

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended June 30, 2018
Commission file number 1-32737



KOPPERS HOLDINGS INC.

(Exact name of registrant as specified in its charter)

Pennsylvania
(State of incorporation)

20-1878963
(IRS Employer Identification No.)

436 Seventh Avenue
Pittsburgh, Pennsylvania 15219
(Address of principal executive offices)

(412) 227-2001
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

Common Stock, par value \$0.01 per share, outstanding at July 31, 2018 amounted to 21,177,080 shares.

PART I—FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

KOPPERS HOLDINGS INC.

CONDENSED CONSOLIDATED STATEMENT OF OPERATIONS AND COMPREHENSIVE (LOSS) INCOME

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
<i>(Dollars in millions, except per share amounts)</i>				
	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)
Net sales	\$ 436.0	\$ 378.0	\$ 842.1	\$ 724.6
Cost of sales (excluding items below)	352.8	294.6	664.2	569.5
Depreciation and amortization	13.7	11.7	25.5	22.9
Impairment and restructuring charges	1.4	2.1	2.9	3.6
Selling, general and administrative expenses	45.8	31.5	83.9	62.4
Operating profit	22.3	38.1	65.6	66.2
Other (loss) income	(0.7)	0.2	(0.5)	1.7
Interest expense	14.5	10.8	25.0	21.4
Loss on extinguishment of debt	0.0	0.0	0.0	13.3
Income before income taxes	7.1	27.5	40.1	33.2
Income tax provision	6.6	6.6	15.8	7.6
Income from continuing operations	0.5	20.9	24.3	25.6
Income (loss) from discontinued operations, net of tax (expense) benefit of \$(0.3), \$0.6, \$(0.2) and \$0.6	0.5	(1.1)	0.4	(1.2)
Net income	1.0	19.8	24.7	24.4
Net income attributable to noncontrolling interests	0.4	0.1	6.3	0.3
Net income attributable to Koppers	\$ 0.6	\$ 19.7	\$ 18.4	\$ 24.1
Earnings (loss) per common share attributable to Koppers common shareholders:				
Basic -				
Continuing operations	\$ 0.01	\$ 1.00	\$ 0.86	\$ 1.22
Discontinued operations	0.02	(0.06)	0.02	(0.06)
Earnings per basic common share	\$ 0.03	\$ 0.94	\$ 0.88	\$ 1.16
Diluted -				
Continuing operations	\$ 0.01	\$ 0.95	\$ 0.81	\$ 1.15
Discontinued operations	0.02	(0.05)	0.02	(0.06)
Earnings per diluted common share	\$ 0.03	\$ 0.90	\$ 0.83	\$ 1.09
Comprehensive (loss) income	\$ (20.7)	\$ 24.7	\$ (4.5)	\$ 36.9
Comprehensive (loss) income attributable to noncontrolling interests	(0.3)	0.2	5.8	0.4
Comprehensive (loss) income attributable to Koppers	\$ (20.4)	\$ 24.5	\$ (10.3)	\$ 36.5
Weighted average shares outstanding (in thousands):				
Basic	21,138	20,782	21,016	20,752
Diluted	22,054	21,883	22,092	21,898

The accompanying notes are an integral part of these condensed consolidated financial statements.

KOPPERS HOLDINGS INC.
CONDENSED CONSOLIDATED BALANCE SHEET

	June 30, 2018	December 31, 2017
<i>(Dollars in millions, except per share amounts)</i>		
<i>(Unaudited)</i>		
Assets		
Cash and cash equivalents	\$ 62.5	\$ 60.3
Accounts receivable, net of allowance of \$2.3 and \$2.5	216.0	159.2
Income tax receivable	1.7	1.7
Inventories, net	295.9	236.9
Other current assets	33.2	48.6
Total current assets	609.3	506.7
Property, plant and equipment, net	384.5	328.0
Goodwill	296.4	188.2
Intangible assets, net	198.7	129.6
Deferred tax assets	18.1	18.4
Other assets	24.7	29.3
Total assets	\$ 1,531.7	\$ 1,200.2
Liabilities		
Accounts payable	\$ 174.4	\$ 141.9
Accrued liabilities	110.0	127.9
Current maturities of long-term debt	15.3	11.4
Total current liabilities	299.7	281.2
Long-term debt	984.8	665.6
Accrued postretirement benefits	46.5	46.3
Deferred tax liabilities	6.8	7.3
Other long-term liabilities	91.8	94.0
Total liabilities	1,429.6	1,094.4
Commitments and contingent liabilities (Note 18)		
Equity		
Senior Convertible Preferred Stock, \$0.01 par value per share; 10,000,000 shares authorized; no shares issued	0.0	0.0
Common Stock, \$0.01 par value per share; 80,000,000 shares authorized; 22,962,563 and 22,384,476 shares issued	0.2	0.2
Additional paid-in capital	198.7	190.6
Retained earnings	22.2	7.4
Accumulated other comprehensive loss	(65.1)	(40.1)
Treasury stock, at cost, 1,785,483 and 1,606,028 shares	(65.6)	(58.2)
Total Koppers shareholders' equity	90.4	99.9
Noncontrolling interests	11.7	5.9
Total equity	102.1	105.8
Total liabilities and equity	\$ 1,531.7	\$ 1,200.2

The accompanying notes are an integral part of these condensed consolidated financial statements.

KOPPERS HOLDINGS INC.
CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

	Six Months Ended June 30,	
	2018	2017
<i>(Dollars in millions)</i>	<i>(Unaudited)</i>	<i>(Unaudited)</i>
Cash provided by (used in) operating activities:		
Net income	\$ 24.7	\$ 24.4
Adjustments to reconcile net cash provided by (used in) operating activities:		
Depreciation and amortization	25.5	22.9
Loss on extinguishment of debt	0.0	13.3
Loss (gain) on disposal of assets and investment	1.3	(1.4)
Gain on insurance proceeds	(0.7)	0.0
Deferred income taxes	4.4	0.2
Change in other liabilities	(3.7)	(6.7)
Non-cash interest expense	1.2	1.0
Stock-based compensation	6.0	5.0
Other - net	5.4	0.0
Changes in working capital:		
Accounts receivable	(29.4)	(39.2)
Inventories	(26.1)	4.6
Accounts payable	23.0	1.8
Accrued liabilities	(29.0)	8.3
Other working capital	0.5	(2.9)
Net cash provided by operating activities	3.1	31.3
Cash (used in) provided by investing activities:		
Capital expenditures	(53.6)	(34.2)
Acquisitions, net of cash acquired	(264.1)	0.0
Insurance proceeds received	0.7	0.0
Repayments received on loan	0.0	9.5
Net cash provided by divestitures and asset sales	1.5	0.8
Net cash used in investing activities	(315.5)	(23.9)
Cash provided by (used in) financing activities:		
Net increase in revolving credit facility borrowings	235.1	67.4
Borrowings of long-term debt	100.0	500.0
Repayments of long-term debt	(10.4)	(541.4)
Issuances of Common Stock	2.2	1.9
Repurchases of Common Stock	(7.4)	(5.2)
Payment of debt issuance costs	(2.9)	(11.0)
Net cash provided by financing activities	316.6	11.7
Effect of exchange rate changes on cash	(2.0)	0.1
Net increase in cash and cash equivalents	2.2	19.2
Cash and cash equivalents at beginning of period	60.3	20.8
Cash and cash equivalents at end of period	\$ 62.5	\$ 40.0

The accompanying notes are an integral part of these condensed consolidated financial statements.

1. Basis of Presentation

The accompanying unaudited condensed consolidated financial statements and related disclosures have been prepared in accordance with accounting principles generally accepted in the United States applicable to interim financial information and with the instructions to Form 10-Q and Rule 10-01 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all adjustments considered necessary for a fair presentation of Koppers Holdings Inc.'s and its subsidiaries' ("Koppers", "Koppers Holdings" or the "Company") financial position and interim results as of and for the periods presented have been included. All such adjustments are of a normal recurring nature unless disclosed otherwise. Because the Company's business is seasonal, results for interim periods are not necessarily indicative of those that may be expected for a full year. The Condensed Consolidated Balance Sheet for December 31, 2017 has been summarized from the audited balance sheet contained in the Annual Report on Form 10-K for the year ended December 31, 2017. Certain prior period amounts in the notes to the consolidated financial statements have been reclassified to conform to the current period's presentation.

The financial information included herein should be read in conjunction with the Company's audited consolidated financial statements and related notes included in its Annual Report on Form 10-K for the year ended December 31, 2017.

