

FERRO REPORTS THIRD QUARTER 2018 RESULTS

Strong organic growth and momentum toward Vision 2020 continues.

2018 Third Quarter *

- Net Sales increased 12.9% to \$395.2 million
- Organic sales grew 7.3% on a constant currency basis
- GAAP EPS declined 29.6% to \$0.19, while Adjusted EPS improved 12.1% to \$0.37
- Cash flows from operating activities expanded 267% to \$73.4 million
- Adjusted Free Cash Flow expanded 280% to \$79.1 million
- \$27.5 million of common stock repurchased from the beginning of 2018 through November 7. Board has authorized an additional \$50 million repurchase
- Full year 2018 guidance reaffirmed at lower end of range for Adjusted EPS and Adjusted EBITDA and at upper end of range for Adjusted Free Cash Flow Conversion.



Ferro had a productive third quarter. Along with strong organic growth, we generated robust cash flow and made significant progress on our optimization initiatives.

We took steps to reduce working capital in the quarter, and in the course of doing so demonstrated the cash generation capacity of our businesses. Ferro generated Adjusted Free Cash Flow conversion of 124% and GAAP Cash Flow from Operations of \$73.4 million. Cash generation remains a priority in the fourth quarter also, as we drive toward our full-year cash targets.

We also advanced optimization initiatives, particularly in our operations, investing in production facilities, supply chain efficiencies, technical and customer support, and R&D. Given the progress made, we expect our main optimization initiatives to favorably impact Ferro's Adjusted EBITDA by approximately \$30 million in 2020, with approximately \$8 million of that coming in 2019.

The fundamentals of Ferro are strong, our global teams continue to execute well, and we are on track to achieve or exceed our Vision 2020 goals, even in the context of macroeconomic and geopolitical uncertainties.

Peter Thomas
 Chairman, President and CEO, Ferro Corporation



Key Results * (amounts in millions, except EPS)

Sales and Gross Profits

Net Sales	\$ 395,163	12.9%	\$ 1,216,934	19.4%
Net Sales (Constant Currency)	395,163	16.3%	1,216,934	16.9%
Gross Profit (GAAP)	105,487	1.8%	350,818	12.9%
Adjusted Gross Profit (Constant Currency)	106,592	3.5%	353,508	8.7%

Net Income, EBITDA and EPS

Net Income ¹	\$ 16,058	-29.6%	\$ 69,117	5.1%
Adjusted EBITDA	63,713	8.4%	202,923	13.7%
GAAP diluted EPS	\$ 0.19	-29.6%	\$ 0.81	5.2%
Adjusted EPS	0.37	12.1%	1.17	15.8%

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

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

Third Quarter Commentary

The Company delivered strong revenue growth in the quarter, with both organic and inorganic growth contributing to the results. Demand in end markets was strong and is expected to continue in the fourth quarter.

Ferro significantly increased its Adjusted Free Cash Flow in the third quarter by tightening alignment between sales and plant utilization and satisfying a portion of customer demand with existing inventory. These initiatives generated Net Cash provided by Operating Activities of \$73.4 million and Adjusted Free Cash Flow conversion of 124%, propelling the Company toward the upper end of its full-year cash generation targets.

Ferro's above initiatives to drive cash, together with expected raw material headwinds, resulted in reduced gross margins in the quarter. However, the Company expects gross margins to rebound in the fourth quarter, as raw material prices decrease and Ferro pricing more than offsets any raw material headwinds relative to the prior year quarter for the first time since early 2017.

The cash generation initiatives taken in the third quarter provide the Company with additional levers to achieve its Vision 2020 performance goals. The Company ended the quarter with liquidity of approximately \$510 million.

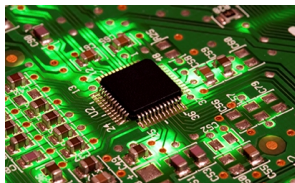
Segment Results * (amounts in millions, except EPS)



Performance Coatings

Net Sales	\$ 175,939	20.3%	\$ 554,036	30.5%
Net Sales (Constant Currency)	175,939	26.2%	554,036	28.8%
Gross Profit (GAAP)	36,257	2.2%	130,319	19.3%
Adjusted Gross Profit (Constant Currency)	36,257	4.2%	130,186	14.5%

	Q3 2018	% Change	YTD	% Change
Net Sales	\$ 175,939	20.3%	\$ 554,036	30.5%
Net Sales (Constant Currency)	175,939	26.2%	554,036	28.8%
Gross Profit (GAAP)	36,257	2.2%	130,319	19.3%
Adjusted Gross Profit (Constant Currency)	36,257	4.2%	130,186	14.5%



