

Second Quarter *

- Volume declined 2.1%
- Net Sales declined by 5.4% to \$393.9 million
- Net Sales on a constant currency basis declined by 2.0%
- GAAP Diluted EPS of \$0.13
- Adjusted EPS of \$0.35
- Net Income¹ of \$10.9 million and Adjusted EBITDA of \$62.7 million

“ In the second quarter, Ferro continued to experience the effects of global economic uncertainty and slowing growth outside the United States, as well as currency exchange rate headwinds. Poor macroeconomic visibility has led to customer cautiousness in certain of the markets we serve, particularly the automotive and construction sectors. Our customers are compressing order lead times as they work through existing inventory and raw materials. Because of these circumstances, we are revising our full-year guidance.

Despite the macro-economic challenges, we improved gross margins across our reporting segments and improved Adjusted EBITDA margin as well, in the second quarter relative to the first quarter. In addition, demand remained strong for our electronic materials and surface technology products.

We continue to advance innovation and optimization initiatives. Our product innovation initiatives have resulted in a robust pipeline of products that serve emerging technologies and generate attractive gross margins. Optimization initiatives are underway across the globe that are designed to structurally lower our fixed costs. These initiatives continue to advance our strategy and position Ferro to maintain its leadership position in the long term.

Peter Thomas
Chairman, President and CEO

Key Results * (amounts in millions, except EPS)

Sales and Gross Profits	Q2 2019	% Change	YTD	% Change
Net Sales	\$ 393,902	-5.4%	\$ 781,450	-4.9%
Net Sales (Constant Currency)	393,902	-2.0%	781,450	-0.7%
Gross Profit (GAAP)	108,258	-14.5%	210,114	-14.4%
Adjusted Gross Profit (Constant Currency)	111,901	-9.0%	214,796	-9.3%
Net Income, Adjusted EBITDA and EPS	Q2 2019	% Change	YTD	% Change
Net Income ¹	\$ 10,871	-63.4%	\$ 24,475	-53.9%
Adjusted EBITDA	62,688	-16.6%	110,590	-20.6%
GAAP diluted EPS	\$ 0.13	-62.9%	\$ 0.29	-53.2%
Adjusted diluted EPS	0.35	-20.5%	0.57	-28.8%

*Comparative information is relative to prior-year second quarter and year-to-date.

¹ Note: Net Income attributable to Ferro Corporation common shareholders.

Second Quarter Commentary

Net Sales in the second quarter of 2019 declined 5.4% to \$393.9 million. The decline was driven by foreign currency impact of \$14.2 million, as well as lower volumes and mix within the Performance Coatings and Performance Colors and Glass segments. Continuing geopolitical and trade uncertainties appear to be dampening demand in certain industries, especially in Europe.

On a constant currency basis, net sales declined 2.0%. Gross Profit decreased 14.5% to \$108.3 million, impacted in part by higher manufacturing costs associated with transitioning to a more optimized manufacturing footprint and a temporary reduction in production at one of our plants as we made upgrades.

During the quarter, the Company did not repurchase any shares of common stock. Approximately \$46.2 million remains available under the current share repurchase authorization.

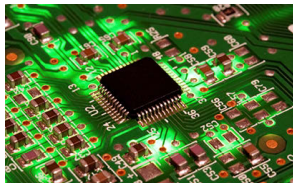
Segment Results * (amounts in millions, except EPS)



Performance Coatings

Net Sales	\$ 178,232	-7.9%	\$ 348,579	-7.8%
Net Sales <i>(Constant Currency)</i>	178,232	-4.4%	348,579	-3.3%
Gross Profit (GAAP)	39,822	-20.8%	73,467	-21.9%
Adjusted Gross Profit <i>(Constant Currency)</i>	40,932	-15.2%	74,782	-16.3%