2. New Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)." ASU 2014-09 requires an entity to recognize revenue in a manner that depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Subsequent to the issuance of ASU 2014-09, the FASB issued multiple ASUs which either amended or clarified ASU 2014-09. Collectively, the revenue recognition ASUs were effective for annual reporting periods beginning after December 15, 2017. The Company elected to use the modified retrospective method for transition in which the cumulative effect was recognized at its January 1, 2018 date of adoption with no restatement of comparative periods presented. The implementation of the guidance had no material impact on the measurement of recognition of revenue of prior periods; however, additional disclosures have been added in accordance with the ASU.

In August 2017, the FASB issued ASU No. 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities." This ASU amends and simplifies existing guidance in order to allow companies to more accurately present the economic effects of risk management activities in the financial statements. The Company adopted this ASU effective January 1, 2018 and the Company reclassified a \$3.6 million unrealized gain, net of tax, from retained earnings to accumulated other comprehensive loss upon adoption.

In March 2017, the FASB issued ASU 2017-07, "Compensation – Retirement Benefits (Topic 715)", in order to improve the presentation of net periodic pension and postretirement costs. The amendment requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. The amendments in this update related to income statement activity are applied. As a practical expedient, the Company has used the amounts disclosed in its pension and post-retirement benefits footnote as the estimation basis for applying the retrospective presentation requirements. The Company adopted this ASU effective January 1, 2018, and for retrospective presentation, reclassified \$0.1 and \$0.5 million from cost of goods sold and \$0.4 and \$0.5 million from selling, general and administrative expenses to other income for the three and six months ended June 30, 2017, respectively.

In January 2017, the FASB issued ASU No. 2017-04, "Simplifying the Test for Goodwill Impairment (Topic 350)." The update is intended to simplify how an entity is required to test goodwill for impairment by eliminating Step 2 from the goodwill impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. The amendments in this update are effective for periods beginning after December 15, 2019. Entities are required to apply the amendments in this update prospectively from the date of adoption, with early adoption permitted. The Company adopted this ASU effective January 1, 2018.

In August 2016, the FASB issued ASU No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments." The update clarifies how entities should classify certain cash receipts and cash payments on the statement of cash flow. The amendments in this update are effective for periods beginning after December 15,

2017. The Company adopted this ASU effective January 1, 2018. The impact was not material to the Company's condensed consolidated statement of cash flows.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)." ASU 2016-02 requires an entity to recognize a right-of-use asset and lease liability for all leases with terms of more than one year. Recognition, measurement and presentation of expenses will depend on classification as a finance or operating lease. The standard is effective January 1, 2019 and requires a modified retrospective adoption. The Company has a project team analyzing all of its leases to determine the impact that the adoption of ASU 2016-02 will have on its consolidated financial statements. The Company expects this analysis will be completed during the third quarter of 2018. The Company anticipates that it will result in a significant right-of-use asset and related lease liability to be recognized on the Company's consolidated balance sheet as certain of the Company's manufacturing facilities, offices and equipment are currently categorized as operating leases.

3. Plant Closures and Divestitures

Over the past four years, the Company has been restructuring its Carbon Materials and Chemicals ("CMC") business unit in order to concentrate its facilities in regions where the Company believes it holds key competitive advantages to better serve its global customers. These closure activities include:

- The anticipated cessation of naphthalene refining activities at the Company's Follansbee, West Virginia coal tar distillation facility in the second half of 2018 upon commissioning of a new naphthalene refining plant in Stickney, Illinois.
- In November 2016, the Company sold its 30-percent interest in Tangshan Kailuan Koppers Carbon Chemical Company Limited ("TKK") located in the Hebei Province in China.
- In July 2016, the Company discontinued coal tar distillation activities at its CMC plant located in Clairton, Pennsylvania.
- In March 2016, the Company discontinued production at its 60-percent owned CMC plant located in Tangshan, China.
- In February 2016, the Company ceased coal tar distillation and specialty pitch operations at both of its United Kingdom CMC facilities. In July 2016, the Company sold substantially all of its CMC tar distillation properties and assets in the United Kingdom. In exchange, the Company transferred cash to the buyer and the buyer assumed historical environmental and asset retirement obligations.
- In April 2014, the Company ceased its coal tar distillation activities at its CMC facility located in Uithoorn, the Netherlands.

Other closure and divestiture activity relates to the Company's Railroad Utility Products and Services ("RUPS") business unit. These actions include:

- In October 2016, the Company agreed to a long-term lease of its wood treatment facility in Houston, Texas to a third party.
- In August 2015, the Company closed its RUPS plant located in Green Spring, West Virginia.
- In July 2015, the Company sold the assets of its 50-percent interest in KSA Limited Partnership, a concrete crosstie manufacturer.
- In January 2015, Koppers Inc. sold its RUPS North American utility pole business.

In addition, in 2011, the Company ceased carbon black production at its CMC facility located in Kurnell, Australia. Costs associated with this closure are included in "Income (Loss) from discontinued operations" on the Condensed Consolidated Statement of Operations and Comprehensive (Loss) Income.

Details of the restructuring activities and related reserves are as follows:

<i>(Dollars in millions)</i>	<i>Severance and employee benefits</i>	<i>Environmental remediation</i>	<i>Site demolition</i>	<i>Other</i>	<i>Total</i>
Reserve at December 31, 2016	\$ 1.4	\$ 1.5	\$ 10.0	\$ 3.2	\$ 16.1
Accrual	0.9	2.1	4.7	6.9	14.6
Cost charged against assets	0.0	0.0	0.0	(6.3)	(6.3)
Reversal of accrued charges	(0.3)	0.0	(1.8)	0.0	(2.1)
Cash paid	(0.3)	(1.1)	(2.4)	(1.0)	(4.8)
Currency translation	0.0	0.2	0.1	0.5	0.8
Reserve at December 31, 2017	\$ 1.7	\$ 2.7	\$ 10.6	\$ 3.3	\$ 18.3
Accrual	0.0	0.9	0.8	2.1	3.8
Cost charged against assets	0.0	0.0	0.0	(2.0)	(2.0)
Cash paid	0.0	(2.8)	(4.2)	(0.1)	(7.1)
Currency translation	0.0	(0.1)	0.0	0.0	(0.1)
Reserve at June 30, 2018	\$ 1.7	\$ 0.7	\$ 7.2	\$ 3.3	\$ 12.9

4. Acquisitions

On April 10, 2018, Koppers Inc. acquired Cox Industries, Inc. ("Cox") for net cash consideration of \$201.4 million. The transaction was funded by borrowings on Koppers Inc.'s revolving credit facility discussed in "Note 14 - Debt." Cox was renamed Koppers Utility and Industrial Products Inc. ("UIP") subsequent to the acquisition. UIP is a manufacturer of treated wood transmission and distribution poles for utility companies and cooperative utility companies. It is also a manufacturer of treated wood pilings used for construction and marine applications. UIP manufactures and sells its treated wood poles and pilings through a network of eight manufacturing facilities and 19 distribution yards located throughout the United States. UIP treats its products with a variety of wood protection chemicals, including copper chromium arsenate and creosote, which are produced by the Company's Performance Chemicals and CMC segments, respectively. UIP's revenues were \$147 million for the year ended December 31, 2017.

On February 28, 2018, Koppers Inc. acquired M.A. Energy Resources, LLC ("MAER") for net cash consideration of \$62.8 million. The purchase price was funded by borrowings on Koppers Inc.'s revolving credit facility. MAER is a vertically-integrated company that provides material recovery services for crossties that have been taken out of service and other biomass material. MAER converts this recovered material into alternative fuels, such as crosstie-derived fuel or biomass-derived fuel, that is used as a substitute for conventional higher-cost carbon-based fuel. MAER currently operates two processing facilities, each of which is located to serve its Class I railroad customer base. MAER's revenues were \$30 million for the year ended December 31, 2017.

The Company has completed a preliminary valuation analysis to determine the fair values of UIP's and MAER's acquired assets and liabilities. Accordingly, the unaudited condensed consolidated financial statements include a preliminary fair value determination based on assumptions and estimates that, while considered reasonable, are subject to changes, which may be material.

Upon completion of detailed valuation analyses, there may be additional increases or decreases to the recorded fair values of the acquired assets and liabilities, including but not limited to receivables, inventories, trademarks, customer contracts and other intangible assets, and property, plant and equipment that could give rise to future amounts of depreciation and amortization expense and changes in related deferred taxes that are not reflected in the information contained in this unaudited condensed consolidated information. Accordingly, once the necessary valuation analyses have been performed and the final fair value determination has been completed, actual results may differ materially from the information presented in the unaudited condensed consolidated financial statements.