Performance Colors & Glass

Net Sales	\$ 123,277	11.5%	\$ 369,809	15.3%
Net Sales (Constant Currency)	123,277	13.5%	369,809	12.1%
Gross Profit (GAAP)	40,095	5.8%	128,785	11.6%
Adjusted Gross Profit (Constant Currency)	40,095	5.5%	128,789	7.1%

	Q3 2018	% Change	YTD	% Change
Net Sales	\$ 123,277	11.5%	\$ 369,809	15.3%
Net Sales (Constant Currency)	123,277	13.5%	369,809	12.1%
Gross Profit (GAAP)	40,095	5.8%	128,785	11.6%
Adjusted Gross Profit (Constant Currency)	40,095	5.5%	128,789	7.1%



Color Solutions

Net Sales	\$ 95,947	3.0%	\$ 293,089	7.0%
Net Sales (Constant Currency)	95,947	4.6%	293,089	4.4%
Gross Profit (GAAP)	30,174	-2.8%	93,864	7.1%
Adjusted Gross Profit (Constant Currency)	31,018	1.3%	95,661	3.8%

	Q3 2018	% Change	YTD	% Change
Net Sales	\$ 95,947	3.0%	\$ 293,089	7.0%
Net Sales (Constant Currency)	95,947	4.6%	293,089	4.4%
Gross Profit (GAAP)	30,174	-2.8%	93,864	7.1%
Adjusted Gross Profit (Constant Currency)	31,018	1.3%	95,661	3.8%

* Comparative information is relative to prior-year third quarter

"Dynamic Innovation and Optimization" and Vision 2020

Ferro continues to progress through the "dynamic innovation and optimization" phase of its strategy and toward achieving the Company's Vision 2020 goals. These goals include 3% – 4% annual organic growth; gross margins of 33% – 34% (achieved in part through 2% annual optimization efficiencies already underway); Adjusted EBITDA margins of at least 20%; and Adjusted Free Cash Flow conversion of 50% – 60%.

“Dynamic Innovation and Optimization” and Vision 2020 continued

Ferro’s innovation and optimization initiatives are broad-based and global. Significant investments are being made in plant efficiency, new equipment and technologies, technical and manufacturing Centers of Excellence, footprint rationalization, integration of acquisitions, and supply chain efficiencies. While certain information regarding these initiatives remains confidential to protect Ferro’s competitive position, management currently expects the most significant of these initiatives to increase Adjusted EBITDA relative to 2018 by approximately \$30 million in 2020, with approximately \$8 million of that being realized in 2019.

Ferro continues to expect to achieve its Vision 2020 performance goals without the benefit of acquisitions; nevertheless, Ferro aims to invest \$100 million - \$150 million in strategic investments each year from 2018 through 2020, adding to the Company’s growth and performance.

Full Year 2018 Guidance

The Company expects full year 2018 Adjusted EPS and Adjusted EBITDA to be at the lower end of the range of guidance and Adjusted Free Cash Flow Conversion to be at the upper end of the range of guidance.

	Adjusted EBITDA	Adjusted EPS	Adjusted Free Cash Flow from Operations Conversion ¹
2018 Guidance	\$270M - \$275M	\$1.55 - \$1.60	40% - 45%

Currency Exposure 2017 Weighting		2018 Guidance FX sensitivity	
		% Change	Operating Profit
EUR - Euro	35% to 40%		
CNY -Yuan Renminbi	5% to 7%	+1% all FX change	~ \$1.4 million to ~\$1.6 million
MXN – Mexican Peso	4% to 6%	+1% Euro change	~\$0.9 million to ~\$1.1 million
EGP – Egyptian Pound	2% to 5%		

The results and guidance in this release, including in the highlights above, contain references to non-GAAP measures from continuing operations. Reconciliations of historical GAAP to non-GAAP results can be found at the end of this release.

¹ Note: Adjusted Free Cash Flow is defined as GAAP Net Cash provided by operating activities, less Capex, plus cash used for restructuring, acquisition-related professional fees, divested businesses and assets, and certain optimization projects (including Capital).

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.

Share Repurchase

During the third quarter, the Company purchased \$11 million of its common stock, or approximately 0.5 million shares. Since the beginning of 2018 through the close of trading on November 7, the Company purchased a total of \$27.5 million of its common stock or approximately 1.4 million shares.

