls and procedures were effective as of June 30, 2016.

Changes in Internal Control over Financial Reporting

During the second quarter of 2016, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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PART II — OTHER INFORMATION

Item 1. Legal Proceedings

There are various lawsuits and claims pending against the Company and its consolidated subsidiaries. We do not currently expect the resolution of such matters to materially affect the consolidated financial position, results of operations, or cash flows of the Company.

Item 1A. Risk Factors

There were no material changes to the risk factors disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2015.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Our ability to pay common stock dividends is limited by certain covenants in our Credit Facility other than dividends payable solely in Capital Securities, as defined in the agreement.

The following table summarizes purchases of our common stock by the Company and affiliated purchasers during the three months ended June 30, 2016:

	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Amount that May Yet Be Purchased Under the Plans or Programs
	(Dollars in thousands, except for per share amounts)			
April 1, 2016 to April 30, 2016	—	$ —	—	$ 25,000,000
May 1, 2016 to May 31, 2016	—	$ —	—	$ 25,000,000
June 1, 2016 to June 30, 2016	—	$ —	—	$ 25,000,000
Total	—		—	

(1) On July 29, 2015, the Company's Board of Directors approved a stock repurchase program, authorizing the Company to repurchase up to $25 million of the Company's outstanding shares of common stock on the open market, including through a Rule 10b5-1 plan, or in privately negotiated transactions. On October 16, 2015, the

Company’s Board of Directors approved a follow-on share repurchase program for the repurchase of an additional $25 million of the Company’s outstanding shares of common stock on the open market, including through a Rule 10b5-1 plan, in privately negotiated transactions, or otherwise. On February 18, 2016, the Company’s Board of Directors approved an additional follow-on share repurchase program for the repurchase of an additional $25 million of the Company’s outstanding shares of common stock on the open market, including through a Rule 10b5-1 plan, in privately negotiated transactions, or otherwise.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Not applicable.

Item 6. Exhibits

The exhibits listed in the attached Exhibit Index are the exhibits required by Item 601 of Regulation S-K.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

FERRO CORPORATION

(Registrant)

Date: July 27, 2016

/s/ Peter T. Thomas
Peter T. Thomas
Chairman, President and Chief Executive Officer

(Principal Executive Officer)

Date: July 27, 2016

/s/ Jeffrey L. Rutherford
Jeffrey L. Rutherford
Vice President and Chief Financial Officer

(Principal Financial and Accounting Officer)

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EXHIBIT INDEX

The following exhibits are filed with this report or are incorporated here by reference to a prior filing in accordance with Rule 12b-32 under the Securities and Exchange Act of 1934.

Exhibit:

2 Plan of acquisition, reorganization, arrangement, liquidation or succession
2.1 Sale and Purchase Agreement, dated April 29, 2015, by and among Ferro Corporation, the sellers party thereto, Corporación Química Vhem, S.L. and Dibon USA, LLC. (incorporated by reference to Exhibit 2.1 to Ferro Corporation's Current Report on Form 8-K, filed July 9, 2015)**
2.2 Addendum to Sale and Purchase Agreement, dated July 7, 2015, by and among Ferro Corporation, Ferro Spain Management Company, S.L.U., the sellers party thereto, Corporación Química Vhem, S.L. and Dibon USA, LLC. (incorporated by reference to Exhibit 2.2 to Ferro Corporation's Current Report on Form 8-K, filed July 9, 2015)**
3 Articles of incorporation and by-laws:
3.1 Eleventh Amended Articles of Incorporation of Ferro Corporation (incorporated by reference to Exhibit 4.1 to Ferro Corporation's Registration Statement on Form S 3, filed March 5, 2008).
3.2 Certificate of Amendment to the Eleventh Amended Articles of Incorporation of Ferro Corporation filed December 29, 1994 (incorporated by reference to Exhibit 4.2 to Ferro Corporation's Registration Statement on Form S 3, filed March 5, 2008).
3.3 Certificate of Amendment to the Eleventh Amended Articles of Incorporation of Ferro Corporation filed on June 23, 1998 (incorporated by reference to Exhibit 4.3 to Ferro Corporation's Registration Statement on Form S 3, filed March 5, 2008).
3.4 Certificate of Amendment to the Eleventh Amended Articles of Incorporation of Ferro Corporation filed on October 14, 2011 (incorporated by reference to Exhibit 3.1 to Ferro Corporation's Current Report on Form 8-K, filed October 17, 2011).
3.5 Certificate of Amendment to the Eleventh Amended Articles of Incorporation of Ferro Corporation filed on April 25, 2014 (incorporated by reference to Exhibit 3.5 to Ferro's Quarterly Report on Form 10-Q, for the quarter ended June 30, 2014).
3.6 Ferro Corporation Amended and Restated Code of Regulations (incorporated by reference to Exhibit 3.1 to Ferro Corporation's current Report on Form 8-K filed April 28, 2015.)
4 Instruments defining rights of security holders, including indentures:
4.1 Senior Indenture, dated as of March 5, 2008, by and between Ferro Corporation and U.S. Bank National Association (incorporated by reference to Exhibit 4.5 to Ferro Corporation's Registration Statement on Form S 3, filed March 5, 2008).
4.2 First Supplemental Indenture, dated August 19, 2008, by and between Ferro Corporation and U.S. Bank National Association (with Form of 6.50% Convertible Senior Note due 2013) (incorporated by reference to Exhibit 4.2 to Ferro Corporation's Current Report on Form 8 K, filed August 19, 2008).
4.3 Form of Indenture, by and between Ferro Corporation and Wilmington Trust FSB (incorporated by reference to Exhibit 4.1 to Ferro Corporation's Registration Statement on Form S 3ASR, filed July 27, 2010).
4.4 First Supplemental Indenture, dated August 24, 2010, by and between Ferro Corporation and Wilmington Trust FSB (with Form of 7.875% Senior Notes due 2018) (incorporated by reference to Exhibit 4.1 to Ferro Corporation's Current Report on Form 8 K, filed August 24, 2010).
4.5 Second Supplemental Indenture, dated July 31, 2014, by and between Ferro Corporation and Wilmington Trust, National Association (incorporated by reference to Exhibit 10.1 to Ferro Corporation's current Report on Form

8-K, filed August 5, 2014).

The Company agrees, upon request, to furnish to the U.S. Securities and Exchange Commission a copy of any instrument authorizing long-term debt that does not authorize debt in excess of 10% of the total assets of the Company and its subsidiaries on a consolidated basis.

31	Certifications:
31.1	Certification of Principal Executive Officer Pursuant to Rule 13a-14(a)/15d-14(a).
31.2	Certification of Principal Financial Officer Pursuant to Rule 13a-14(a)/15d-14(a).
32.1	Certification of Principal Executive Officer Pursuant to 18 U.S.C. 1350.
32.2	Certification of Principal Financial Officer Pursuant to 18 U.S.C. 1350.

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Exhibit:

101	XBRL Documents:
101.INS	XBRL Instance Document
101.SCH	XBRL Schema Document
101.CAL	XBRL Calculation Linkbase Document
101.LAB	XBRL Labels Linkbase Document
101.PRE	XBRL Presentation Linkbase Document
101.DEF	XBRL Definition Linkbase Document

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*Indicates management contract or compensatory plan, contract or arrangement in which one or more Directors and/or executives of Ferro Corporation may be participants.

** Certain exhibits and schedules have been omitted and the registrant agrees to furnish a copy of any omitted exhibits and schedules to the Securities and Exchange