	Q2 2019	% Change	YTD	% Change
Net Sales	\$ 178,232	-7.9%	\$ 348,579	-7.8%
Net Sales <i>(Constant Currency)</i>	178,232	-4.4%	348,579	-3.3%
Gross Profit (GAAP)	39,822	-20.8%	73,467	-21.9%
Adjusted Gross Profit <i>(Constant Currency)</i>	40,932	-15.2%	74,782	-16.3%



Performance Colors & Glass

Net Sales	\$ 118,404	-6.0%	\$ 239,249	-3.0%
Net Sales <i>(Constant Currency)</i>	118,404	-2.6%	239,249	1.2%
Gross Profit (GAAP)	39,376	-13.2%	78,843	-11.1%
Adjusted Gross Profit <i>(Constant Currency)</i>	39,852	-9.1%	79,369	-6.7%

	Q2 2019	% Change	YTD	% Change
Net Sales	\$ 118,404	-6.0%	\$ 239,249	-3.0%
Net Sales <i>(Constant Currency)</i>	118,404	-2.6%	239,249	1.2%
Gross Profit (GAAP)	39,376	-13.2%	78,843	-11.1%
Adjusted Gross Profit <i>(Constant Currency)</i>	39,852	-9.1%	79,369	-6.7%



Color Solutions

Net Sales	\$ 97,266	0.5%	\$ 193,622	-1.8%
Net Sales <i>(Constant Currency)</i>	97,266	3.6%	193,622	1.9%
Gross Profit (GAAP)	29,702	-5.8%	58,098	-8.8%
Adjusted Gross Profit <i>(Constant Currency)</i>	30,770	-1.0%	60,112	-4.1%

	Q2 2019	% Change	YTD	% Change
Net Sales	\$ 97,266	0.5%	\$ 193,622	-1.8%
Net Sales <i>(Constant Currency)</i>	97,266	3.6%	193,622	1.9%
Gross Profit (GAAP)	29,702	-5.8%	58,098	-8.8%
Adjusted Gross Profit <i>(Constant Currency)</i>	30,770	-1.0%	60,112	-4.1%

*Comparative information is relative to prior-year second quarter and year-to-date.

Full-Year Updated 2019 Guidance (as of 7/31/2019)

The Company's decision to lower guidance for the second half of 2019 results from an accumulation of macro-economic conditions, including uncertainty related to international trade, as well as higher manufacturing costs associated with transitioning to a more optimized manufacturing footprint. Macro-economic circumstances and slowing exports to certain markets, such as China, are reducing demand for Ferro's products in Europe, particularly in the automotive sector. Customers appear to be trying to limit their exposure by tightening supply chains and delaying future orders.

Given the global macro-economic uncertainties, Ferro is revising its guidance for the remainder of 2019.

	Adjusted EBITDA	Adjusted Diluted EPS	Adjusted Free Cash Flow from Operations Conversion
Updated 2019 Guidance	\$225 to \$240M	\$1.17 to \$1.27	45% to 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 June 30, 2019, which includes a USD/EUR exchange rate at 1.13.

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, July 31, 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.
- Live telephone: Call 888-223-4641 within the U.S. or +1 303-223-4365 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 beginning at approximately 4:30 p.m. Eastern Time on July 31, 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 21927407).
- Presentation material and podcast: Earnings presentation material and podcasts can be accessed through the Investors portion of the Company's website at ferro.com.

About Ferro Corporation

Ferro Corporation (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 5,870 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

Investor & Media Contact:

Kevin Cornelius Grant, 216.875.5451

Director of Investor Relations and Corporate Communications

kevincornelius.grant@ferro.com

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

(In thousands, except per share amounts)