The Company's Board of Directors has approved a new share repurchase program under which the Company is authorized to repurchase up to an additional \$50 million of the Company's outstanding common stock on the open market, including through Rule 10b5-1 plans, in privately negotiated transactions, or otherwise. With this additional program, the Company has a total of approximately \$72.5 million of authorized but unused capacity to repurchase Company stock.

Constant Currency

Constant currency results reflect the remeasurement of 2017 reported and adjusted local currency results using 2018 exchange rates, which reproduces constant currency comparative figures to 2018 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 10:00 a.m. EDT Friday, November 9, 2018. 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 800-909-7944 within the U.S. or +1 212-231-2935 outside the U.S. Please join the call at least 10 minutes before the start time.
- Webcast replay: Available in the Investors section of Ferro's website at ferro.com beginning at approximately 12:00 noon Eastern Time on November 9, 2018
- 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 21891850).
- Presentation material & podcast: Earnings presentation material and podcasts can be accessed through the Investors section 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 5,850 associates globally and reported 2017 sales of \$1.4 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;
- Ferro’s ability to successfully implement and/or administer its optimization initiatives, including its investment and restructuring programs, and to produce the desired results;
- currency conversion rates and economic, social, political, and regulatory conditions in the U.S. and around the world including the impact of tariffs;
- challenges associated with a multi-national company such as Ferro competing lawfully with local competitors in certain regions of the world;
- 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;
- the effectiveness of the Company’s efforts to improve operating margins through sales growth, price increases, productivity gains, and improved purchasing techniques;
- Ferro’s ability to successfully introduce new products and services or enter into new growth markets;
- the impact of damage to, or the interruption, failure or compromise of the Company’s information systems;
- the implementation and operations of business information systems and processes;
- 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;
- the availability of reliable sources of energy and raw materials at a reasonable cost;
- increasingly aggressive domestic and foreign governmental regulation of hazardous and other materials and regulations affecting health, safety and the environment;
- competitive factors, including intense price competition;
- Ferro’s ability to protect its intellectual property, including trade secrets, or to successfully resolve claims of infringement brought against it;
- sale of products and materials into highly regulated industries;
- our ability to address safety, human health, product liability and environmental risks associated with our current and historical products, product life cycle and production processes;
- limited or no redundancy for certain of the Company’s manufacturing facilities and possible interruption of operations at those facilities;
- management of Ferro’s general and administrative expenses;
- 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 effectiveness of strategies to increase Ferro’s return on invested capital, and the short-term impact that acquisitions may have on return on invested capital;

Cautionary Note on Forward-Looking Statements (continued)

- stringent labor and employment laws and relationships with the Company's employees;
- 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;
- the impact of the Tax Cuts and Jobs Act on our business;
- exposure to lawsuits, governmental investigations and proceedings relating to current and historical operations and products;
- risks and uncertainties associated with intangible assets;
- Ferro's borrowing costs could be affected adversely by interest rate increases;
- 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; 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, 2017.

Ferro Corporation

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

(In thousands, except per share amounts)

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2018	2017	2018	2017
Net sales	\$ 395,163	\$ 350,012	\$ 1,216,934	\$ 1,019,199
Cost of sales	289,676	246,396	866,116	708,447
Gross profit	105,487	103,616	350,818	310,752
Selling, general and administrative expenses	64,344	65,941	207,560	188,368
Restructuring and impairment charges	2,561	1,471	10,435	7,713
Other expense (income):				
Interest expense	8,553	7,248	24,715	19,921
Interest earned	(110)	(201)	(497)	(556)
Foreign currency losses, net	2,554	1,021	7,054	5,575
Loss on extinguishment of debt	-	-	3,226	3,905
Miscellaneous expense (income), net	74	(2,182)	(523)	(3,675)
Income before income taxes	27,511	30,318	98,848	89,501
Income tax expense	11,368	7,353	29,246	23,186
Net income	16,143	22,965	69,602	66,315
Less: Net income attributable to noncontrolling interests	85	148	485	575
Net income attributable to Ferro Corporation common shareholders	\$ 16,058	\$ 22,817	\$ 69,117	\$ 65,740
Earnings per share attributable to Ferro Corporation common shareholders:				
Basic earnings per share	0.19	0.27	0.82	0.79
Diluted earnings per share	0.19	0.27	0.81	0.77
Shares outstanding:				
Weighted-average basic shares	83,893	83,735	84,154	83,646
Weighted-average diluted shares	85,162	85,450	85,428	85,174
End-of-period basic shares	83,657	83,798	83,657	83,798

