



Where innovation  
delivers performance

## FERRO REPORTS FIRST-QUARTER 2019 RESULTS

ADJUSTS 2019 GUIDANCE, WHILE MAINTAINING GUIDANCE ON ADJUSTED FREE CASH FLOW CONVERSION

### First Quarter \*

- Volume increased 2.5%
- Net Sales declined 4.4% to \$387.5 million
- Net Sales on a constant currency basis increased 0.7%
- GAAP Diluted EPS declined 40.7% to \$0.16
- Adjusted EPS declined 38.9% to \$0.22
- Net Income<sup>1</sup> declined 41.8% to \$13.6 million
- Adjusted EBITDA declined 25.2% to \$47.9 million
- 1.4 million shares repurchased for a total cost of \$25.0 million

“Like many companies in our industry, Ferro experienced weaker first quarter demand in certain end markets and geographic regions, particularly in Europe and China. Order patterns and inventory destocking in certain of the higher-end markets we serve contributed to the weaker demand. In addition, headwinds from foreign exchange rates affected our results.

We are actively implementing optimization initiatives throughout our global footprint and investing selectively in market-leading innovation to maintain organic growth. In so doing, we continue to advance the objectives of innovation and optimization at the core of the current phase of our strategy, with adjustments in emphasis to address current macroeconomic circumstances, and position Ferro to deliver profitable growth over the long term.

Peter Thomas  
Chairman, President and CEO

”

### Key Results \* (amounts in millions, except EPS)

#### Sales and Gross Profits

	Q1 2019	Q1 2018	% Change
Net Sales	\$ 387,548	\$ 405,532	-4.4%
Net Sales (Constant Currency)	387,548	384,859	0.7%
Gross Profit (GAAP)	101,856	118,686	-14.2%
Adjusted Gross Profit (Constant Currency)	102,895	113,785	-10.6%

#### Net Income, Adjusted EBITDA and EPS

	Q1 2019	Q1 2018	% Change
Net Income <sup>1</sup>	\$ 13,604	\$ 23,391	-41.8%
Adjusted EBITDA	47,902	64,024	-25.2%
GAAP diluted EPS	\$ 0.16	\$ 0.27	-40.7%
Adjusted EPS	0.22	0.36	-38.9%

\*Comparative information is relative to prior-year first quarter.

<sup>1</sup> Note: Net Income attributable to Ferro Corporation common shareholders.

## First Quarter Commentary

Net Sales in the first quarter of 2019 declined 4.4% to \$387.5 million. The decrease was driven by foreign currency impact of \$20.7 million, as well as lower sales volume and mix resulting from continued destocking by high-end tile customers, which affected our Performance Coatings' business, and weather-related weakness in construction markets, which affected our Color Solutions' pigments business. On a constant currency basis, net sales increased 0.7% to \$387.5 million.

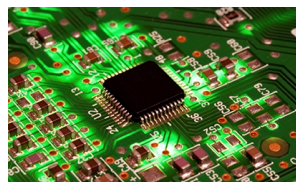
During the quarter, the Company repurchased approximately 1.4 million shares at an average price of \$17.35 per share for a total cost of \$25.0 million. Approximately \$46.2 million remains under the current share repurchase authorization from the Board of Directors. The Company expects to be judicious through the remainder of 2019 with its strategic investments, which may include acquisitions, share repurchases and debt retirement, and to remain mindful of overall leverage.

## Segment Results \* (amounts in millions)



### Performance Coatings

Net Sales	\$ 170,347	\$ 184,648	-7.7%
Net Sales (Constant Currency)	170,347	173,914	-2.1%
Gross Profit (GAAP)	33,645	43,765	-23.1%
Adjusted Gross Profit (Constant Currency)	33,850	41,087	-17.6%



### Performance Colors & Glass

Net Sales	\$ 120,845	\$ 120,505	0.3%
Net Sales (Constant Currency)	120,845	114,718	5.3%
Gross Profit (GAAP)	39,467	43,328	-8.9%
Adjusted Gross Profit (Constant Currency)	39,517	41,238	-4.2%



### Color Solutions

Net Sales	\$ 96,356	\$ 100,379	-4.0%
Net Sales (Constant Currency)	96,356	96,227	0.1%
Gross Profit (GAAP)	28,396	32,149	-13.2%
Adjusted Gross Profit (Constant Currency)	29,342	31,596	-7.1%

\*Comparative information is relative to prior-year first quarter.