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Net sales	\$ 393,902	\$ 416,239	\$ 781,450	\$ 821,771
Cost of sales	285,644	289,594	571,336	576,440
Gross profit	108,258	126,645	210,114	245,331
Selling, general and administrative expenses	71,645	70,124	143,725	143,216
Restructuring and impairment charges	10,260	3,768	12,387	7,874
Other expense (income):				
Interest expense	8,515	8,200	17,060	16,162
Interest earned	(149)	(186)	(236)	(387)
Foreign currency losses, net	1,380	2,660	2,118	4,500
Loss on extinguishment of debt	-	3,226	-	3,226
Miscellaneous expense (income), net	359	(1,372)	634	(597)
Income before income taxes	16,248	40,225	34,426	71,337
Income tax expense	5,139	10,364	9,439	17,878
Net income	11,109	29,861	24,987	53,459
Less: Net income attributable to noncontrolling interests	238	193	512	400
Net income attributable to Ferro Corporation common shareholders	\$ 10,871	\$ 29,668	\$ 24,475	\$ 53,059
Earnings per share attributable to Ferro Corporation common shareholders:				
Basic earnings per share	0.13	0.35	0.30	0.63
Diluted earnings per share	0.13	0.35	0.29	0.62
Shares outstanding:				
Weighted-average basic shares	81,932	84,341	82,206	84,284
Weighted-average diluted shares	82,678	85,589	83,055	85,545
End-of-period basic shares	81,933	84,137	81,933	84,137

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

(Dollars in thousands)

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Segment Net Sales				
Performance Coatings	\$ 178,232	\$ 193,449	\$ 348,579	\$ 378,097
Performance Colors and Glass	118,404	126,027	239,249	246,532
Color Solutions	97,266	96,763	193,622	197,142
Total segment net sales	\$ 393,902	\$ 416,239	\$ 781,450	\$ 821,771
Segment Gross Profit				
Performance Coatings	\$ 39,822	\$ 50,297	\$ 73,467	\$ 94,062
Performance Colors and Glass	39,376	45,362	78,843	88,690
Color Solutions	29,702	31,541	58,098	63,690
Other costs of sales	(642)	(555)	(294)	(1,111)
Total gross profit	\$ 108,258	\$ 126,645	\$ 210,114	\$ 245,331
Selling, general and administrative expenses				
Strategic services	\$ 38,496	\$ 39,643	\$ 78,821	\$ 80,821
Functional services	30,094	26,524	57,705	53,042
Incentive compensation	179	2,531	1,554	5,497
Stock-based compensation	2,876	1,426	5,645	3,856
Total selling, general and administrative expenses	\$ 71,645	\$ 70,124	\$ 143,725	\$ 143,216

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

(Dollars in thousands)

	June 30, 2019	December 31, 2018
ASSETS		
Current assets		
Cash and cash equivalents	\$ 51,311	\$ 104,301
Accounts receivable, net	339,616	306,882
Inventories	371,816	356,998
Other receivables	89,761	91,143
Other current assets	23,181	23,960
Total current assets	875,685	883,284
Other assets		
Property, plant and equipment, net	389,364	381,341
Goodwill	209,678	216,464
Intangible assets, net	176,222	184,953
Deferred income taxes	107,359	103,488
Operating leased assets	24,884	-
Other non-current assets	41,844	42,930
Total assets	<u>\$ 1,825,036</u>	<u>\$ 1,812,460</u>
LIABILITIES AND EQUITY		
Current liabilities		
Loans payable and current portion of long-term debt	\$ 17,840	\$ 10,260
Accounts payable	192,356	256,573
Accrued payrolls	35,618	39,989
Accrued expenses and other current liabilities	93,483	77,995
Total current liabilities	339,297	384,817
Other liabilities		
Long-term debt, less current portion	849,988	811,137
Postretirement and pension liabilities	172,256	173,046
Operating leased non-current liabilities	15,895	-
Other non-current liabilities	62,506	57,611
Total liabilities	1,439,942	1,426,611
Equity		
Total Ferro Corporation shareholders' equity	376,028	376,631
Noncontrolling interests	9,066	9,218
Total liabilities and equity	<u>\$ 1,825,036</u>	<u>\$ 1,812,460</u>

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

(Dollars in thousands)