Table 2
Ferro Corporation and Subsidiaries
Segment Net Sales and Gross Profit (unaudited)

(Dollars in thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Segment Net Sales				
Performance Coatings	\$ 175,939	\$ 146,238	\$ 554,036	\$ 424,549
Performance Colors and Glass	123,277	110,578	369,809	320,733
Color Solutions	95,947	93,196	293,089	273,917
Total segment net sales	\$ 395,163	\$ 350,012	\$ 1,216,934	\$ 1,019,199
Segment Gross Profit				
Performance Coatings	\$ 36,257	\$ 35,470	\$ 130,319	\$ 109,205
Performance Colors and Glass	40,095	37,880	128,785	115,385
Color Solutions	30,174	31,044	93,864	87,642
Other costs of sales	(1,039)	(778)	(2,150)	(1,480)
Total gross profit	\$ 105,487	\$ 103,616	\$ 350,818	\$ 310,752
Selling, general and administrative expenses				
Strategic services	\$ 37,084	\$ 34,408	\$ 117,905	\$ 99,081
Functional services	26,388	26,386	79,430	74,454
Incentive compensation	(489)	3,637	5,008	7,932
Stock-based compensation	1,361	1,510	5,217	6,901
Total selling, general and administrative expenses	\$ 64,344	\$ 65,941	\$ 207,560	\$ 188,368

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

(Dollars in thousands)

	September 30, 2018	December 31, 2017
ASSETS		
Current assets		
Cash and cash equivalents	\$ 126,278	\$ 63,551
Accounts receivable, net	381,435	354,416
Inventories	377,555	324,180
Other receivables	70,261	67,137
Other current assets	27,084	16,448
Total current assets	982,613	825,732
Other assets		
Property, plant and equipment, net	353,878	321,742
Goodwill	214,750	195,369
Intangible assets, net	189,689	187,616
Deferred income taxes	102,606	108,025
Other non-current assets	38,423	43,718
Total assets	<u>\$ 1,881,959</u>	<u>\$ 1,682,202</u>
LIABILITIES AND EQUITY		
Current liabilities		
Loans payable and current portion of long-term debt	\$ 9,637	\$ 25,136
Accounts payable	217,266	211,711
Accrued payrolls	38,855	48,201
Accrued expenses and other current liabilities	78,809	70,151
Total current liabilities	344,567	355,199
Other liabilities		
Long-term debt, less current portion	923,640	726,491
Postretirement and pension liabilities	159,895	166,680
Other non-current liabilities	65,856	77,152
Total liabilities	1,493,958	1,325,522
Equity		
Total Ferro Corporation shareholders' equity	379,029	344,814
Noncontrolling interests	8,972	11,866
Total liabilities and equity	<u>\$ 1,881,959</u>	<u>\$ 1,682,202</u>

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

(Dollars in thousands)