The preliminary valuation of identifiable assets acquired and liabilities assumed upon the acquisition of UIP and MAER are shown in the table below.

	UIP		MAER	
<i>(Dollars in millions)</i>				
Cash and cash equivalents	\$	1.5	\$	3.2
Accounts receivable		20.2		4.9
Inventory		43.1		0.0
Other current assets		1.2		0.3
Property, plant and equipment		19.5		6.6
Intangible assets, net		59.6		19.3
Goodwill		76.0		34.0
Other non-current assets		0.7		0.0
Total assets acquired		221.8		68.3
Accounts payable & accrued expenses		18.4		2.3
Other non-current liabilities		0.5		0.0
Net assets acquired	\$	202.9	\$	66.0

Goodwill for both acquisitions has been allocated to the Company's Railroad and Utility Products and Services segment. The Company expects that a significant portion of the goodwill recognized will be deductible for tax purposes, but this determination is dependent upon the finalization of the purchase price allocation process. Recognized goodwill is attributable to the assembled workforce, expected synergies and other intangible assets that do not qualify for separate recognition. Net assets acquired included identifiable intangible assets with respect to customer contracts, non-compete agreements and trademarks as summarized in the following table.

<i>(Dollars in millions)</i>	UIP		MAER	
	Amount	Remaining Life	Amount	Remaining Life
Customer contracts	\$ 58.4	15 years	\$ 18.7	15 years
Non-compete agreements	1.2	5 years		
Trademarks			0.6	2 years
Total	\$ 59.6		\$ 19.3	

Combined costs related to these two acquisitions were \$3.5 million and \$5.6 million for the three and six months ended June 30, 2018, respectively, and are charged to selling, general and administrative expenses. Net sales of \$46.4 million and loss before taxes of \$4.3 million, including \$5.5 million of inventory fair value purchase price accounting adjustments, was attributable to UIP and included in the Condensed Consolidated Statement of Operations and Comprehensive (Loss) Income for the three and six months ended June 30, 2018.

The following unaudited pro forma information presents a summary of the Company's revenues and income from continuing operations as if the UIP acquisition occurred on January 1, 2017 (the first day of the most recently completed fiscal year). The unaudited pro forma information is not necessarily indicative of operating results that would have been achieved had the acquisition been completed as of January 1, 2017 and does not intend to project the future financial results of the Company after the acquisition. The unaudited pro forma information is based on certain assumptions, which management believes are reasonable, and does not reflect the cost of any integration activities or the benefits from the acquisition and synergies that may be derived from any integration activities.

<i>(Dollars in millions)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Pro forma revenue	\$ 440.3	\$ 418.2	\$ 892.8	\$ 798.9
Pro forma income from continuing operations attributable to Koppers	5.7	21.1	26.6	22.7
Pro forma income per share - continuing operations:				
Basic -	\$ 0.27	\$ 1.02	\$ 1.27	\$ 1.09
Diluted -	\$ 0.26	\$ 0.96	\$ 1.20	\$ 1.04

5. Revenue Recognition

On January 1, 2018, the Company adopted Topic 606, the accounting standard for recognized revenue from contracts with customers, using the modified retrospective method. The Company recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of retained earnings. The comparative

information has not been restated and continues to be reported under the accounting standards in effect for those periods. The Company has identified certain contracts with customers where revenue has been accelerated upon adoption of Topic 606 as the related performance obligations under the contract have been satisfied and control of the goods or services have been transferred to the customer.

The Company calculated the cumulative effect to the opening balance of retained earnings recognized at January 1, 2018 to be an increase of \$0.3 million, including \$5.3 million in revenue not previously recognized during the year ended December 31, 2017. Revenue recognized during the six months ended June 30, 2018 from the adoption of Topic 606 was \$3.3 million and, as such, the net impact of adopting Topic 606 for the three and six months ending June 30, 2018 was a decrease in sales and cost of sales as follows:

<i>(Dollars in millions)</i>	<u>Three Months Ended</u> <u>June 30,</u> <u>2018</u>		<u>Six Months Ended</u> <u>June 30,</u> <u>2018</u>	
Sales	\$	(0.7)	\$	(2.0)
Cost of sales		(0.7)		(1.9)

Topic 606 impacted the timing of revenue recognized related to certain services to untreated cross-ties within the Company's RUPS segment where those specific performance obligations were fulfilled prior to shipment and were historically not recognized as revenue until shipped. Refer to "Note 9 – Segment Information" for relevant disclosures regarding the disaggregation of revenue.

Revenue is recognized upon the completion of performance obligations under the Company's contracts with customers and when control of a good or service is transferred to the customer. Substantially all of the Company's contracts with its customers are ship and invoice arrangements where revenue is recognized when the Company transfers control to the customer which is at the time of shipment or delivery. Revenue recognition generally occurs at the point of shipment; however in certain circumstances as shipping terms dictate, the Company transfers control and revenue is recognized at the point of destination. Shipping and handling costs are included as a component of cost of sales.

Contract Balances

The timing of revenue recognition in accordance with Topic 606 and subsequent billings related to such revenue recognized results in both billed accounts receivable and unbilled receivables (contract assets), both classified as accounts receivable, net of allowance within the condensed consolidated balance sheet. Certain contracts with customers within the Company's RUPS and CMC segments have agreed-upon contractual terms for the timing of billing. In some instances, amounts are not billed at the time specific performance obligations are fulfilled. For these contracts with customers, revenue is recognized prior to billings, resulting in contract assets. Contract assets recorded within accounts receivable, net of allowance within the condensed consolidated balance sheet as of June 30, 2018 and January 1, 2018 due to performance obligations being fulfilled prior to billing was \$15.9 million and \$5.3 million, respectively.

6. Comprehensive (Loss) Income and Equity

Total comprehensive (loss) income for the three and six months ended June 30, 2018 and 2017 is summarized in the table below:

<i>(Dollars in millions)</i>	<u>Three Months Ended June 30,</u> <u>2018</u>		<u>2017</u>		<u>Six Months Ended June 30,</u> <u>2018</u>		<u>2017</u>	
Net income	\$	1.0	\$	19.8	\$	24.7	\$	24.4
Other comprehensive (loss) income:								
Change in currency translation adjustment		(17.2)		4.9		(16.0)		10.9
Unrealized (loss) gain on cash flow hedges, net of tax (benefit) expense of \$(2.2), \$(0.3), \$(6.7) and \$0.6		(4.7)		(0.4)		(14.0)		0.9
Change in accounting standard		0.0		0.0		0.3		0.0
Unrecognized pension net loss, net of tax expense of \$0.1, \$0.2, \$0.2 and \$0.4		0.2		0.4		0.5		0.7
Total comprehensive (loss) income		(20.7)		24.7		(4.5)		36.9
Less: Comprehensive (loss) income attributable to noncontrolling interests		(0.3)		0.2		5.8		0.4
Comprehensive (loss) income attributable to Koppers	\$	(20.4)	\$	24.5	\$	(10.3)	\$	36.5

Amounts reclassified from accumulated other comprehensive loss to net income consist of amounts shown for changes in unrecognized pension net loss. This component of accumulated other comprehensive loss is included in the computation of net periodic pension cost as disclosed in "Note 13 – Pensions and Postretirement Benefit Plans". Other amounts

reclassified from accumulated other comprehensive loss include income related to derivative financial instruments, net of tax, of \$2.9 million and \$5.4 million for the three and six months ended June 30, 2018, respectively, and \$1.3 million and \$2.6 million for the three and six months ended June 30, 2017, respectively.

The following tables present the change in equity for the six months ended June 30, 2018 and 2017, respectively:

<i>(Dollars in millions)</i>	<i>Total Koppers Shareholders' Equity</i>		<i>Noncontrolling Interests</i>		<i>Total Equity</i>
Balance at December 31, 2017	\$	99.9	\$	5.9	\$ 105.8
Net income		18.4		6.3	24.7
Issuance of common stock		2.2		0.0	2.2
Employee stock plans		6.0		0.0	6.0
Other comprehensive loss		(28.7)		(0.5)	(29.2)
Repurchases of common stock		(7.4)		0.0	(7.4)
Balance at June 30, 2018	\$	90.4	\$	11.7	\$ 102.1

<i>(Dollars in millions)</i>	<i>Total Koppers Shareholders' Equity</i>		<i>Noncontrolling Interests</i>		<i>Total Equity</i>
Balance at December 31, 2016	\$	30.4	\$	4.2	\$ 34.6
Net income		24.1		0.3	24.4
Issuance of common stock		1.9		0.0	1.9
Employee stock plans		5.3		0.0	5.3
Other comprehensive income		12.4		0.1	12.5
Repurchases of common stock		(5.2)		0.0	(5.2)
Balance at June 30, 2017	\$	68.9	\$	4.6	\$ 73.5

7. Earnings per Common Share

The computation of basic earnings per common share for the periods presented is based upon the weighted average number of common shares outstanding during the periods. The computation of diluted earnings per common share includes the effect of non-vested nonqualified stock options and restricted stock units assuming such options and stock units were outstanding common shares at the beginning of the period. The effect of antidilutive securities is excluded from the computation of diluted loss per common share, if any.