## Full-Year Updated 2019 Guidance (as of 4/30/2019)

	Adjusted EBITDA	Adjusted Diluted EPS	Adjusted Free Cash Flow from Operations Conversion
Updated 2019 Guidance	\$250 to \$260M	\$1.35 to \$1.45	45% - 50%

The 2019 guidance assumes no acquisitions, divestitures, restructuring, acquisition-related professional fees, optimization programs spend, or repurchase of common stock.

Note: The full-year 2019 guidance uses foreign exchange rates as of March 31, 2019, which includes a USD/EUR exchange rate at 1.12.

Ferro is providing Adjusted Diluted EPS, Adjusted EBITDA and Adjusted Free Cash Flow from Operations Conversion guidance on a continuing operations basis. While it is likely that Ferro could incur charges for items excluded from Adjusted Diluted EPS, Adjusted EBITDA and Adjusted Free Cash Flow from Operations conversion such as mark-to-market adjustments of pension and other postretirement benefit obligations, restructuring and impairment charges, and legal and professional expenses related to certain business development activities, it is not possible, without unreasonable effort, to identify the amount or significance of these items or the potential for other transactions that may impact future GAAP net income and cash flow from operating activities. Management does not believe these items to be representative of underlying business performance. Management is unable to reconcile, without unreasonable effort, the Company's forecasted range of these adjusted non-GAAP financial measures to their most directly comparable GAAP financial measures.

Currency Exposure 2018 Weighting		2019 Guidance FX sensitivity	
		% Change	Operating Profit
EUR - Euro	40% to 45%	+ 1% all FX change	~ \$1.5 million to ~\$1.7 million
CNY - Yuan Renminbi	6% to 8%	+ 1% Euro change	~ \$1.1 million to ~\$1.3 million
MXN - Mexican Peso	4% to 6%		
EGP - Egyptian Pound	3% to 5%		

## Constant Currency

Constant currency results reflect the remeasurement of 2018 reported and adjusted local currency results using 2019 exchange rates, which produces constant currency comparative figures to 2019 reported and adjusted results. These non-GAAP financial measures should not be considered as a substitute for the measures of financial performance prepared in accordance with GAAP.

## Conference Call

Ferro will conduct an investor teleconference at 8:00 a.m. EDT Wednesday, May 1, 2019. Investors can access this conference via any of the following:

- Webcast can be accessed by clicking on the Investors link at the top of Ferro's website at [ferro.com](http://ferro.com).
- Live telephone: Call 800-668-0506 within the U.S. or +1 303-223-4382 outside the U.S. Please join the call at least 10 minutes before the start time.
- Webcast replay: Available on Ferro's Investor website at [ferro.com](http://ferro.com) beginning at approximately 4:30 p.m. Eastern Time on May 1, 2019.
- Telephone replay: Call 800-633-8284 within the U.S. or +1 402-977-9140 outside the U.S. (for both U.S. and outside the U.S. access code is 21922678).
- Presentation material and podcast: Earnings presentation material and podcasts can be accessed through the Investors portion of the Company's website at [ferro.com](http://ferro.com).

## About Ferro Corporation

Ferro Corporation ([www.ferro.com](http://www.ferro.com)) is a leading global supplier of technology-based functional coatings and color solutions. Ferro supplies functional coatings for glass, metal, ceramic and other substrates and color solutions in the form of specialty pigments and colorants for a broad range of industries and applications. Ferro products are sold into the building and construction, automotive, electronics, industrial products, household furnishings and appliance markets. The Company's reportable segments include: Performance Coatings (metal and ceramic coatings), Performance Colors and Glass (glass coatings), and Color Solutions. Headquartered in Mayfield Heights, Ohio, the Company has approximately 5,980 associates globally and reported 2018 sales of \$1.6 billion.