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Cash flows from operating activities				
Net income	\$ 11,109	\$ 29,861	\$ 24,987	\$ 53,459
(Gain) loss on sale of assets	(1,383)	59	(1,219)	288
Depreciation and amortization	14,086	13,574	28,350	26,966
Interest amortization	912	903	1,812	1,773
Restructuring and impairment	6,579	3,050	6,758	5,479
Loss on extinguishment of debt	-	3,226	-	3,226
Accounts receivable	(27,097)	(18,107)	(70,830)	(50,764)
Inventories	(2,449)	(36,544)	(15,101)	(65,364)
Accounts payable	(14,792)	5,608	(58,472)	(1,531)
Other current assets and liabilities, net	274	(12,065)	(545)	(18,800)
Other adjustments, net	1,339	7,045	5,311	7,593
Net cash used in operating activities	(11,422)	(3,390)	(78,949)	(37,675)
Cash flows from investing activities				
Capital expenditures for property, plant and equipment and other long lived assets	(14,308)	(22,887)	(37,634)	(43,569)
Collections of financing receivables	21,085	-	41,271	-
Business acquisitions, net of cash acquired	-	(2,568)	(251)	(4,920)
Other investing activities	1,898	9	1,898	31
Net cash provided by (used in) investing activities	8,675	(25,446)	5,284	(48,458)
Cash flows from financing activities				
Net borrowings (repayments) under loans payable	7,495	(11,570)	7,528	(1,828)
Principal payments on term loan facility - Credit Facility	-	(302,396)	-	(304,060)
Principal payments on term loan facility - Amended Credit Facility	(2,050)	(2,050)	(4,100)	(2,050)
Proceeds from revolving credit facility - Credit Facility	-	15,400	-	134,950
Principal payments on revolving credit facility - Credit Facility	-	(133,583)	-	(212,950)
Proceeds from revolving credit facility - Amended Credit Facility	61,246	580	165,420	580
Proceeds from term loan facility - Amended Credit Facility	-	466,075	-	466,075
Principal payments on revolving credit facility - Amended Credit Facility	(70,077)	-	(122,943)	-
Payment of debt issuance costs	-	(3,466)	-	(3,466)
Acquisition-related contingent consideration payment	-	-	-	(348)
Purchase of treasury stock	-	(6,014)	(25,000)	(6,014)
Other financing activities	(154)	(254)	(568)	(2,387)
Net cash (used in) provided by financing activities	(3,540)	22,722	20,337	68,502
Effect of exchange rate changes on cash and cash equivalents	(39)	(2,296)	338	(1,034)
Decrease in cash and cash equivalents	(6,326)	(8,410)	(52,990)	(18,665)
Cash and cash equivalents at beginning of period	57,637	53,296	104,301	63,551
Cash and cash equivalents at end of period	\$ 51,311	\$ 44,886	\$ 51,311	\$ 44,886
Cash paid during the period for:				
Interest	\$ 8,725	\$ 9,136	\$ 16,957	\$ 16,450
Income taxes	\$ 4,311	\$ 9,803	\$ 8,251	\$ 14,378