The following table sets forth the computation of basic and diluted earnings per common share:

<i>(Dollars in millions, except share amounts, in thousands, and per share amounts)</i>	<i>Three Months Ended June 30,</i>		<i>Six Months Ended June 30,</i>	
	<i>2018</i>	<i>2017</i>	<i>2018</i>	<i>2017</i>
Net income attributable to Koppers	\$ 0.6	\$ 19.7	\$ 18.4	\$ 24.1
Less: Income (loss) from discontinued operations	0.5	(1.1)	0.4	(1.2)
Income from continuing operations attributable to Koppers	\$ 0.1	\$ 20.8	\$ 18.0	\$ 25.3
Weighted average common shares outstanding:				
Basic	21,138	20,782	21,016	20,752
Effect of dilutive securities	916	1,101	1,076	1,146
Diluted	22,054	21,883	22,092	21,898
Income per common share – continuing operations:				
Basic income per common share	\$ 0.01	\$ 1.00	\$ 0.86	\$ 1.22
Diluted income per common share	0.01	0.95	0.81	1.15
Other data:				
Antidilutive securities excluded from computation of diluted earnings per common share	249	509	195	344

8. Stock-based Compensation

The Company has outstanding stock-based compensation awards that were granted under the amended and restated 2005 Long-Term Incentive Plan (the "2005 LTIP") and the 2018 Long-Term Incentive Plan (the "2018 LTIP"). Both the 2005 LTIP and the 2018 LTIP are collectively referred to as the "LTIP". On May 3, 2018, the 2018 LTIP was approved by our shareholders and the 2005 LTIP was frozen. Similar to the 2005 LTIP, the 2018 LTIP provides for the grant to eligible persons of stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares,

performance awards, dividend equivalents and other stock-based awards, which are collectively referred to as the “awards”.

Restricted Stock Units and Performance Stock Units

Under the LTIP, the board of directors grants restricted stock units and performance stock units to certain employee participants (collectively, the “stock units”). For grants to most employees, the restricted stock units vest in four equal annual installments. Restricted stock units that have one-year vesting periods are also issued under the LTIP to members of the board of directors in connection with annual director compensation and, from time to time, are issued to employees in connection with employee compensation with vesting periods of two years or less.

Compensation expense for non-vested stock units is recorded over the vesting period based on the fair value at the date of grant. The fair value of restricted stock units and performance stock units with a performance condition is the market price of the underlying common stock on the date of grant.

Performance stock units granted prior to 2016 have vesting based upon a performance condition. These performance stock units generally have three-year performance objectives and all performance stock units have a three-year period for vesting (if the applicable performance objective is achieved). For awards granted prior to 2016, the applicable performance objective is based upon a multi-year cumulative value creation calculation that considers the Company’s financial performance commencing on the first day of each grant year. The number of performance stock units granted represents the target award and participants have the ability to earn between zero and 200 percent (depending on the grant date) of the target award based upon actual performance. If minimum performance criteria are not achieved, no performance stock units will vest. Performance stock units granted in 2015 exceeded the maximum value creation and vested at 200 percent in March 2018.

Performance stock units granted in 2016 and thereafter have vesting based upon a market condition. These performance stock units have a three-year performance objective and a three-year period for vesting (if the applicable performance objective is achieved). The applicable performance objective is based on the Company’s total shareholder return relative to the Standard & Poor’s SmallCap 600 Materials Index. The number of performance stock units granted represents the target award and participants have the ability to earn between zero and 200 percent of the target award based upon actual performance. If minimum performance criteria are not achieved, no performance stock units will vest. The Company has the discretion to settle the award in cash rather than shares, although the Company currently expects that all awards will be settled by the issuance of shares.

Compensation expense for non-vested performance stock units with a market condition is recorded over the vesting period based on the fair value at the date of grant. The Company calculated the fair value of the awards on the date of grant using the Monte Carlo valuation model and the assumptions listed below:

	<i>May 2018 Grant</i>	<i>March 2018 Grant</i>	<i>March 2017 Grant</i>	<i>March 2016 Grant</i>
Grant date price per share	\$ 39.10	\$ 41.60	\$ 44.10	\$ 18.11
Expected dividend yield per share	0.00%	0.00%	0.00%	0.00%
Expected volatility	39.40%	39.40%	43.50%	40.86%
Risk-free interest rate	2.35%	2.35%	1.54%	0.96%
Look-back period in years	2.84	2.84	2.83	2.84
Grant date fair value per share	\$ 44.29	\$ 47.12	\$ 64.02	\$ 23.70

Dividends declared, if any, on the Company’s common stock during the period prior to vesting of the stock units are credited at equivalent value as additional stock units and become payable as additional common shares upon vesting. In the event of termination of employment, other than retirement, death or disability, any non-vested stock units are forfeited, including additional stock units credited from dividends. In the event of termination of employment due to retirement, death or disability, pro-rata vesting of the stock units over the service period will result. There are special vesting provisions for the stock units related to a change in control.

The following table shows a summary of the performance stock units as of June 30, 2018:

<i>Performance Period</i>	<i>Minimum Shares</i>	<i>Target Shares</i>	<i>Maximum Shares</i>
2016 – 2018	0	255,172	510,344
2017 – 2019	0	113,675	227,350
2018 – 2020	0	130,782	261,564

The following table shows a summary of the status and activity of non-vested stock units for the six months ended June 30, 2018:

	Restricted Stock Units	Performance Stock Units	Total Stock Units	Weighted Average Grant Date Fair Value per Unit
Non-vested at December 31, 2017	238,140	581,551	819,691	\$ 29.14
Granted	110,743	134,351	245,094	\$ 44.18
Performance share adjustment	0	204,866	204,866	\$ 17.57
Vested	(92,089)	(409,732)	(501,821)	\$ 19.35
Forfeited	(7,094)	(11,407)	(18,501)	\$ 38.77
Non-vested at June 30, 2018	249,700	499,629	749,329	\$ 37.20

Stock Options

Stock options to most executive officers vest and become exercisable in four equal annual installments. The stock options have a term of ten years. In the event of termination of employment, other than retirement, death or disability, any non-vested options are forfeited. In the event of termination of employment due to retirement, death or disability, pro-rata vesting of the options over the service period will result. There are special vesting provisions for the stock options related to a change in control.

Compensation expense for non-vested stock options is recorded over the vesting period based on the fair value at the date of grant. The Company calculated the fair value of stock options on the date of grant using the Black-Scholes-Merton model and the assumptions listed below:

	May 2018 Grant	March 2018 Grant	March 2017 Grant	March 2016 Grant	March 2015 Grant
Grant date price per share	\$ 39.10	\$ 41.60	\$ 44.10	\$ 18.11	\$ 17.57
Expected dividend yield per share	0.00%	0.00%	0.00%	0.00%	3.40%
Expected life in years	5.73	5.73	5.77	5.96	5.75
Expected volatility	37.05%	37.05%	39.70%	40.86%	42.27%
Risk-free interest rate	2.82%	2.67%	2.13%	1.45%	1.73%
Grant date fair value per share	\$ 15.48	\$ 16.38	\$ 17.90	\$ 7.41	\$ 5.20

The Company suspended its dividend in February 2015 and does not expect to declare any dividends for the foreseeable future. The expected life in years is based on historical exercise data of options previously granted by the Company. Expected volatility is based on the historical volatility of the Company's common stock and the historical volatility of certain other similar public companies. The risk-free interest rate is based on U.S. Treasury bill rates for the expected life of the option.