## Cautionary Note on Forward-Looking Statements

Certain statements in this press release may constitute “forward-looking statements” within the meaning of federal securities laws. These statements are subject to a variety of uncertainties, unknown risks, and other factors concerning the Company’s operations and business environment. Important factors that could cause actual results to differ materially from those suggested by these forward-looking statements and that could adversely affect the Company’s future financial performance include the following:

- demand in the industries into which Ferro sells its products may be unpredictable, cyclical, or heavily influenced by consumer spending;
- the effectiveness of the Company’s efforts to improve operating margins through sales growth, price increases, productivity gains, and improved purchasing techniques;
- currency conversion rates and economic, social, political, and regulatory conditions in the U.S. and around the world;
- the availability of reliable sources of energy and raw materials at a reasonable cost;
- Ferro’s ability to successfully implement and/or administer its optimization initiatives, including its investment and restructuring programs, and to produce the desired results;
- Ferro’s ability to successfully introduce new products and services or enter into new growth markets;
- Ferro’s ability to identify suitable acquisition candidates, complete acquisitions, effectively integrate the acquired businesses and achieve the expected synergies, as well as the acquisitions being accretive and Ferro achieving the expected returns on invested capital;
- competitive factors, including intense price competition;
- the impact of damage to, or the interruption, failure or compromise of the Company’s information systems due to events including but not limited to aging information systems infrastructure, computer viruses and cyber security breaches;
- the implementation and operations of business information systems and processes;
- increased, and possibly inconsistent, domestic and foreign regulations of privacy and data security;
- restrictive covenants in the Company’s credit facilities could affect its strategic initiatives and liquidity;
- Ferro’s ability to access capital markets, borrowings or financial transactions;
- increasingly aggressive domestic and foreign governmental regulation of hazardous and other materials and regulations affecting health, safety and the environment;
- our ability to address safety, human health, product liability and environmental risks associated with our current and historical products, product life cycles and production processes;
- exposure to lawsuits, governmental investigations and proceedings relating to current and historical operations and products;
- sale of products and materials into highly regulated industries;
- limited or no redundancy for certain of the Company’s manufacturing facilities and possible interruption of operations at those facilities;
- Ferro’s ability to protect its intellectual property, including trade secrets, or to successfully resolve claims of infringement brought against it;
- Ferro’s multi-jurisdictional tax structure and its ability to reduce its effective tax rate, including the impact of the Company’s performance on its ability to utilize significant deferred tax assets;
- the impact of the Tax Cuts and Jobs Act on our business;
- Ferro’s borrowing costs could be affected adversely by interest rate increases;
- stringent labor and employment laws and relationships with the Company’s employees;
- management of Ferro’s general and administrative expenses;
- the impact of requirements to fund employee benefit costs, especially post-retirement costs;
- implementation of business processes and information systems, including the outsourcing of functions to third parties;
- risks associated with the manufacture and sale of material into industries making products for sensitive applications;
- our ability to attract and retain key personnel;

## Cautionary Note on Forward-Looking Statements (continued)

- changes in U.S. and other governments' trade policies;
- risks and uncertainties associated with intangible assets;
- liens on the Company's assets by its lenders affect its ability to dispose of property and businesses;
- amount and timing of any repurchase of Ferro's common stock;
- challenges associated with a multi-national company such as Ferro competing lawfully with local competitors in certain regions of the world;
- the effectiveness of strategies to increase Ferro's return on invested capital, internal rate of return and other return metrics, and the short-term impact that acquisitions may have on such metrics; and
- other factors affecting the Company's business that are beyond its control, including disasters, accidents and governmental actions.

The risks and uncertainties identified above are not the only risks the Company faces. Additional risks and uncertainties not presently known to the Company or that it currently believes to be immaterial also may adversely affect the Company. Should any known or unknown risks and uncertainties develop into actual events, these developments could have material adverse effects on our business, financial condition and results of operations.

This release contains time-sensitive information that reflects management's best analysis only as of the date of this release. The Company does not undertake any obligation to publicly update or revise any forward-looking statements to reflect future events, information or circumstances that arise after the date of this release.

Additional information regarding these risks can be found in our Annual Report on Form 10-K for the year ended December 31, 2018.

