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## FERRO UPDATES FULL-YEAR 2018 GUIDANCE

### GUIDANCE UPDATE

	2017	2018E	Updated 2018E	
		Guidance <sup>2</sup>	Guidance <sup>3</sup>	Δ from 2017
Revenue	\$1.4B	~\$1.6B	~\$1.6B	~14%
Adjusted EPS	\$1.29	\$1.55 to \$1.60	\$1.45 to \$1.50	12% to 16%
Adjusted EBITDA <sup>4</sup>	\$234	\$270 to \$275	\$257 to \$262	10% to 12%
Free Cash Flow Conversion <sup>1</sup>	38.5%	40% to 45%	45% to 50%	

<sup>1</sup>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).

<sup>2</sup>Note: Guidance provided during 2018, most recently in connection with third quarter 2018 earnings release on November 8, 2018.

<sup>3</sup>Note: Guidance updated as of January 17, 2019.

<sup>4</sup>Note: Adjusted EBITDA in \$ millions

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.

### CEO COMMENTARY

Ferro expects to report full-year 2018 growth in revenue of approximately 14%, growth in adjusted EPS of 12% to 16%, and growth in adjusted EBITDA of 10% to 12%. Ferro also expects to report cash flow conversion of 45% to 50%. These expected results are estimates and subject to change as Ferro finalizes its financial statements for the year ended December 31, 2018.

“Ferro anticipates reporting solid gains in financial performance for full year 2018 relative to 2017. While we believe the improvement in our financial performance compares favorably to our industry peer group, we expect adjusted EBITDA and adjusted EPS to come in below the targets we set for 2018, so we are revising our full-year guidance on these metrics,” said Peter Thomas, Chairman, President and CEO. “We expect to report strong cash flow conversion, above our previous guidance range.”

“Mix and customer order patterns negatively impacted margins during the fourth quarter of 2018. We experienced significantly more seasonal destocking by customers of our higher-margin Tile products than we anticipated. Also, capacity utilization and footprint optimization initiatives at certain of our European facilities resulted in orders for Performance Colors and Glass products being pushed into 2019. These were the primary factors that led to the change in our full-year guidance.”

Mr. Thomas continued: “Mindful of market conditions and macroeconomic uncertainties, we expect to see some near-term pressure within our Pigments business due to softness in architectural coatings and automotive markets. We also expect slower economic growth in 2019 than in 2018, which we already are seeing in certain European markets. We expect these circumstances, together with our updated guidance for 2018, to cause us to lower our organic earnings expectations for 2019 relative to the expectations we expressed during our third quarter 2018 earnings call. We plan to discuss 2019 guidance during our fourth quarter 2018 earnings conference call.”

## CEO COMMENTARY (continued)

“Meanwhile, we continue to execute optimization initiatives to enable Ferro to deliver stronger performance even if there is softness in certain markets. For example, worldwide we have consolidated six manufacturing facilities over the past two years, and we expect to consolidate an additional seven manufacturing facilities by the end of 2019 or early in 2020. We are making good progress on these initiatives, which already have been announced to our employees, including most recently last week at sites impacted by our America’s manufacturing optimization initiative. This initiative, as we previously have said, is expected to contribute to adjusted EBITDA of at least \$8 million in 2019 and approximately \$30 million by the end of 2020.”

“Also, the Company has approximately \$70 million of authorized but unused capacity to repurchase Company stock.”

### 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 5,850 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:

- the finalization of Ferro’s financial statements as of and for the year ended December 31, 2018;
- 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;
- 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**

### **Investor Contact:**

Kevin Cornelius Grant, 216.875.5451

Head of Investor Relations

[kevincornelius.grant@ferro.com](mailto:kevincornelius.grant@ferro.com)

or

### **Media Contact:**

Mary Abood, 216.875.5401

Director, Corporate Communications

[mary.abood@ferro.com](mailto:mary.abood@ferro.com)

**Table 1**  
**Ferro Corporation and Subsidiaries**  
**Consolidated Statements of Operations**

(Dollars in thousands, except per share amounts)

Twelve Months Ended  
December 31, 2017

<b>Net sales</b>	\$	1,396,742
Cost of sales		980,521
Gross profit		416,221
Selling, general and administrative expenses		258,604
Restructuring and impairment charges		11,409
Other expense (income):		
Interest expense		27,754
Interest earned		(901)
Foreign currency losses, net		6,554
Loss on extinguishment of debt		3,905
Miscellaneous (income), net		(1,622)
<b>Income before income taxes</b>		110,518
Income tax expense		52,750
<b>Net income</b>		57,768
Less: Net income attributable to noncontrolling interests		714
<b>Net income attributable to Ferro Corporation common shareholders</b>	\$	<b>57,054</b>
<b>Earnings per share attributable to Ferro Corporation common shareholders:</b>		
Basic earnings:	\$	0.68
Diluted earnings:	\$	0.67
Shares outstanding:		
Weighted-average basic shares		83,713
Weighted-average diluted shares		85,156
End-of-period basic shares		84,049