The following table shows a summary of the status and activity of stock options for the six months ended June 30, 2018:

	Options	Weighted Average Exercise Price per Option	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding at December 31, 2017	942,537	\$ 27.59		
Granted	144,825	\$ 41.50		
Exercised	(65,897)	\$ 28.59		
Forfeited	(12,329)	\$ 30.49		
Outstanding at June 30, 2018	1,009,136	\$ 29.48	6.37	\$ 10.4
Exercisable at June 30, 2018	621,771	\$ 28.40	5.11	\$ 6.7

Stock Compensation Expense

Total stock-based compensation expense recognized under the Company's LTIP and employee stock purchase plan for three and six months ended June 30, 2018 and 2017 is as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Stock-based compensation expense recognized:				
Selling, general and administrative expenses	\$ 3.1	\$ 2.7	\$ 6.0	\$ 5.0
Less related income tax benefit	1.0	0.7	1.9	1.2
Decrease in net income attributable to Koppers	\$ 2.1	\$ 2.0	\$ 4.1	\$ 3.8
Intrinsic value of exercised stock options	\$ 0.8	\$ 0.3	\$ 1.0	\$ 1.1
Cash received from the exercise of stock options	\$ 0.9	\$ 0.3	\$ 2.2	\$ 1.9

As of June 30, 2018, total future gross compensation expense related to non-vested stock-based compensation arrangements, which are expected to vest, totaled \$21.6 million and the weighted-average period over which this cost is expected to be recognized is approximately 28 months.

9. Segment Information

The Company has three reportable segments: Railroad and Utility Products and Services, Performance Chemicals and Carbon Materials and Chemicals. The Company's reportable segments contain multiple aggregated business units since management believes the long-term financial performance of these business units is affected by similar economic conditions. The reportable segments are each managed separately because they manufacture and distribute distinct products with different production processes.

The Company's Railroad and Utility Products and Services segment sells treated and untreated wood products, manufactured products and services primarily to the railroad and public utility markets. Railroad products and services include procuring and treating items such as crossties, switch ties and various types of lumber used for railroad bridges and crossings and the manufacture of rail joint bars. The segment also operates a railroad services business that conducts engineering, design, repair and inspection services for railroad bridges and a business related to the recovery of used crossties. Utility products include the treating of transmission and distribution poles and pilings. In April 2018, the Company acquired UIP, a manufacturer of treated wood utility transmission and distribution poles for utility companies and cooperative utility companies. It is also a manufacturer of treated wood pilings used for construction and marine applications. In February 2018, the Company acquired MAER, a vertically-integrated provider of crosstie recovery and disposal services. MAER converts recovered material into alternative fuels, such as crosstie-derived fuel or biomass-derived fuel, that is used as a substitute for conventional higher-cost carbon-based fuel.

The Company's Performance Chemicals segment develops, manufactures, and markets wood preservation chemicals and wood treatment technologies and services a diverse range of end-markets including infrastructure, residential and commercial construction, and agriculture.

The Company's Carbon Materials and Chemicals segment is primarily a manufacturer of creosote, carbon pitch, naphthalene, phthalic anhydride and carbon black feedstock. Creosote is used in the treatment of wood and carbon black feedstock is used in the production of carbon black. Carbon pitch is a critical raw material used in the production of aluminum and for the production of steel in electric arc furnaces. Naphthalene is used for the production of phthalic anhydride and as a surfactant in the production of concrete. Phthalic anhydride is used in the production of plasticizers, polyester resins and alkyd paints.

The Company evaluates performance and determines resource allocations based on a number of factors, the primary measure being operating profit or loss from operations. Operating profit does not include equity in earnings of affiliates, other (loss) income, interest expense, income taxes or operating costs of Koppers Holdings Inc. The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies as disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2017. Refer to "Note 5 – Revenue Recognition" for accounting policies specific to revenue recognition. Intersegment transactions are eliminated in consolidation.

The following table sets forth certain sales and operating data, net of all intersegment transactions, for the Company's segments for the periods indicated:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Revenues from external customers:				
Railroad and Utility Products and Services	\$ 177.2	\$ 135.9	\$ 285.6	\$ 271.4
Performance Chemicals	115.1	111.8	212.5	208.5
Carbon Materials and Chemicals	143.7	130.3	344.0	244.7
Total	\$ 436.0	\$ 378.0	\$ 842.1	\$ 724.6
Intersegment revenues:				
Performance Chemicals	\$ 2.4	\$ 1.5	\$ 4.2	\$ 3.2
Carbon Materials and Chemicals	19.2	19.0	37.4	37.9
Total	\$ 21.6	\$ 20.5	\$ 41.6	\$ 41.1
Depreciation and amortization expense:				
Railroad and Utility Products and Services	\$ 4.9	\$ 2.9	\$ 7.9	\$ 5.9
Performance Chemicals	4.5	4.5	8.9	8.9
Carbon Materials and Chemicals	4.3	4.3	8.7	8.1
Total	\$ 13.7	\$ 11.7	\$ 25.5	\$ 22.9
Operating profit (loss):				
Railroad and Utility Products and Services ^(a)	\$ (1.0)	\$ 11.3	\$ 0.1	\$ 20.6
Performance Chemicals	11.6	19.6	17.2	38.2
Carbon Materials and Chemicals	12.5	8.0	49.7	8.6
Corporate ^(b)	(0.8)	(0.8)	(1.4)	(1.2)
Total	\$ 22.3	\$ 38.1	\$ 65.6	\$ 66.2

^(a) Operating loss for the three and six months ended June 30, 2018 includes \$5.5 million of inventory fair value purchase price adjustment related to the Company's UIP acquisition.

^(b) Operating loss for Corporate includes primarily general and administrative costs for Koppers Holdings Inc., the parent company of Koppers Inc.

The following table sets forth revenues for significant product lines, net of all intersegment transactions, for the Company's segments for the periods indicated:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Railroad and Utility Products and Services:				
Railroad treated products	\$ 88.0	\$ 101.1	\$ 163.1	\$ 203.8
Utility poles	58.9	10.4	70.4	21.2
Rail joints	9.7	7.6	18.1	15.0
Railroad infrastructure services	9.1	9.3	16.1	17.9
Other products	11.5	7.5	17.9	13.5
	177.2	135.9	285.6	271.4
Performance Chemicals:				
Wood preservative products	112.8	109.1	208.1	203.6
Other products	2.3	2.7	4.4	4.9
	115.1	111.8	212.5	208.5
Carbon Materials and Chemicals:				
Pitch and related products	86.0	68.6	215.2	116.8
Creosote and distillates	19.3	19.0	42.2	39.5
Phthalic anhydride and other chemicals	18.4	21.6	40.6	44.8
Naphthalene	9.6	8.8	22.7	17.9
Other products	10.4	12.2	23.3	25.8
	143.7	130.3	344.0	244.7
Total	\$ 436.0	\$ 378.0	\$ 842.1	\$ 724.6

The following table sets forth certain tangible and intangible assets allocated to each of the Company's segments as of the dates indicated:

	June 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Segment assets:		
Railroad and Utility Products and Services	\$ 551.9	\$ 249.7
Performance Chemicals	486.7	494.0
Carbon Materials and Chemicals	454.8	414.2
All other	38.3	42.3
Total	\$ 1,531.7	\$ 1,200.2
Goodwill:		
Railroad and Utility Products and Services ^(a)	\$ 120.2	\$ 10.5
Performance Chemicals	176.1	177.7
Total	\$ 296.4	\$ 188.2

(a) The increase in goodwill as of June 30, 2018 includes \$110.1 million attributable to the Company's acquisitions of UIP and MAER during 2018.

10. Income Taxes

Effective Tax Rate

The income tax provision for interim periods is comprised of an estimated annual effective income tax rate applied to current year ordinary income and tax associated with discrete items. These discrete items generally relate to excess stock compensation deductions, changes in tax laws, adjustments to uncertain tax positions and changes of estimated tax to the actual liability determined upon filing tax returns. To determine the annual effective tax rate, management is required to make estimates of annual pretax income in each domestic and foreign jurisdiction in which the Company conducts business. Entities that have historical pre-tax losses and current year estimated pre-tax losses that are not projected to generate a future benefit are excluded from the estimated annual effective income tax rate.

On December 22, 2017, the Tax Cut and Jobs Act ("Tax Act") was signed into law. The Tax Act significantly revises the U.S. corporate income tax system with changes that are effective in 2017 and 2018. Changes in tax rates and tax laws and their impact on deferred taxes are accounted for in the period of legislative enactment. In March 2018, the FASB issued Accounting Standards Update (ASU) 2018-05, which codified guidance provided in SEC Staff Accounting Bulletin 118. ASU 2018-05 allows a company to record a provisional amount when it does not have the necessary information available, prepared, or analyzed in reasonable detail to complete its accounting for the change in the tax law. The measurement period begins in the reporting period that includes the Tax Act's enactment date and ends when the company has obtained, prepared and analyzed the information necessary to finalize its accounting, but cannot extend beyond one year from the enactment date. ASU 2018-05 applies to measuring the impact of tax laws effecting the period of enactment, such as the change in the corporate income tax rate to 21 percent and the one-time transition tax, but does not apply to changes as part of the Tax Act that were not effective until 2018, such as U.S. taxation of certain global intangible low-taxed income ("GILTI").