## Ferro Corporation

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Director of Investor Relations and Corporate Communications

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**Table 1**  
**Ferro Corporation and Subsidiaries**  
**Condensed Consolidated Statements of Operations (unaudited)**

(In thousands, except per share amounts)

	Three Months Ended March 31,	
	2019	2018
<b>Net sales</b>	\$ 387,548	\$ 405,532
Cost of sales	285,692	286,846
Gross profit	101,856	118,686
Selling, general and administrative expenses	72,080	73,092
Restructuring and impairment charges	2,127	4,106
Other expense (income):		
Interest expense	8,545	7,962
Interest earned	(87)	(201)
Foreign currency losses, net	738	1,840
Miscellaneous expense, net	275	775
<b>Income before income taxes</b>	18,178	31,112
Income tax expense	4,300	7,514
<b>Net income</b>	13,878	23,598
Less: Net income attributable to noncontrolling interests	274	207
<b>Net income attributable to Ferro Corporation common shareholders</b>	<u>\$ 13,604</u>	<u>\$ 23,391</u>
<b>Earnings per share attributable to Ferro Corporation common shareholders:</b>		
Basic earnings per share	0.16	0.28
Diluted earnings per share	0.16	0.27
Shares outstanding:		
Weighted-average basic shares	82,480	84,228
Weighted-average diluted shares	83,301	85,510
End-of-period basic shares	81,931	84,396

**Table 2**  
**Ferro Corporation and Subsidiaries**  
**Segment Net Sales and Gross Profit and SG&A (unaudited)**

(Dollars in thousands)

	Three Months Ended	
	March 31,	
	2019	2018
<b>Segment Net Sales</b>		
Performance Coatings	\$ 170,347	\$ 184,648
Performance Colors and Glass	120,845	120,505
Color Solutions	96,356	100,379
Total segment net sales	\$ 387,548	\$ 405,532
<b>Segment Gross Profit</b>		
Performance Coatings	\$ 33,645	\$ 43,765
Performance Colors and Glass	39,467	43,328
Color Solutions	28,396	32,149
Other costs of sales	348	(556)
Total gross profit	\$ 101,856	\$ 118,686
<b>Selling, general and administrative expenses</b>		
Strategic services	\$ 40,325	\$ 41,178
Functional services	27,611	26,518
Incentive compensation	1,375	2,966
Stock-based compensation	2,769	2,430
Total selling, general and administrative expenses	\$ 72,080	\$ 73,092



**Table 3**  
**Ferro Corporation and Subsidiaries**  
**Condensed Consolidated Balance Sheets (unaudited)**

(Dollars in thousands)

	March 31, 2019	December 31, 2018
<b>ASSETS</b>		
<b>Current assets</b>		
Cash and cash equivalents	\$ 57,637	\$ 104,301
Accounts receivable, net	329,149	306,882
Inventories	366,628	356,998
Other receivables	86,022	91,143
Other current assets	25,474	23,960
Total current assets	864,910	883,284
<b>Other assets</b>		
Property, plant and equipment, net	385,079	381,341
Goodwill	214,815	216,464
Intangible assets, net	179,349	184,953
Deferred income taxes	103,433	103,488
Operating leased assets	27,110	-
Other non-current assets	48,710	42,930
Total assets	\$ 1,823,406	\$ 1,812,460
<b>LIABILITIES AND EQUITY</b>		
<b>Current liabilities</b>		
Loans payable and current portion of long-term debt	\$ 10,156	\$ 10,260
Accounts payable	205,486	256,573
Accrued payrolls	33,305	39,989
Accrued expenses and other current liabilities	90,466	77,995
Total current liabilities	339,413	384,817
<b>Other liabilities</b>		
Long-term debt, less current portion	860,441	811,137
Postretirement and pension liabilities	172,185	173,046
Operating leased non-current liabilities	17,562	-
Other non-current liabilities	57,908	57,611
Total liabilities	1,447,509	1,426,611
<b>Equity</b>		
Total Ferro Corporation shareholders' equity	366,299	376,631
Noncontrolling interests	9,598	9,218
Total liabilities and equity	\$ 1,823,406	\$ 1,812,460

**Table 4**  
**Ferro Corporation and Subsidiaries**  
**Condensed Consolidated Statements of Cash Flows (unaudited)**

(Dollars in thousands)