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2018	2017	2018	2017
Cash flows from operating activities				
Net income	\$ 16,143	\$ 22,965	\$ 69,602	\$ 66,315
Loss (gain) on sale of assets	197	(2,499)	485	(1,214)
Depreciation and amortization	13,272	12,884	40,238	36,040
Interest amortization	911	943	2,684	2,375
Restructuring and impairment	(1,202)	(245)	4,277	3,629
Loss on extinguishment of debt	-	-	3,226	3,905
Accounts receivable	14,325	3,231	(36,439)	(44,952)
Inventories	6,531	(2,720)	(58,833)	(31,379)
Accounts payable	12,634	(13,541)	11,103	581
Other current assets and liabilities, net	1,469	(6,544)	(17,331)	(11,655)
Other adjustments, net	9,081	5,512	16,674	11,046
Net cash provided by operating activities	73,361	19,986	35,686	34,691
Cash flows from investing activities				
Capital expenditures for property, plant and equipment and other long lived assets	(20,585)	(13,240)	(64,154)	(30,134)
Proceeds from sale of equity method investment	-	2,268	-	2,268
Business acquisitions, net of cash acquired	(42,882)	(57,178)	(47,802)	(71,930)
Other investing activities	6	406	37	551
Net cash used in investing activities	(63,461)	(67,744)	(111,919)	(99,245)
Cash flows from financing activities				
Net (repayments) under loans payable	(15,354)	(5,158)	(17,182)	(10,803)
Proceeds from revolving credit facility - 2014 Credit Facility	-	-	-	15,628
Principal payments on revolving credit facility - 2014 Credit Facility	-	-	-	(327,183)
Principal payments on term loan facility - 2014 Credit Facility	-	-	-	(243,250)
Proceeds from term loan facility - Credit Facility	-	-	-	623,827
Principal payments on term loan facility - Credit Facility	-	(1,636)	(304,060)	(3,232)
Principal payments on term loan facility - Amended Credit Facility	(2,050)	-	(4,100)	-
Proceeds from revolving credit facility - Credit Facility	-	69,787	134,950	69,787
Principal payments on revolving credit facility - Credit Facility	-	(42,400)	(212,950)	(42,400)
Proceeds from revolving credit facility - Amended Credit Facility	167,443	-	168,023	-
Principal payments on revolving credit facility - Amended Credit Facility	(56,090)	-	(56,090)	-
Proceeds from term loan facility - Amended Credit Facility	-	-	466,075	-
Principal payments on other long-term debt	-	(2,978)	-	(2,978)
Proceeds on other long-term debt	-	2,700	-	2,700
Payment of debt issuance costs	-	-	(3,466)	(12,927)
Acquisition related contingent consideration payment	(9,116)	(1,315)	(9,464)	(1,315)
Purchase of treasury stock	(10,985)	-	(16,999)	-
Other financing activities	(1,129)	1,112	(3,516)	182
Net cash provided by financing activities	72,719	20,112	141,221	68,036
Effect of exchange rate changes on cash and cash equivalents	(1,227)	991	(2,261)	3,147
Increase (decrease) in cash and cash equivalents	81,392	(26,655)	62,727	6,629
Cash and cash equivalents at beginning of period	44,886	78,866	63,551	45,582
Cash and cash equivalents at end of period	\$ 126,278	\$ 52,211	\$ 126,278	\$ 52,211
Cash paid during the period for:				
Interest	\$ 8,407	\$ 5,880	\$ 24,857	\$ 20,594
Income taxes	\$ 3,199	\$ 7,106	\$ 17,577	\$ 16,619

Table 5
Ferro Corporation and Subsidiaries
Supplemental Information
Reconciliation of Reported Income to Adjusted Income
For the Three Months Ended September 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 ³	Net income attributable to common shareholders	Diluted earnings per share
2018							
As reported	\$ 289,676	\$ 64,344	\$ 2,561	\$ 11,071	\$ 11,368	\$ 16,058	\$ 0.19
Special items:							
Restructuring	-	-	(2,561)	-	-	2,561	0.03
Acquisition related professional fees	(789)	(5,684)	-	-	-	6,473	0.08
Costs related to optimization projects	(316)	(2,509)	-	-	-	2,825	0.03
Other ¹	-	-	-	(1,255)	-	1,255	0.01
Tax on special items	-	-	-	-	(2,405)	2,405	0.03
Total special items ⁴	(1,105)	(8,193)	(2,561)	(1,255)	(2,405)	15,519	0.18
As adjusted	<u>\$ 288,571</u>	<u>\$ 56,151</u>	<u>\$ -</u>	<u>\$ 9,816</u>	<u>\$ 8,963</u>	<u>\$ 31,577</u>	<u>\$ 0.37</u>
2017							
As reported	\$ 246,396	\$ 65,941	\$ 1,471	\$ 5,886	\$ 7,353	\$ 22,817	\$ 0.27
Special items:							
Restructuring	-	-	(1,471)	-	-	1,471	0.02
Acquisition related professional fees	(1,230)	(4,903)	-	-	-	6,133	0.07
Costs related to optimization projects	(135)	(586)	-	-	-	721	0.01
Costs related to divested businesses and assets	-	(1,364)	-	-	-	1,364	0.02
Other ²	-	-	-	2,272	-	(2,272)	(0.03)
Tax on special items	-	-	-	-	2,384	(2,384)	(0.03)
Total special items ⁴	(1,365)	(6,853)	(1,471)	2,272	2,384	5,033	0.06
As adjusted	<u>\$ 245,031</u>	<u>\$ 59,088</u>	<u>\$ -</u>	<u>\$ 8,158</u>	<u>\$ 9,737</u>	<u>\$ 27,850</u>	<u>\$ 0.33</u>

- (1) The adjustments to "Other expense, net" primarily relate to impacts of currency related items in Argentina.
- (2) The adjustments to "Other expense, net" primarily relate to a gain on purchase of an equity method investment.
- (3) The tax rate reflects the reported tax rate, adjusted for special items being tax effected at the respective statutory rate where the item originated.
- (4) Due to rounding, total earnings per share related to special items does not always add to the total adjusted earnings per share.