The Tax Act imposed a one-time transition tax on unrepatriated earnings of foreign subsidiaries through December 31, 2017 that have not previously been subject to federal tax. The Company estimated this one-time transition tax and recorded a provisional charge to income tax expense of \$13.1 million in 2017. This amount has been further reduced by domestic losses and other tax credits resulting in an estimated cash payment of approximately \$4.7 million that the Company expects to elect to pay in installments over the next eight years. The Company has not yet completed its calculation of the total post-1986 unrepatriated earnings for its foreign subsidiaries and this calculation will not be finalized until the Company's 2017 federal income tax return is filed. Further, the transition tax is based in part on the amount of those earnings held in cash and other specified assets, which is a defined term under the Tax Act and other provisions that remain subject to interpretation. The Company continues its analysis of the effects of the Tax Act and will continue to gather additional information related to these provisional amounts. Such additional analysis includes collecting and refining necessary data and interpreting additional guidance issued by the tax authorities and other standard-setting bodies.

In April 2018, the IRS released additional guidance which caused the Company to revise its prior estimate of its 2017 U.S. tax provision. As a result, \$4.8 million of tax expense was recorded in the three months ended June 30, 2018. Although this change results in an additional charge, due to the availability of net operating losses, no additional cash tax payments are expected.

If the IRS releases additional guidance regarding the one-time transition tax, the ultimate impact of the Tax Act may differ from the current estimates, possibly materially, due to changes in interpretations and assumptions that the Company has made, future guidance that may be issued, and actions that the Company may take as a result.

The Tax Act introduces a new provision for U.S. taxation of GILTI that imposes a minimum tax on earnings of a foreign corporation that are deemed to exceed a certain threshold return relative to the underlying business investment. This GILTI provision is effective for 2018. The Company has elected to treat the effect of this GILTI provision as a period expense in the year incurred and has included an estimate of the impact in its estimated annual effective income tax rate. The Company will continue to analyze this GILTI provision and it is possible that the Company's current estimate of the impact of this GILTI provision may materially change.

The Tax Act introduces other new provisions that are effective for 2018 and changes how certain provisions are calculated beginning in 2018. Other than the GILTI provision, the Company does not expect that any of these new provisions or changes will have a material impact to the Company's tax expense.

The estimated annual effective income tax rate, excluding discrete items discussed above, was 32.3 percent and 24.6 percent for the six months ended June 30, 2018 and 2017, respectively. The estimated annual effective income tax rate differs from the U.S. federal statutory tax rate due to:

	<i>Six Months Ended June 30,</i>	<i>Six Months Ended June 30,</i>
	<i>2018</i>	<i>2017</i>
Federal income tax rate	21.0%	35.0%
State income taxes, net of federal tax benefit	0.3	2.1
Foreign earnings taxed at different rates	4.3	(15.7)
GILTI inclusion (net of foreign tax credits)	10.2	0.0
Valuation allowance adjustments	(7.8)	0.0
Interest expense deduction limitation	2.0	0.0
Nondeductible expenses	1.8	2.1
Change in tax contingency reserves	0.1	0.3
Other	0.4	0.8
Estimated annual effective income tax rate	32.3%	24.6%

The estimated annual effective income tax rate includes the benefit of a valuation allowance adjustment for one of the Company's Chinese entities. Management determined that sufficient positive evidence exists to support that this entity's net operating losses are more likely than not to be realized.

Income taxes as a percentage of pretax income were 93.0 percent for the three months ended June 30, 2018. This is higher than the estimated annual effective income tax rate due to discrete items. Discrete items included in income taxes for the three months ended June 30, 2018 were a net cost of \$5.0 million, which is primarily due to the previously-described \$4.8 million tax expense to reflect a change in the estimate of the Company's 2017 U.S. tax provision.

Income taxes as a percentage of pretax income were 24.0 percent for the three months ended June 30, 2017. This is lower than the estimated annual effective income tax rate principally because the estimated annual effective income tax rate is applied to pre-tax earnings excluding the results of the Company's Chinese entities that were not expected to generate a future tax benefit. Discrete items included in income taxes for the three months ended June 30, 2017 were not material.

Income taxes as a percentage of pretax income were 39.4 percent for the six months ended June 30, 2018. This is higher than the estimated annual effective income tax rate due to discrete items. Discrete items included in income taxes for the six months ended June 30, 2018 were a net cost of \$2.9 million. This primarily includes the previously-described \$4.8 million tax expense to reflect a change in the estimate of the Company's 2017 U.S. tax provision and is offset by \$2.3 million of excess tax benefits for stock-based compensation.

Income taxes as a percentage of pretax income were 22.9 percent for the six months ended June 30, 2017. This is lower than the estimated annual effective income tax rate due to discrete items, but also because the estimated annual effective income tax rate is applied to pre-tax earnings excluding the results of the Company's Chinese entities that were not expected to generate a future tax benefit. Discrete items included in income taxes for the six months ended June 30, 2017 were a net benefit of \$0.3 million, which includes excess tax benefits for stock-based compensation of \$0.9 million offset by additional accruals for uncertain tax positions of \$0.6 million.

During the year, management regularly updates estimates of pre-tax income and income tax expense based on changes in pre-tax income projections by taxable jurisdiction, repatriation of foreign earnings, uncertain tax positions and other tax matters. To the extent that actual results vary from these estimates, the actual annual effective income tax rate at the end

of the year could be materially different from the estimated annual effective income tax rate for the six months ended June 30, 2018.

Uncertain Tax Positions

The Company and its subsidiaries file income tax returns in the U.S. federal jurisdiction, individual U.S. state jurisdictions and non-U.S. jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state and local, or non-U.S. income tax examinations by tax authorities for years prior to 2014.

Unrecognized tax benefits totaled \$8.8 million and \$8.7 million as of June 30, 2018 and December 31, 2017, respectively. As of June 30, 2018 and December 31, 2017, the total amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate, was approximately \$4.5 million and \$4.4 million, respectively. The Company recognizes interest expense and any related penalties from uncertain tax positions in income tax expense. As of June 30, 2018 and December 31, 2017, the Company had accrued approximately \$4.2 million and \$3.6 million for interest and penalties, respectively.

The Company believes that it is reasonably possible that the amount of unrecognized tax benefits will decrease in the next twelve months by approximately \$4 million due to the expirations of certain foreign and state statutes of limitations and potential audit resolutions. The Company does not anticipate significant increases to the amount of unrecognized tax benefits within the next twelve months.

11. Inventories

Net inventories as of June 30, 2018 and December 31, 2017 are summarized in the table below:

	June 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Raw materials	\$ 209.7	\$ 173.6
Work in process	14.0	11.2
Finished goods	123.1	98.4
	\$ 346.8	\$ 283.2
Less revaluation to LIFO	50.9	46.3
Net	\$ 295.9	\$ 236.9

12. Property, Plant and Equipment

Property, plant and equipment as of June 30, 2018 and December 31, 2017 are summarized in the table below:

	June 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Land	\$ 17.1	\$ 17.6
Buildings	63.4	63.4
Machinery and equipment	822.4	756.6
	\$ 902.9	\$ 837.6
Less accumulated depreciation	518.4	509.6
Net	\$ 384.5	\$ 328.0

Impairments – There were no impairment charges incurred for the six months ended June 30, 2018 and 2017.

13. Pensions and Post-Retirement Benefit Plans

The Company and its subsidiaries maintain a number of defined benefit and defined contribution plans to provide retirement benefits for employees in the U.S., as well as employees outside the U.S. These plans are maintained and contributions are made in accordance with the Employee Retirement Income Security Act of 1974 (“ERISA”), local statutory law or as determined by the board of directors. The defined benefit pension plans generally provide benefits based upon years of service and compensation. Pension plans are funded except for three domestic non-qualified defined benefit pension plans for certain key executives.

In the U.S., all qualified and two of the non-qualified defined benefit pension plans for salaried and hourly employees have been closed to new participants and have been frozen. Accordingly, these pension plans no longer accrue additional years of service or recognize future increases in compensation for benefit purposes.

The defined contribution plans generally provide retirement assets to employee participants based upon employer and employee contributions to the participant’s individual investment account. The Company also provides retiree medical

insurance coverage to certain U.S. employees and a life insurance benefit to most U.S. employees. For salaried employees, the retiree medical and retiree insurance plans have been closed to new participants.