	Three Months Ended March 31,	
	2019	2018
<b>Cash flows from operating activities</b>		
Net income	\$ 13,878	\$ 23,598
Loss on sale of assets	164	229
Depreciation and amortization	14,264	13,392
Interest amortization	900	870
Restructuring and impairment	179	2,429
Accounts receivable	(43,733)	(32,657)
Inventories	(12,652)	(28,820)
Accounts payable	(43,680)	(7,139)
Other current assets and liabilities, net	(819)	(6,735)
Other adjustments, net	3,972	548
Net cash used in operating activities	(67,527)	(34,285)
<b>Cash flows from investing activities</b>		
Capital expenditures for property, plant and equipment and other long lived assets	(23,326)	(20,682)
Collections of financing receivables	20,186	-
Business acquisitions, net of cash acquired	(251)	(2,352)
Other investing activities	-	22
Net cash used in investing activities	(3,391)	(23,012)
<b>Cash flows from financing activities</b>		
Net borrowings under loans payable	33	9,742
Principal payments on term loan facility - Credit Facility	-	(1,664)
Principal payments on term loan facility - Amended Credit Facility	(2,050)	-
Proceeds from revolving credit facility - Credit Facility	-	119,550
Principal payments on revolving credit facility - Credit Facility	-	(79,367)
Proceeds from revolving credit facility - Amended Credit Facility	104,174	-
Principal payments on revolving credit facility - Amended Credit Facility	(52,866)	-
Acquisition-related contingent consideration payment	-	(348)
Purchase of treasury stock	(25,000)	-
Other financing activities	(414)	(2,133)
Net cash provided by financing activities	23,877	45,780
Effect of exchange rate changes on cash and cash equivalents	377	1,262
<b>Decrease in cash and cash equivalents</b>	<b>(46,664)</b>	<b>(10,255)</b>
Cash and cash equivalents at beginning of period	104,301	63,551
<b>Cash and cash equivalents at end of period</b>	<b>\$ 57,637</b>	<b>\$ 53,296</b>
Cash paid during the period for:		
Interest	\$ 8,232	\$ 7,314
Income taxes	\$ 3,940	\$ 4,575

**Table 5**  
**Ferro Corporation and Subsidiaries**  
**Supplemental Information**  
**Reconciliation of Reported Income to Adjusted Income**  
**For the Three Months Ended March 31 (unaudited)**

(Dollars in thousands, except per share amounts)	Cost of sales	Selling general and administrative expenses	Restructuring and impairment charges	Other expense, net	Income tax expense <sup>3</sup>	Net income attributable to common shareholders	Diluted earnings per share
2019							
As reported	\$ 285,692	\$ 72,080	\$ 2,127	\$ 9,471	\$ 4,300	\$ 13,604	\$ 0.16
Adjustments:							
Restructuring	-	-	(2,127)	-	-	2,127	0.03
Acquisition related costs <sup>1</sup>	(75)	(2,545)	-	-	-	2,620	0.03
Costs related to optimization projects	(964)	53	-	(50)	-	961	0.01
Costs related to divested businesses and assets	-	(331)	-	(72)	-	403	-
Tax on adjustments	-	-	-	-	1,285	(1,285)	(0.02)
Total adjustments <sup>4</sup>	(1,039)	(2,823)	(2,127)	(122)	1,285	4,826	0.05
As adjusted	<u>\$ 284,653</u>	<u>\$ 69,257</u>	<u>\$ -</u>	<u>\$ 9,349</u>	<u>\$ 5,585</u>	<u>\$ 18,430</u>	<u>\$ 0.22</u>
2018							
As reported	\$ 286,846	\$ 73,092	\$ 4,106	\$ 10,376	\$ 7,514	\$ 23,391	\$ 0.27
Adjustments:							
Restructuring	-	-	(4,106)	-	-	4,106	0.05
Acquisition related costs <sup>2</sup>	(588)	(2,646)	-	(766)	-	4,000	0.05
Costs related to optimization projects	(391)	(898)	-	-	-	1,289	0.02
Costs related to divested businesses and assets	-	(515)	-	(38)	-	553	0.01
Tax on adjustments	-	-	-	-	2,393	(2,393)	(0.03)
Total adjustments <sup>4</sup>	(979)	(4,059)	(4,106)	(804)	2,393	7,555	0.09
As adjusted	<u>\$ 285,867</u>	<u>\$ 69,033</u>	<u>\$ -</u>	<u>\$ 9,572</u>	<u>\$ 9,907</u>	<u>\$ 30,946</u>	<u>\$ 0.36</u>

- (1) The adjustments to "Cost of Sales" primarily include the amortization of purchase accounting adjustments related to our recent acquisitions. The adjustments to "Selling general and administrative expenses" primarily include legal, professional and other expenses related to acquisition costs.
- (2) The adjustments to "Cost of Sales" primarily include the amortization of purchase accounting adjustments related to our recent acquisitions. The adjustments to "Selling general and administrative expenses" primarily include legal, professional and other expenses related to acquisition costs. The adjustments to "Other expense, net" primarily relate to earn out adjustments related to acquisitions that are beyond the measurement period.
- (3) Income tax expense reflects the reported expense, adjusted for adjustments being tax effected at the respective statutory rate where the item originated.
- (4) Due to rounding, total earnings per share related to adjustments does not always add to the total adjusted earnings per share.