It should be noted that adjusted 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 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 Nine Months Ended September 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 ³	Net income attributable to common shareholders	Diluted earnings per share
	2018						
As reported	\$ 866,116	\$ 207,560	\$ 10,435	\$ 33,975	\$ 29,246	\$ 69,117	\$ 0.81
Special items:							
Restructuring	-	-	(10,435)	-	-	10,435	0.12
Acquisition related professional fees	(1,741)	(11,479)	-	-	-	13,220	0.15
Costs related to optimization projects	(949)	(4,874)	-	-	-	5,823	0.07
Costs related to divested businesses and assets	-	(384)	-	-	-	384	-
Other ¹	-	-	-	(3,690)	-	3,690	0.04
Tax on special items	-	-	-	-	2,862	(2,862)	(0.03)
Total special items ⁴	(2,690)	(16,737)	(10,435)	(3,690)	2,862	30,690	0.35
As adjusted	\$ 863,426	\$ 190,823	\$ -	\$ 30,285	\$ 32,108	\$ 99,807	\$ 1.17
	2017						
As reported	\$ 708,447	\$ 188,368	\$ 7,713	\$ 25,170	\$ 23,186	\$ 65,740	\$ 0.77
Special items:							
Restructuring	-	-	(7,713)	-	-	7,713	0.09
Acquisition related professional fees	(5,317)	(11,260)	-	-	-	16,577	0.19
Costs related to optimization projects	(246)	(1,017)	-	-	-	1,263	0.01
Costs related to divested businesses and assets	(70)	(2,149)	-	-	-	2,219	0.03
Other ²	-	-	-	(3,061)	-	3,061	0.04
Tax on special items	-	-	-	-	10,922	(10,922)	(0.13)
Total special items ⁴	(5,633)	(14,426)	(7,713)	(3,061)	10,922	19,911	0.23
As adjusted	\$ 702,814	\$ 173,942	\$ -	\$ 22,109	\$ 34,108	\$ 85,651	\$ 1.01

- (1) The adjustments to "Other expense, net" primarily relate to impacts of currency related items in Argentina, debt extinguishment charges, fees expensed associated with the Amended Credit Facility, a gain recognized on increasing our ownership interest in FMU, earn out adjustments for acquisitions and other acquisition related costs.
- (2) The adjustments to "Other expense, net" primarily relate to the FX loss incurred on our Euro-denominated term loan, a loss on an equity method investment, the loss/gain on an asset sale, debt extinguishment costs, a reduction of a contingent liability in Argentina and a gain on purchase of an equity method investment.
- (3) The tax rate reflects the reported tax rate, adjusted for special items being tax effected at the respective statutory rate where the item originated.
- (4) Due to rounding, total earnings per share related to special items does not always add to the total adjusted earnings per share.

It should be noted that adjusted 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 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 September 30,			
	2017	Adjusted 2017 ¹	2018	2018 vs Adjusted 2017
Segment net sales				
Performance Coatings	\$ 146,238	\$ 139,441	\$ 175,939	\$ 36,498
Performance Colors and Glass	110,578	108,609	123,277	14,668
Color Solutions	93,196	91,753	95,947	4,194
Total segment net sales	\$ 350,012	\$ 339,803	\$ 395,163	\$ 55,360
Segment adjusted gross profit				
Performance Coatings	\$ 35,866	\$ 34,807	\$ 36,257	\$ 1,450
Performance Colors and Glass	38,633	38,004	40,095	2,091
Color Solutions	31,044	30,633	31,018	386
Other costs of sales	(562)	(482)	(778)	(296)
Total adjusted gross profit²	\$ 104,981	\$ 102,962	\$ 106,592	\$ 3,631
Adjusted selling, general and administrative expenses				
Strategic services	\$ 33,674	\$ 32,879	\$ 36,313	\$ 3,434
Functional services	20,267	19,592	18,966	(626)
Incentive compensation	3,637	3,569	(489)	(4,058)
Stock-based compensation	1,510	1,510	1,361	(149)
Total adjusted selling, general and administrative expenses³	\$ 59,088	\$ 57,550	\$ 56,151	\$ (1,399)
Adjusted operating profit	\$ 45,893	\$ 45,412	\$ 50,441	\$ 5,030
Adjusted operating profit as a % of net sales	13.1%	13.4%	12.8%	

- (1) Reflects the remeasurement of 2017 reported and adjusted local currency results using 2018 exchange rates, resulting in constant currency comparative figures to 2018 reported and adjusted results. See Table 5 for non-GAAP adjustments applicable to the three month period.
- (2) Refer to Table 5 for the reconciliation of adjusted gross profit for the three months ended September 30, 2018 and 2017, respectively.
- (3) Refer to Table 5 for the reconciliation of SG&A expenses to adjusted SG&A expenses for the three months ended September 30, 2018 and 2017, respectively.