Table 5
Ferro Corporation and Subsidiaries
Supplemental Information
Reconciliation of Reported Income to Adjusted Income
For the Three Months Ended June 30 (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 ⁵	Net income attributable to common shareholders	Diluted earnings per share
2019							
As reported	\$ 285,644	\$ 71,645	\$ 10,260	\$ 10,105	\$ 5,139	\$ 10,871	\$ 0.13
Adjustments:							
Restructuring	-	-	(10,260)	-	-	10,260	0.12
Acquisition related costs ¹	(321)	(5,183)	-	(768)	-	6,272	0.08
Costs related to optimization projects	(3,322)	(2,688)	-	-	-	6,010	0.07
Costs related to divested businesses and assets	-	(475)	-	(67)	-	542	0.01
Other ³	-	-	-	1,237	-	(1,237)	-
Tax on adjustments	-	-	-	-	4,105	(4,105)	(0.05)
Total adjustments ⁶	(3,643)	(8,346)	(10,260)	402	4,105	17,742	0.21
As adjusted	<u>\$ 282,001</u>	<u>\$ 63,299</u>	<u>\$ -</u>	<u>\$ 10,507</u>	<u>\$ 9,244</u>	<u>\$ 28,613</u>	<u>\$ 0.35</u>
2018							
As reported	\$ 289,594	\$ 70,124	\$ 3,768	\$ 12,528	\$ 10,364	\$ 29,668	\$ 0.35
Adjustments:							
Restructuring	-	-	(3,768)	-	-	3,768	0.04
Acquisition related costs ²	(364)	(3,149)	-	2,585	-	928	0.01
Costs related to optimization projects	(242)	(1,467)	-	-	-	1,709	0.02
Costs related to divested businesses and assets	-	131	-	(51)	-	(80)	-
Other ⁴	-	-	-	(4,165)	-	4,165	0.05
Tax on adjustments	-	-	-	-	2,874	(2,874)	(0.03)
Total adjustments ⁶	(606)	(4,485)	(3,768)	(1,631)	2,874	7,616	0.09
As adjusted	<u>\$ 288,988</u>	<u>\$ 65,639</u>	<u>\$ -</u>	<u>\$ 10,897</u>	<u>\$ 13,238</u>	<u>\$ 37,284</u>	<u>\$ 0.44</u>

- (1) The adjustments to "Cost of Sales" primarily include environmental costs 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" relate to purchase price adjustments related to an acquisition that is beyond the measurement period.
- (2) The adjustments to "Cost of Sales" primarily include environmental costs 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" relate to a gain recognized on increasing our ownership interest in FMU.
- (3) The adjustments to "Other expense, net" relate to gains and losses on asset sales.
- (4) The adjustments to "Other expense, net" relate to debt extinguishment charges and fees expensed associated with the Amended Credit Facility.
- (5) Income tax expense reflects the reported expense, adjusted for adjustments being tax effected at the respective statutory rate where the item originated.
- (6) 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 Reported Income to Adjusted Income
For the Six Months Ended June 30 (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 ⁵	Net income attributable to common shareholders	Diluted earnings per share
2019							
As reported	\$ 571,336	\$ 143,725	\$ 12,387	\$ 19,576	\$ 9,439	\$ 24,475	\$ 0.29
Adjustments:							
Restructuring	-	-	(12,387)	-	-	12,387	0.15
Acquisition related costs ¹	(396)	(7,728)	-	(768)	-	8,892	0.11
Costs related to optimization projects	(4,286)	(2,635)	-	(50)	-	6,971	0.08
Costs related to divested businesses and assets	-	(806)	-	(139)	-	945	0.01
Other ³	-	-	-	1,237	-	(1,237)	(0.01)
Tax on adjustments	-	-	-	-	5,390	(5,390)	(0.06)
Total adjustments ⁶	(4,682)	(11,169)	(12,387)	280	5,390	22,568	0.28
As adjusted	\$ 566,654	\$ 132,556	\$ -	\$ 19,856	\$ 14,829	\$ 47,043	\$ 0.57
2018							
As reported	\$ 576,440	\$ 143,216	\$ 7,874	\$ 22,904	\$ 17,878	\$ 53,059	\$ 0.62
Adjustments:							
Restructuring	-	-	(7,874)	-	-	7,874	0.09
Acquisition related costs ²	(952)	(5,795)	-	1,819	-	4,928	0.06
Costs related to optimization projects	(633)	(2,365)	-	-	-	2,998	0.04
Costs related to divested businesses and assets	-	(384)	-	(89)	-	473	0.01
Other ⁴	-	-	-	(4,165)	-	4,165	0.05
Tax on adjustments	-	-	-	-	5,267	(5,267)	(0.06)
Total adjustments ⁶	(1,585)	(8,544)	(7,874)	(2,435)	5,267	15,171	0.18
As adjusted	\$ 574,855	\$ 134,672	\$ -	\$ 20,469	\$ 23,145	\$ 68,230	\$ 0.80