It should be noted that adjusted net income, earnings per share and other adjusted items referred to above are financial measures not required by, or presented in accordance with, accounting principles generally accepted in the United States (U.S. GAAP). These Non-GAAP financial measures should be considered as a supplement to, and not as a substitute for, the financial measures prepared in accordance with U.S. GAAP, and a reconciliation of these financial measures to the most comparable U.S. GAAP financial measures is presented. We believe this data provides investors with additional useful information on the underlying operations and trends of the business and enables period-to-period comparability of financial performance.

**Table 6**  
**Ferro Corporation and Subsidiaries**  
**Supplemental Information**  
**Reconciliation of Adjusted Gross Profit**

(Dollars in thousands)

	Three Months Ended March 31,	
	2019	2018
Performance Coatings	\$ 170,347	\$ 184,648
Performance Colors and Glass	120,845	120,505
Color Solutions	96,356	100,379
Total net sales	<u>\$ 387,548</u>	<u>\$ 405,532</u>
Total net sales	\$ 387,548	\$ 405,532
Adjusted cost of sales <sup>1</sup>	<u>284,653</u>	<u>285,867</u>
Adjusted gross profit	<u>\$ 102,895</u>	<u>\$ 119,665</u>
Adjusted gross profit percentage	26.6%	29.5%

(1) Refer to Table 5 for the reconciliation of adjusted cost of sales for the three months ended March 31, 2019 and 2018, respectively.

It should be noted that adjusted gross profit is a financial measure not required by, or presented in accordance with, accounting principles generally accepted in the United States (U.S. GAAP). This Non-GAAP financial measure should be considered as a supplement to, and not as a substitute for, the financial measures prepared in accordance with U.S. GAAP and a reconciliation of this financial measure to the most comparable U.S. GAAP financial measure is presented. We believe this data provides investors with additional useful information on the underlying operations and trends of the business and enables period-to-period comparability of financial performance.

**Table 7**  
**Ferro Corporation and Subsidiaries**  
**Supplemental Information**  
**Constant Currency Schedule of Adjusted Operating Profit (unaudited)**

(Dollars in thousands)	Three Months Ended March 31,			
	2018	Adjusted 2018 <sup>1</sup>	2019	2019 vs Adjusted 2018
<b>Segment net sales</b>				
Performance Coatings	\$ 184,648	\$ 173,914	\$ 170,347	\$ (3,567)
Performance Colors and Glass	120,505	114,718	120,845	6,127
Color Solutions	100,379	96,227	96,356	129
<b>Total segment net sales</b>	<b>\$ 405,532</b>	<b>\$ 384,859</b>	<b>\$ 387,548</b>	<b>\$ 2,689</b>
<b>Segment adjusted gross profit</b>				
Performance Coatings	\$ 43,724	\$ 41,087	\$ 33,850	\$ (7,237)
Performance Colors and Glass	43,328	41,238	39,517	(1,721)
Color Solutions	32,739	31,596	29,342	(2,254)
Other costs of sales	(126)	(136)	186	322
<b>Total adjusted gross profit<sup>2</sup></b>	<b>\$ 119,665</b>	<b>\$ 113,785</b>	<b>\$ 102,895</b>	<b>\$ (10,890)</b>
<b>Adjusted selling, general and administrative expenses</b>				
Strategic services	\$ 41,099	\$ 38,855	\$ 40,218	\$ 1,363
Functional services	22,545	21,985	24,895	2,910
Incentive compensation	2,959	2,830	1,375	(1,455)
Stock-based compensation	2,430	2,430	2,769	339
<b>Total adjusted selling, general and administrative expenses<sup>3</sup></b>	<b>\$ 69,033</b>	<b>\$ 66,100</b>	<b>\$ 69,257</b>	<b>\$ 3,157</b>
<b>Adjusted operating profit</b>	<b>\$ 50,632</b>	<b>\$ 47,685</b>	<b>\$ 33,638</b>	<b>\$ (14,047)</b>
<b>Adjusted operating profit as a % of net sales</b>	<b>12.5%</b>	<b>12.4%</b>	<b>8.7%</b>	

(2) Reflects the remeasurement of 2018 reported and adjusted local currency results using 2019 exchange rates, resulting in constant currency comparative figures to 2019 reported and adjusted results. See Table 5 for Non-GAAP adjustments applicable to the three month period.