It should be noted that adjusted 2017 results 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 measures is presented. We believe this data provides investors with additional 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)	Nine Months Ended September 30,			
	2017	Adjusted 2017 ¹	2018	2018 vs Adjusted 2017
Segment net sales				
Performance Coatings	\$ 424,549	\$ 430,201	\$ 554,036	\$ 123,835
Performance Colors and Glass	320,733	329,970	369,809	39,839
Color Solutions	273,917	280,693	293,089	12,396
Total segment net sales	\$ 1,019,199	\$ 1,040,864	\$ 1,216,934	\$ 176,070
Segment adjusted gross profit				
Performance Coatings	\$ 110,244	\$ 113,663	\$ 130,186	\$ 16,523
Performance Colors and Glass	116,923	120,242	128,789	8,547
Color Solutions	90,306	92,184	95,661	3,477
Other costs of sales	(1,088)	(960)	(1,128)	(168)
Total adjusted gross profit²	\$ 316,385	\$ 325,129	\$ 353,508	\$ 28,379
Adjusted selling, general and administrative expenses				
Strategic services	\$ 97,974	\$ 101,545	\$ 116,993	\$ 15,448
Functional services	61,135	60,826	63,612	2,786
Incentive compensation	7,932	8,099	5,001	(3,098)
Stock-based compensation	6,901	6,901	5,217	(1,684)
Total adjusted selling, general and administrative expenses³	\$ 173,942	\$ 177,371	\$ 190,823	\$ 13,452
Adjusted operating profit	\$ 142,443	\$ 147,758	\$ 162,685	\$ 14,927
Adjusted operating profit as a % of net sales	14.0%	14.2%	13.4%	

- (1) Reflects the remeasurement of 2017 reported and adjusted local currency results using 2018 exchange rates, resulting in constant currency comparative figures to 2018 reported and adjusted results. See Table 6 for non-GAAP adjustments applicable to the nine month period.
- (2) Refer to Table 6 for the reconciliation of adjusted gross profit for the nine months ended September 30, 2018 and 2017, respectively.
- (3) Refer to Table 6 for the reconciliation of SG&A expenses to adjusted SG&A expenses for the nine months ended September 30, 2018 and 2017, respectively.

It should be noted that adjusted 2017 results 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 measures is presented. We believe this data provides investors with additional 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
Reconciliation of Net income attributable to Ferro Corporation
common shareholders to Adjusted EBITDA (unaudited)

(Dollars in thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net income attributable to Ferro Corporation common shareholders	\$ 16,058	\$ 22,817	\$ 69,117	\$ 65,740
Net income attributable to noncontrolling interests	85	148	485	575
Restructuring and impairment charges	2,561	1,471	10,435	7,713
Other expense (income), net	2,518	(1,362)	9,260	5,249
Interest expense	8,553	7,248	24,715	19,921
Income tax expense	11,368	7,353	29,246	23,186
Depreciation and amortization	14,183	13,827	42,922	38,415
Less: interest amortization expense and other	(911)	(943)	(2,684)	(2,375)
Cost of sales adjustments ¹	1,105	1,365	2,690	5,633
SG&A adjustments ¹	8,193	6,853	16,737	14,426
Adjusted EBITDA	<u>\$ 63,713</u>	<u>\$ 58,777</u>	<u>\$ 202,923</u>	<u>\$ 178,483</u>
Net sales	\$ 395,163	\$ 350,012	\$ 1,216,934	\$ 1,019,199
Adjusted EBITDA as a % of net sales	16.1%	16.8%	16.7%	17.5%

- (1) For details of Non-GAAP adjustments, refer to Table 5 and Table 6 for the reconciliation of cost of sales to adjusted cost of sales and SG&A to adjusted SG&A for the three and nine months ended September 30, 2018 and 2017, 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 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
Change in Net Debt (unaudited)