**Table 2**  
**Ferro Corporation and Subsidiaries**  
**Supplemental Information**  
**Reconciliation of Reported Income to Adjusted Income**  
**For the Twelve Months Ended December 31, 2017 (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
	2017						
As reported	\$ 980,521	\$ 258,604	\$ 11,409	\$ 35,690	\$ 52,750	\$ 57,054	\$ 0.67
Special items:							
Restructuring	—	—	(11,409)	—	—	11,409	0.13
Pension <sup>1</sup>	603	3,249	—	—	—	(3,852)	(0.05)
Acquisition related professional fees	(7,508)	(16,359)	—	—	—	23,867	0.28
Costs related to optimization projects	(1,196)	(2,528)	—	—	—	3,724	0.04
Costs related to divested businesses and assets	(70)	(2,693)	—	—	—	2,763	0.03
Other <sup>2</sup>	—	—	—	(3,470)	—	3,470	0.04
Tax on special items	—	—	—	—	(11,780)	11,780	0.14
Total special items <sup>4</sup>	(8,171)	(18,331)	(11,409)	(3,470)	(11,780)	53,161	0.62
As adjusted	<u>\$ 972,350</u>	<u>\$ 240,273</u>	<u>\$ —</u>	<u>\$ 32,220</u>	<u>\$ 40,970</u>	<u>\$ 110,215</u>	<u>\$ 1.29</u>

(1) The adjustments relate to pension and other postretirement benefit mark-to-market adjustments and settlements.

(2) The adjustments to "Other expense, net" primarily relate to acquisition related costs.

(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 3**  
**Ferro Corporation and Subsidiaries**  
**Supplemental Information**  
**Reconciliation of Net income attributable to Ferro Corporation**  
**common shareholders to Adjusted EBITDA (unaudited)**

(Dollars in thousands)

	Twelve Months Ended December 31, 2017	
Net income attributable to Ferro Corporation common shareholders	\$	57,054
Less: Net income attributable to noncontrolling interests		714
Restructuring and impairment charges		11,409
Other expense, net		7,936
Interest expense		27,754
Income tax expense		52,750
Depreciation and amortization		53,581
Less: interest amortization expense and other		(3,496)
Cost of sales adjustments <sup>1</sup>		8,171
SG&A adjustments <sup>1</sup>		18,331
Adjusted EBITDA	\$	<u>234,204</u>
Net sales	\$	1,396,742
Adjusted EBITDA as a % of net sales		16.8%

(1) For details of Non-GAAP adjustments, refer to Table 2 for the reconciliation of cost of sales to adjusted cost of sales and SG&A to adjusted SG&A for the twelve months ended December 31, 2017.

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 4**  
**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)

	Twelve Months Ended December 31, 2017
Cash flows from operating activities	
Net income	\$ 57,768
(Gain) on sale of assets	(852)
Depreciation and amortization	50,085
Interest amortization	3,496
Restructuring and impairment charges	7,593
Loss on extinguishment of debt	3,905
Accounts receivable	(25,852)
Inventories	(46,962)
Accounts payable	26,150
Other current assets and liabilities, net	(29,497)
Other adjustments, net	38,956
Net cash provided by operating activities (GAAP)	<u>\$ 84,790</u>
Less: Capital Expenditures	(50,552)
Free Cash Flow provided by Continuing Operations (Non-GAAP)	<u>34,238</u>
Plus: cash used for restructuring	3,816
Plus: cash used for capital expenditures related to optimization projects <sup>(1)</sup>	16,303
Plus: Cash used for net working capital investment related to optimization projects <sup>(2)</sup>	8,128
Plus: Cash used for acquisition related professional fees <sup>(3)</sup>	18,702
Plus: Cash used for optimization projects <sup>(3)</sup>	2,528
Plus: Cash used for divested businesses and assets <sup>(3)</sup>	2,693
Plus: Other	3,727
Adjusted Free Cash Flow from Continuing Operations (Non-GAAP)	<u>90,135</u>
Net Income Attributable to Ferro Corporation Common Shareholders	57,054
Net Cash Provided by Operating Activities Conversion of Net Income Attributable to Ferro Corporation Common Shareholders	148.6%
Adjusted EBITDA (Non-GAAP)	234,204
Adjusted Free Cash Flow Conversion of Adjusted EBITDA from Continuing Operations (Non-GAAP)	38.5%

- (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.
- (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 2 for the twelve months ended December 31, 2017.

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.