(3) Refer to Table 6 for the reconciliation of adjusted gross profit for the three months ended March 31, 2019 and 2018, respectively.

(4) Refer to Table 5 for the reconciliation of adjusted SG&A expenses for the three months ended March 31, 2019 and 2018, respectively.

It should be noted that adjusted net sales, gross profit, SG&A expenses, and operating profit are financial measures not required by, or presented in accordance with, accounting principles generally accepted in the United States (U.S. GAAP). These Non-GAAP financial measures should be considered as a supplement to, and not as a substitute for, the financial measures prepared in accordance with U.S. GAAP and a reconciliation of these financial measures to the most comparable U.S. GAAP financial measures are presented within this table, as well as Table 5 and Table 6. We believe this data provides investors with additional useful information on the underlying operations and trends of the business and enables period-to-period comparability of financial performance.

**Table 8**  
**Ferro Corporation and Subsidiaries**  
**Supplemental Information**  
**Reconciliation of Net income attributable to Ferro Corporation**  
**common shareholders to Adjusted EBITDA (unaudited)**

(Dollars in thousands)

	Three Months Ended March 31,	
	2019	2018
Net income attributable to Ferro Corporation common shareholders	\$ 13,604	\$ 23,391
Net income attributable to noncontrolling interests	274	207
Restructuring and impairment charges	2,127	4,106
Other expense, net	926	2,414
Interest expense	8,545	7,962
Income tax expense	4,300	7,514
Depreciation and amortization	15,164	14,262
Less: interest amortization expense and other	(900)	(870)
Cost of sales adjustments <sup>1</sup>	1,039	979
SG&A adjustments <sup>1</sup>	2,823	4,059
Adjusted EBITDA	<u>\$ 47,902</u>	<u>\$ 64,024</u>
Net sales	\$ 387,548	\$ 405,532
Adjusted EBITDA as a % of net sales	12.4%	15.8%

- (1) For details of Non-GAAP adjustments, refer to Table 5 for the reconciliation of adjusted cost of sales and adjusted SG&A for the three months ended March 31, 2019 and 2018, respectively.

It should be noted that adjusted EBITDA is a financial measure not required by, or presented in accordance with, accounting principles generally accepted in the United States (U.S. GAAP). This Non-GAAP financial measure should be considered as a supplement to, and not as a substitute for, the financial measures prepared in accordance with U.S. GAAP and a reconciliation of this financial measure to the most comparable U.S. GAAP financial measure is presented. We believe this data provides investors with additional useful information on the underlying operations and trends of the business and enables period-to-period comparability of financial performance.

**Table 9**  
**Ferro Corporation and Subsidiaries**  
**Supplemental Information**  
**Change in Net Debt (unaudited)**

(Dollars in thousands)

	Three Months Ended March 31,	
	2019	2018
<b>Beginning of period</b>		
Gross debt	\$ 826,224	\$ 759,078
Cash	104,301	63,551
Debt, net of cash	721,923	695,527
Unamortized debt issuance costs	4,827	7,451
Debt, net of cash and unamortized debt issuance costs	717,096	688,076
<b>End of period</b>		
Gross debt	875,189	815,930
Cash	57,637	53,296
Debt, net of cash	817,552	762,634
Unamortized debt issuance costs	4,592	7,163
Debt, net of cash and unamortized debt issuance costs	812,960	755,471
Change from FX on Euro term loan	-	(7,915)
Unamortized debt issuance costs	(235)	(288)
FX on cash	377	1,262
Period (increase) in debt, net of cash, unamortized debt issuance costs and FX	\$ (96,006)	\$ (60,454)
Period (increase) in debt, net of cash and unamortized debt issuance costs	\$ (95,864)	\$ (67,395)

It should be noted that the change in net debt is a financial measure not required by, or presented in accordance with, accounting principles generally accepted in the United States (U.S. GAAP). This Non-GAAP financial measure should be considered as a supplement to, and not as a substitute for, the financial measures prepared in accordance with U.S. GAAP and a reconciliation of this financial measure to the most comparable U.S. GAAP financial measure is presented. We believe this data provides investors with additional useful information on the underlying operations and trends of the business and enables period-to-period comparability of financial performance.