- (1) The adjustments to "Cost of Sales" primarily include the amortization of purchase accounting adjustments related to our recent acquisitions and environmental costs 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" relate to purchase price adjustments related to an acquisition that is beyond the measurement period.
- (2) The adjustments to "Cost of Sales" primarily include environmental costs 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" relate to earn out adjustments related to an acquisition that are beyond the measurement period and a gain recognized on increasing our ownership interest in FMU.
- (3) The adjustments to "Other expense, net" relate to gains and losses on asset sales.
- (4) The adjustments to "Other expense, net" relate to debt extinguishment charges and fees expensed associated with the Amended Credit Facility.
- (5) Income tax expense reflects the reported expense, adjusted for adjustments being tax effected at the respective statutory rate where the item originated.
- (6) 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 7
Ferro Corporation and Subsidiaries
Supplemental Information
Reconciliation of Adjusted Gross Profit

(Dollars in thousands)

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Performance Coatings	\$ 178,232	\$ 193,449	\$ 348,579	\$ 378,097
Performance Colors and Glass	118,404	126,027	239,249	246,532
Color Solutions	97,266	96,763	193,622	197,142
Total net sales	\$ 393,902	\$ 416,239	\$ 781,450	\$ 821,771
Total net sales	\$ 393,902	\$ 416,239	\$ 781,450	\$ 821,771
Adjusted cost of sales ¹	282,001	288,988	566,654	574,855
Adjusted gross profit	\$ 111,901	\$ 127,251	\$ 214,796	\$ 246,916
Adjusted gross profit percentage	28.4%	30.6%	27.5%	30.0%

- (1) Refer to Table 5 for the reconciliation of adjusted cost of sales for the three months ended June 30, 2019 and 2018, respectively. Refer to Table 6 for the reconciliation of adjusted cost of sales for the six months ended June 30, 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 8
Ferro Corporation and Subsidiaries
Supplemental Information
Constant Currency Schedule of Adjusted Operating Profit (unaudited)

(Dollars in thousands)	Three Months Ended June 30,			
	2018	Adjusted 2018 ¹	2019	2019 vs Adjusted 2018
Segment net sales				
Performance Coatings	\$ 193,449	\$ 186,527	\$ 178,232	\$ (8,295)
Performance Colors and Glass	126,027	121,605	118,404	(3,201)
Color Solutions	96,763	93,858	97,266	3,408
Total segment net sales	<u>\$ 416,239</u>	<u>\$ 401,990</u>	<u>\$ 393,902</u>	<u>\$ (8,088)</u>
Segment adjusted gross profit				
Performance Coatings	\$ 50,205	\$ 48,243	\$ 40,932	\$ (7,311)
Performance Colors and Glass	45,366	43,822	39,852	(3,970)
Color Solutions	31,904	31,083	30,770	(313)
Other costs of sales	(224)	(211)	347	558
Total adjusted gross profit ²	<u>\$ 127,251</u>	<u>\$ 122,937</u>	<u>\$ 111,901</u>	<u>\$ (11,036)</u>
Adjusted selling, general and administrative expenses				
Strategic services	\$ 39,581	\$ 38,018	\$ 38,338	\$ 320
Functional services	22,101	21,742	21,906	164
Incentive compensation	2,531	2,462	179	(2,283)
Stock-based compensation	1,426	1,426	2,876	1,450
Total adjusted selling, general and administrative expenses ³	<u>\$ 65,639</u>	<u>\$ 63,648</u>	<u>\$ 63,299</u>	<u>\$ (349)</u>
Adjusted operating profit	<u>\$ 61,612</u>	<u>\$ 59,289</u>	<u>\$ 48,602</u>	<u>\$ (10,687)</u>
Adjusted operating profit as a % of net sales	14.8%	14.7%	12.3%	

(1) 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.

(2) Refer to Table 7 for the reconciliation of adjusted gross profit for the three months ended June 30, 2019 and 2018, respectively.