(Dollars in thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Beginning of period				
Gross debt	\$ 846,039	\$ 668,993	\$ 759,078	\$ 578,205
Cash	44,886	78,866	63,551	45,582
Debt, net of cash	801,153	590,127	695,527	532,623
Unamortized debt issuance costs	5,285	8,079	7,451	3,720
Debt, net of cash and unamortized debt issuance costs	795,868	582,048	688,076	528,903
End of period				
Gross debt	938,340	699,684	938,340	699,684
Cash	126,278	52,211	126,278	52,211
Debt, net of cash	812,062	647,473	812,062	647,473
Unamortized debt issuance costs	5,063	7,743	5,063	7,743
Debt, net of cash and unamortized debt issuance costs	806,999	639,730	806,999	639,730
Change from FX on Euro term loan debt	-	(9,646)	(5,657)	(28,878)
FX on Cash	(1,227)	991	(2,261)	3,147
Assumption of debt from acquisitions	-	-	-	(7,975)
Period increase in debt, net of cash, unamortized debt issuance costs and FX	\$ (9,682)	\$ (48,691)	\$ (108,617)	\$ (81,144)
Period increase in debt, net of cash and unamortized debt issuance costs	\$ (11,131)	\$ (57,682)	\$ (118,923)	\$ (110,827)

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 that given the significant cash and cash equivalents on the balance sheet that the change in cash against outstanding debt, net debt, between periods is a meaningful measure.

Table 11
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 September		Nine Months Ended September	
	2018	2017	2018	2017
Cash flows from operating activities				
Net income	\$ 16,143	\$ 22,965	\$ 69,602	\$ 66,315
Loss (gain) on sale of assets	197	(2,499)	485	(1,214)
Depreciation and amortization	13,272	12,884	40,238	36,040
Interest amortization	911	943	2,684	2,375
Restructuring and impairment	(1,202)	(245)	4,277	3,629
Loss on extinguishment of debt	-	-	3,226	3,905
Accounts receivable	14,325	3,231	(36,439)	(44,952)
Inventories	6,531	(2,720)	(58,833)	(31,379)
Accounts payable	12,634	(13,541)	11,103	581
Other current assets and liabilities, net	1,469	(6,544)	(17,331)	(11,655)
Other adjustments, net	9,081	5,512	16,674	11,046
Net cash provided by operating activities (GAAP)	\$ 73,361	\$ 19,986	\$ 35,686	\$ 34,691
Less: Capital Expenditures	(20,585)	(13,240)	(64,154)	(30,134)
Free Cash Flow provided by (used in) Continuing Operations (Non-GAAP)	52,776	6,746	(28,468)	4,557
Plus: cash used for restructuring	2,638	1,717	6,158	4,084
Plus: cash used for capital expenditures related to optimization projects ⁽¹⁾	11,885	2,464	31,787	7,875
Plus: Cash used for net working capital investment related to optimization projects ⁽²⁾	3,372	2,173	5,423	2,173
Plus: Cash used for acquisition related professional fees ⁽³⁾	5,591	5,585	10,297	9,797
Plus: Cash used for optimization projects ⁽³⁾	2,825	721	5,823	1,263
Plus: Cash used for divested businesses and assets ⁽³⁾	-	1,398	384	2,149
Adjusted Free Cash Flow from Continuing Operations (Non-GAAP)	<u>79,087</u>	<u>20,804</u>	<u>31,404</u>	<u>31,898</u>
Net Income Attributable to Ferro Corporation Common Shareholders	16,058	22,817	69,117	65,740
Net Cash Provided by Operating Activities Conversion of Net Income Attributable to Ferro Corporation Common Shareholders	456.9%	87.6%	51.6%	52.8%
Adjusted EBITDA (Non-GAAP) - From Table 9	63,713	58,777	202,923	178,483
Adjusted Free Cash Flow Conversion of Adjusted EBITDA from Continuing Operations (Non-GAAP)	124.1%	35.4%	15.5%	17.9%

- (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 10 for the reconciliation of period change in debt, net of cash, unamortized debt issuance costs, FX and assumption of debt from acquisitions.
- (2) The adjustment to net working capital represents spend for the build in inventory related to optimization projects 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) acquisitions 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 adjustments in Table 5 and Table 6 for the three and nine months ended September 30, 2018 and 2017, respectively.

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 (GAAP). The non-GAAP financial measures should be considered as a supplement to, and not as a substitute for, the financial measures prepared in accordance with GAAP and a reconciliation of the financial measures to the most comparable U.S. GAAP financial measures is presented. We believe this data provides investors with additional information on the underlying operations and trends of the business, and enables period-to-period comparability of the financial performance of the business. Additionally, certain elements of these measures are used in the calculation of certain incentive compensation programs for management.