**Table 10**  
**Ferro Corporation and Subsidiaries**  
**Supplemental Information**  
**Adjusted Free Cash Flow used in Continuing Operations (unaudited)**

(Dollars in thousands)

	Three Months Ended March 31,	
	2019	2018
Cash flows from operating activities		
Net income	\$ 13,878	\$ 23,598
Loss on sale of assets	164	229
Depreciation and amortization	14,264	13,392
Interest amortization	900	870
Restructuring and impairment	179	2,429
Accounts receivable	(43,733)	(32,657)
Inventories	(12,652)	(28,820)
Accounts payable	(43,680)	(7,139)
Other current assets and liabilities, net	(819)	(6,735)
Other adjustments, net	3,972	548
Net cash used in operating activities (GAAP)	<u>\$ (67,527)</u>	<u>\$ (34,285)</u>
Less: Capital Expenditures	(23,326)	(20,682)
Plus: Cash collected for AR securitization	20,186	-
Free Cash Flow used in Continuing Operations (Non-GAAP)	<u>(70,667)</u>	<u>(54,967)</u>
Plus: cash used for restructuring	1,948	1,678
Plus: cash used for capital expenditures related to optimization projects <sup>(1)</sup>	7,894	6,208
Plus: Cash used for net working capital investment related to optimization projects <sup>(2)</sup>	11,480	2,051
Plus: Cash used for acquisition related professional fees <sup>(3)</sup>	2,267	825
Plus: Cash used for optimization projects <sup>(3)</sup>	1,401	1,289
Plus: Cash used for divested businesses and assets <sup>(3)</sup>	403	515
Adjusted Free Cash Flow used in Continuing Operations (Non-GAAP)	<u>(45,274)</u>	<u>(42,401)</u>
Net Income Attributable to Ferro Corporation Common Shareholders	13,604	23,391
Net Cash Provided by Operating Activities Conversion of Net Income Attributable to Ferro Corporation Common Shareholders	-496.4%	-146.6%
Adjusted EBITDA (Non-GAAP) - From Table 8	47,902	64,024
Adjusted Free Cash Flow Conversion of Adjusted EBITDA from Continuing Operations (Non-GAAP)	-94.5%	-66.2%
Adjusted Free Cash Flow Conversion of Adjusted EBITDA from Continuing Operations, adjusted for AR Securitization impact (Non-GAAP) <sup>(4)</sup>	-105.9%	-66.2%

- (1) The adjustment to capital expenditures represents capital spend for certain optimization projects that are not expected to recur in the long-term at the current rate. See Table 9 for the reconciliation of period change in debt, net of cash, unamortized debt issuance costs and FX.
- (2) The adjustment to net working capital represents spend for the build in inventory related to the optimization project noted in (1) above. This build in inventory is considered to be outside of the normal operations of the underlying business, and expected to be temporary in nature.
- (3) The adjustment represents those cash outlays for (a) acquisition related professional fees, (b) costs related to certain optimization projects, and (c) costs related to divested businesses and assets, as detailed in the description of Non-GAAP adjustments in Table 5 for the three months ended March 31, 2019 and 2018, respectively.
- (4) Adjusted free cash flow conversion of adjusted EBITDA from continuing operations adjusted for the change in the cash proceeds collected of \$5.5 million for the three months ended March 31, 2019, that is required to be remitted back to the financial institution under the international receivable sales program.

It should be noted that adjusted free cash flow from continuing operations is a financial measure not required by, or presented in accordance with, accounting principles generally accepted in the United States (U.S. GAAP). The Non-GAAP financial measure should be considered as a supplement to, and not as a substitute for, the financial measures prepared in accordance with U.S. GAAP and a reconciliation of these financial measures to the most comparable U.S. GAAP financial measures is presented. We believe this data provides investors with additional useful information on the underlying operations and trends of the business and enables period-to-period comparability of financial performance. Additionally, certain elements of these measures are used in the calculation of certain incentive compensation programs for management.