(3) Refer to Table 5 for the reconciliation of adjusted SG&A expenses for the three months ended June 30, 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 7. 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
Constant Currency Schedule of Adjusted Operating Profit (unaudited)

(Dollars in thousands)	Six Months Ended June 30,			
	2018	Adjusted 2018 ¹	2019	2019 vs Adjusted 2018
Segment net sales				
Performance Coatings	\$ 378,097	\$ 360,441	\$ 348,579	\$ (11,862)
Performance Colors and Glass	246,532	236,323	239,249	2,926
Color Solutions	197,142	190,085	193,622	3,537
Total segment net sales	\$ 821,771	\$ 786,849	\$ 781,450	\$ (5,399)
Segment adjusted gross profit				
Performance Coatings	\$ 93,929	\$ 89,330	\$ 74,782	\$ (14,548)
Performance Colors and Glass	88,694	85,060	79,369	(5,691)
Color Solutions	64,643	62,679	60,112	(2,567)
Other costs of sales	(350)	(347)	533	880
Total adjusted gross profit²	\$ 246,916	\$ 236,722	\$ 214,796	\$ (21,926)
Adjusted selling, general and administrative expenses				
Strategic services	\$ 80,680	\$ 76,873	\$ 78,556	\$ 1,683
Functional services	44,646	43,727	46,801	3,074
Incentive compensation	5,490	5,292	1,554	(3,738)
Stock-based compensation	3,856	3,856	5,645	1,789
Total adjusted selling, general and administrative expenses³	\$ 134,672	\$ 129,748	\$ 132,556	\$ 2,808
Adjusted operating profit	\$ 112,244	\$ 106,974	\$ 82,240	\$ (24,734)
Adjusted operating profit as a % of net sales	13.7%	13.6%	10.5%	

- (1) 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 6 for Non-GAAP adjustments applicable to the six month period.
- (2) Refer to Table 7 for the reconciliation of adjusted gross profit for the six months ended June 30, 2019 and 2018, respectively.
- (3) Refer to Table 6 for the reconciliation of adjusted SG&A expenses for the six months ended June 30, 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 6 and Table 7. 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
Reconciliation of Net income attributable to Ferro Corporation
common shareholders to Adjusted EBITDA (unaudited)

(Dollars in thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Net income attributable to Ferro Corporation common shareholders	\$ 10,871	\$ 29,668	\$ 24,475	\$ 53,059
Net income attributable to noncontrolling interests	238	193	512	400
Restructuring and impairment charges	10,260	3,768	12,387	7,874
Other expense, net	1,590	4,328	2,516	6,742
Interest expense	8,515	8,200	17,060	16,162
Income tax expense	5,139	10,364	9,439	17,878
Depreciation and amortization	14,998	14,477	30,162	28,739
Less: interest amortization expense and other	(912)	(903)	(1,812)	(1,773)
Cost of sales adjustments ¹	3,643	606	4,682	1,585
SG&A adjustments ¹	8,346	4,485	11,169	8,544
Adjusted EBITDA	\$ 62,688	\$ 75,186	\$ 110,590	\$ 139,210
Net sales	\$ 393,902	\$ 416,239	\$ 781,450	\$ 821,771
Adjusted EBITDA as a % of net sales	15.9%	18.1%	14.2%	16.9%

(1) For details of Non-GAAP adjustments, refer to Table 5 and Table 6 for the reconciliation of adjusted cost of sales and adjusted SG&A for the three and six months ended June 30, 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 11
Ferro Corporation and Subsidiaries
Supplemental Information
Change in Net Debt (unaudited)

(Dollars in thousands)