The following table provides the components of net periodic benefit cost for the pension plans for the three and six months ended June 30, 2018 and 2017:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Service cost	\$ 0.4	\$ 0.5	\$ 0.9	\$ 1.0
Interest cost	2.0	2.5	3.8	4.9
Expected return on plan assets	(2.2)	(2.5)	(4.3)	(5.0)
Amortization of net loss	0.3	0.5	0.7	1.0
Net periodic benefit cost	\$ 0.5	\$ 1.0	\$ 1.1	\$ 1.9
Defined contribution plan expense	\$ 2.2	\$ 1.8	\$ 4.2	\$ 4.0

14. Debt

Debt as of June 30, 2018 and December 31, 2017 was as follows:

	Weighted Average Interest Rate	Maturity	June 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>				
Term Loan	5.12%	2023	\$ 97.5	\$ 0.0
Revolving Credit Facility	5.12%	2023	390.1	155.0
Construction and other loans	4.69%	2020	25.9	33.7
Senior Notes due 2025	6.00%	2025	500.0	500.0
Debt			1,013.5	688.7
Less short-term debt and current maturities of long-term debt			15.3	11.4
Less unamortized debt issuance costs			13.4	11.7
Long-term debt			\$ 984.8	\$ 665.6

Senior Notes due 2025

The 2025 Notes are senior obligations, are unsecured and are guaranteed by Koppers Holdings Inc. and certain of Koppers Inc.'s domestic subsidiaries. The 2025 Notes pay interest semi-annually in arrears on February 15 and August 15 beginning on August 15, 2017 and will mature on February 15, 2025 unless earlier redeemed or repurchased. On or after February 15, 2020, the Company is entitled to redeem all or a portion of the 2025 Senior Notes at a redemption price of 104.5 percent of principal value, declining to a redemption price of 101.5 percent on or after February 15, 2022 until the redemption price is equivalent to the principal value on April 15, 2023.

The indenture governing the 2025 Senior Notes includes customary covenants that restrict, among other things, the ability of Koppers Inc. and its restricted subsidiaries to incur additional debt, pay dividends or make certain other restricted payments, incur liens, merge or sell all or substantially all of the assets of Koppers Inc. or its subsidiaries or enter into various transactions with affiliates.

Revolving Credit Facility

On April 10, 2018, the Company amended its \$600 million Revolving Credit Facility to enter into a new Secured Term Loan Facility. The new Secured Term Loan Facility includes the \$600 million Revolving Credit Facility and a secured term loan of \$100 million with a quarterly amortization of \$2.5 million and a five-year maturity. In addition, the maturity date of the amended Revolving Credit Facility was extended one year to April 2023. The interest rate on the amended Revolving Credit Facility is variable and is based on LIBOR. The initial average borrowing rates under both facilities are expected to be approximately five percent. Terms under the amended Revolving Credit Facility are substantially consistent with the original Revolving Credit Facility.

Borrowings under the Revolving Credit Facility are secured by a first priority lien on substantially all of the assets of Koppers Inc., Koppers Holdings and their material domestic subsidiaries. The Revolving Credit Facility contains certain covenants for Koppers Inc. and its restricted subsidiaries that limit capital expenditures, additional indebtedness, liens, dividends, investments or acquisitions. In addition, such covenants give rise to events of default upon the failure by Koppers Inc. and its restricted subsidiaries to meet certain financial ratios.

As of June 30, 2018, the Company had \$176.2 million of unused revolving credit availability for working capital purposes after restrictions from certain letter of credit commitments and other covenants. As of June 30, 2018, \$33.8 million of commitments were utilized by outstanding letters of credit.

Loss on Extinguishment of Debt

In February 2017, all of the outstanding Koppers Inc. senior notes due 2019 were repurchased at a premium to carrying value and accordingly, the Company realized a loss on extinguishment of debt totaling \$10.0 million consisting of \$7.3 million for bond premium and bond tender expenses and \$2.7 million for the write-off of unamortized debt issuance costs.

Also in February 2017, Koppers Inc. repaid its term loan in full and entered into a new Revolving Credit Facility. Accordingly, the Company realized a loss of \$3.3 million for the write-off of unamortized debt issuance costs.

Construction Loans

The Company's 75-percent owned subsidiary, Koppers (Jiangsu) Carbon Chemical Company Limited ("KJCC") entered into committed loan facility agreements with a third-party bank and the 25-percent non-controlling shareholder in KJCC. Borrowings under the third-party bank facility, which includes a construction loan and a working capital facility, totaled \$23.1 million at June 30, 2018 and are secured by a letter of credit issued by a bank under the Revolving Credit Facility. KJCC will repay the construction loan portion of the third-party commitment in six installments every six months starting in June 2018 with a final repayment on December 21, 2020, the maturity date of the loans.

15. Asset Retirement Obligations

The Company recognizes asset retirement obligations for the removal and disposal of residues; dismantling of certain tanks required by governmental authorities; cleaning and dismantling costs for owned rail cars; cleaning costs for leased rail cars and barges; and site demolition, when required by governmental authorities or by contract. The following table reflects changes in the carrying values of asset retirement obligations:

		June 30, 2018		December 31, 2017
<i>(Dollars in millions)</i>				
Asset retirement obligation at beginning of year	\$	37.1	\$	36.0
Accretion expense		0.8		2.4
Revision in estimated cash flows		0.7		9.4
Cash expenditures		(5.7)		(10.9)
Currency translation		0.0		0.2
Balance at end of period	\$	32.9	\$	37.1

16. Deferred Revenue

In 2015, KJCC received a cash advance payment of \$30 million as part of an amendment to a soft pitch supply agreement with its customer. Also, the Company defers revenues associated with extended product warranty liabilities based on historical loss experience and sales of extended warranties on certain products. The following table reflects changes in the carrying values of deferred revenue:

(Dollars in millions)

Balance at beginning of year	\$ 28.1	\$ 27.2
Revenue earned	(0.3)	(0.7)
Currency translation	(0.5)	1.6
Balance at end of period	\$ 27.3	\$ 28.1

Deferred revenue classified in other long-term liabilities in the consolidated balance sheet totaled \$26.4 million as of June 30, 2018 and \$27.2 million as of December 31, 2017 with the remainder classified in accrued liabilities.

17. Derivative Financial Instruments

The Company utilizes derivative instruments to manage exposures to risks that have been identified and measured and are capable of being controlled. The primary risks managed by the company by using derivative instruments are commodity price risk associated with copper and foreign currency exchange risk associated with a number of currencies, principally the U.S. dollar, the Canadian dollar, the New Zealand dollar, the Euro and British pounds. Swap contracts on copper are used to manage the price risk associated with forecasted purchases of materials used in the Company's manufacturing processes. Generally, the Company will not hedge cash flow exposures for durations longer than 36 months and the Company has hedged certain volumes of copper through December 2020. The Company enters into foreign currency forward contracts to manage foreign currency risk associated with the Company's receivable and payable balances and foreign currency denominated sales. Generally, the Company enters into master netting arrangements with the counterparties and offsets net derivative positions with the same counterparties. Currently, the Company's agreements do not require cash collateral.

ASC Topic 815-10, "Derivatives and Hedging," requires companies to recognize all derivative instruments as either assets or liabilities at fair value in the balance sheet. Derivative instruments' fair value is determined using significant other observable inputs, or Level 2 in the fair value hierarchy. In accordance with ASC Topic 815-10, the Company designates certain of its commodity swaps as cash flow hedges of forecasted purchases of commodities and certain of its foreign currency swaps as cash flow hedges of forecasted sales. For derivative instruments that are designated and qualify as cash flow hedges, the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and is reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative instruments representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. The amount of hedge ineffectiveness charged to profit and loss is reported in the table below.

For those commodity and foreign currency swaps which are not designated as cash flow hedges, the fair value of the swap is recognized as an asset or liability in the consolidated balance sheet and the related gain or loss on the derivative is reported in current earnings.

As of June 30, 2018 and December 31, 2017, the Company had outstanding copper swap contracts of the following amounts:

	Units Outstanding (in Pounds)		Net Fair Value - Asset	
	June 30, 2018	December 31, 2017	June 30, 2018	December 31, 2017
(Amounts in millions)				
Cash flow hedges	35.2	37.8	\$ 8.3	\$ 25.5
Not designated as hedges	10.1	11.3	0.1	4.5
Total	45.3	49.1	\$ 8.4	\$ 30.0

As of June 30, 2018 and December 31, 2017, the fair value of the outstanding copper swap contracts is recorded in the balance sheet as follows:

	June 30, 2018	December 31, 2017
(Dollars in millions)		
Other current assets	\$ 6.5	\$ 21.8
Other assets	2.0	8.2
Accrued liabilities	(0.1)	0.0
Net asset on balance sheet	\$ 8.4	\$ 30.0
Accumulated other comprehensive gain, net of tax	\$ 6.2	\$ 15.8

Based upon contracts outstanding at June 30, 2018, in the next twelve months the Company estimates that \$5.2 million of unrealized gains, net of tax, related to commodity price hedging will be reclassified from other comprehensive loss into earnings.