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Beginning of period				
Gross debt	\$ 875,189	\$ 815,930	\$ 826,224	\$ 759,078
Cash	57,637	53,296	104,301	63,551
Debt, net of cash	817,552	762,634	721,923	695,527
Unamortized debt issuance costs	4,592	7,163	4,827	7,451
Debt, net of cash and unamortized debt issuance costs	812,960	755,471	717,096	688,076
End of period				
Gross debt	872,184	846,039	872,184	846,039
Cash	51,311	44,886	51,311	44,886
Debt, net of cash	820,873	801,153	820,873	801,153
Unamortized debt issuance costs	4,356	5,285	4,356	5,285
Debt, net of cash and unamortized debt issuance costs	816,517	795,868	816,517	795,868
Change from FX on Euro term loan	-	2,258	-	(5,657)
Unamortized debt issuance costs	(236)	(1,878)	(471)	(2,166)
FX on cash	(39)	(2,296)	338	(1,034)
Period (increase) in debt, net of cash, unamortized debt issuance costs and FX	\$ (3,282)	\$ (38,481)	\$ (99,288)	\$ (98,935)
Period (increase) in debt, net of cash and unamortized debt issuance costs	\$ (3,557)	\$ (40,397)	\$ (99,421)	\$ (107,792)

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 12
Ferro Corporation and Subsidiaries
Supplemental Information
Reconciliation of Net Cash Provided by Operating Activities (GAAP) to
Adjusted Free Cash Flow from Continuing Operations (Non-GAAP) (unaudited)

(Dollars in thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Cash flows from operating activities				
Net income	\$ 11,109	\$ 29,861	\$ 24,987	\$ 53,459
(Gain) loss on sale of assets	(1,383)	59	(1,219)	288
Depreciation and amortization	14,086	13,574	28,350	26,966
Interest amortization	912	903	1,812	1,773
Restructuring and impairment	6,579	3,050	6,758	5,479
Loss on extinguishment of debt	-	3,226	-	3,226
Accounts receivable	(27,097)	(18,107)	(70,830)	(50,764)
Inventories	(2,449)	(36,544)	(15,101)	(65,364)
Accounts payable	(14,792)	5,608	(58,472)	(1,531)
Other current assets and liabilities, net	274	(12,065)	(545)	(18,800)
Other adjustments, net	1,339	7,045	5,311	7,593
Net cash used in operating activities (GAAP)	\$ (11,422)	\$ (3,390)	\$ (78,949)	\$ (37,675)
Less: Capital Expenditures	(14,308)	(22,887)	(37,634)	(43,569)
Plus: Cash collected for AR securitization	21,085	-	41,271	-
Free Cash Flow used in Continuing Operations (Non-GAAP)	(4,645)	(26,277)	(75,312)	(81,244)
Plus: cash used for restructuring	3,681	1,842	5,629	3,520
Plus: cash used for capital expenditures related to optimization projects ⁽¹⁾	6,121	13,694	14,015	19,902
Plus: Cash used for net working capital investment related to optimization projects ⁽²⁾	3,444	-	14,924	2,051
Plus: Cash used for acquisition related professional fees ⁽³⁾	4,986	4,178	7,253	5,003
Plus: Cash used for optimization projects ⁽³⁾	6,010	1,709	7,411	2,998
Plus: Cash used for divested businesses and assets ⁽³⁾	475	(131)	878	384
Plus: Other	(1,725)	-	(1,725)	-
Adjusted Free Cash Flow used in Continuing Operations (Non-GAAP)	18,347	(4,985)	(26,927)	(47,386)
Net Income Attributable to Ferro Corporation Common Shareholders	10,871	29,668	24,475	53,059
Net Cash Provided by Operating Activities Conversion of Net Income Attributable to Ferro Corporation Common Shareholders	-105.1%	-11.4%	-322.6%	-71.0%
Adjusted EBITDA (Non-GAAP) - From Table 10	62,688	75,186	110,590	139,210
Adjusted Free Cash Flow Conversion of Adjusted EBITDA from Continuing Operations (Non-GAAP)	29.3%	-6.6%	-24.3%	-34.0%
Adjusted Free Cash Flow Conversion of Adjusted EBITDA from Continuing Operations, adjusted for AR Securitization impact (Non-GAAP)⁽⁴⁾	32.8%	-6.6%	-27.3%	-34.0%

(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 11 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 June 30, 2019 and 2018, respectively and Table 6 for the six months ended June 30, 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 (\$2.2) million and \$3.2 million for the three and six months ended June 30, 2019, respectively, 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.