See Note 6 – Comprehensive Income (Loss) and Equity, for amounts recorded in other comprehensive income and for amounts reclassified from accumulated other comprehensive loss to net income for the periods specified below. For the three and six months ended June 30, 2018 and 2017, the following amounts were recognized in earnings related to copper swap contracts:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Gain from ineffectiveness of cash flow hedges	\$ 0.0	\$ 1.1	\$ 0.0	\$ 3.0
(Loss) gain from contracts not designated as hedges	(1.0)	0.3	(4.5)	1.0
Net	\$ (1.0)	\$ 1.4	\$ (4.5)	\$ 4.0

The fair value associated with forward contracts related to foreign currency that are not designated as hedges are immediately charged to earnings. These amounts are classified in cost of sales in the Condensed Consolidated Statement of Operations and Comprehensive Income. As of June 30, 2018, the Company had outstanding foreign currency forward contracts consisting of a gross derivative liability of \$1.4 million (recognized in accrued liabilities in the balance sheet) and a gross derivative asset of \$1.3 million (recognized in other current assets in the balance sheet). As of December 31, 2017, the Company had outstanding currency forward contracts with a net fair value totaling \$0.1 million, consisting of a gross derivative liability of \$0.2 million (recognized in accrued liabilities in the balance sheet) and a gross derivative asset of \$0.3 million (recognized in other current assets in the balance sheet).

As of June 30, 2018 and December 31, 2017, the net currency units outstanding for these contracts were:

	June 30, 2018	December 31, 2017
<i>(In millions)</i>		
British Pounds	GBP 6.2	GBP 7.0
New Zealand Dollars	NZD 16.0	NZD 15.5
United States Dollars	USD 1.4	USD 12.5
Canadian Dollars	CAD 2.5	CAD 2.5
Euro	EUR 0.3	EUR 0.0

18. Commitments and Contingent Liabilities

The Company and its subsidiaries are involved in litigation and various proceedings relating to environmental laws and regulations, toxic tort, product liability and other matters. Certain of these matters are discussed below. The ultimate resolution of these contingencies is subject to significant uncertainty and should the Company or its subsidiaries fail to prevail in any of these legal matters or should several of these legal matters be resolved against the Company or its subsidiaries in the same reporting period, these legal matters could, individually or in the aggregate, be material to the consolidated financial statements.

Legal Proceedings

Coal Tar Pitch Cases. Koppers Inc. is one of several defendants in lawsuits filed in two states in which the plaintiffs claim they suffered a variety of illnesses (including cancer) as a result of exposure to coal tar pitch sold by the defendants. There are 85 plaintiffs in 47 cases pending as of June 30, 2018, compared to 87 plaintiffs in 48 cases as of December 31, 2017. As of June 30, 2018, there are 46 cases pending in state court in Pennsylvania, and 1 case pending in state court in Tennessee.

The plaintiffs in all 47 pending cases seek to recover compensatory damages. Plaintiffs in 43 of those cases also seek to recover punitive damages. The plaintiffs in the 46 cases filed in Pennsylvania seek unspecified damages in excess of the court's minimum jurisdictional limit. The plaintiff in the Tennessee state court case seeks damages of \$15.0 million. The other defendants in these lawsuits vary from case to case and include companies such as Beazer East, Inc. ("Beazer East"), Honeywell International Inc., Graftech International Holdings, Dow Chemical Company, UCAR Carbon Company, Inc., and SGL Carbon Corporation. Discovery is proceeding in these cases. No trial dates have been set in any of these cases.

The Company has not provided a reserve for these lawsuits because, at this time, the Company cannot reasonably determine the probability of a loss, and the amount of loss, if any, cannot be reasonably estimated. The timing of resolution of these cases cannot be reasonably determined. Although Koppers Inc. is vigorously defending these cases,

an unfavorable resolution of these matters may have a material adverse effect on the Company's business, financial condition, cash flows and results of operations.

Environmental and Other Litigation Matters

The Company and its subsidiaries are subject to federal, state, local and foreign laws and regulations and potential liabilities relating to the protection of the environment and human health and safety including, among other things, the cleanup of contaminated sites, the treatment, storage and disposal of wastes, the discharge of effluent into waterways, the emission of substances into the air and various health and safety matters. The Company's subsidiaries expect to incur substantial costs for ongoing compliance with such laws and regulations. The Company's subsidiaries may also face governmental or third-party claims, or otherwise incur costs, relating to cleanup of, or for injuries resulting from, contamination at sites associated with past and present operations. The Company accrues for environmental liabilities when a determination can be made that a liability is probable and reasonably estimable.

Environmental and Other Liabilities Retained or Assumed by Others. The Company's subsidiaries have agreements with former owners of certain of their operating locations under which the former owners retained, assumed and/or agreed to indemnify such subsidiaries against certain environmental and other liabilities. The most significant of these agreements was entered into at Koppers Inc.'s formation on December 29, 1988 (the "Acquisition"). Under the related asset purchase agreement between Koppers Inc. and Beazer East, subject to certain limitations, Beazer East retained the responsibility for and agreed to indemnify Koppers Inc. against certain liabilities, damages, losses and costs, including, with certain limited exceptions, liabilities under and costs to comply with environmental laws to the extent attributable to acts or omissions occurring prior to the Acquisition and liabilities related to products sold by Beazer East prior to the Acquisition (the "Indemnity"). Beazer Limited, the parent company of Beazer East, unconditionally guaranteed Beazer East's performance of the Indemnity pursuant to a guarantee (the "Guarantee").

The Indemnity provides different mechanisms, subject to certain limitations, by which Beazer East is obligated to indemnify Koppers Inc. with regard to certain environmental, product and other liabilities and imposes certain conditions on Koppers Inc. before receiving such indemnification, including, in some cases, certain limitations regarding the time period as to which claims for indemnification can be brought. In July 2004, Koppers Inc. and Beazer East agreed to amend the environmental indemnification provisions of the December 29, 1988 asset purchase agreement to extend the indemnification period for pre-closing environmental liabilities through July 2019. As consideration for the amendment, Koppers Inc. paid Beazer East a total of \$7.0 million and agreed to share toxic tort litigation defense costs arising from any sites acquired from Beazer East. The July 2004 amendment did not change the provisions of the Indemnity with respect to indemnification for non-environmental claims, such as product liability claims, which claims may continue to be asserted after July 2019.

Qualified expenditures under the Indemnity are not subject to a monetary limit. Qualified expenditures under the Indemnity include (i) environmental cleanup liabilities required by third parties, such as investigation, remediation and closure costs, relating to pre-December 29, 1988 ("Pre-Closing") acts or omissions of Beazer East or its predecessors; (ii) environmental claims by third parties for personal injuries, property damages and natural resources damages relating to Pre-Closing acts or omissions of Beazer East or its predecessors; (iii) punitive damages for the acts or omissions of Beazer East and its predecessors without regard to the date of the alleged conduct and (iv) product liability claims for products sold by Beazer East or its predecessors without regard to the date of the alleged conduct. If the third-party claims described in sections (i) and (ii) above are not made by July 2019, Beazer East will not be required to pay the costs arising from such claims under the Indemnity. However, with respect to any such claims which are made by July 2019, Beazer East will continue to be responsible for such claims under the Indemnity beyond July 2019. The Indemnity provides for the resolution of issues between Koppers Inc. and Beazer East by an arbitrator on an expedited basis upon the request of either party. The arbitrator could be asked, among other things, to make a determination regarding the allocation of environmental responsibilities between Koppers Inc. and Beazer East. Arbitration decisions under the Indemnity are final and binding on the parties.

Contamination has been identified at most manufacturing and other sites of the Company's subsidiaries. One site currently owned and operated by Koppers Inc. in the United States is listed on the National Priorities List promulgated under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"). Currently, at the properties acquired from Beazer East (which includes the National Priorities List site and all but one of the sites permitted under the Resource Conservation and Recovery Act ("RCRA")), a significant portion of all investigative, cleanup and closure activities are being conducted and paid for by Beazer East pursuant to the terms of the Indemnity. In addition, other of Koppers Inc.'s sites are or have been operated under RCRA and various other environmental permits, and remedial and closure activities are being conducted at some of these sites.

To date, the parties that retained, assumed and/or agreed to indemnify the Company against the liabilities referred to above, including Beazer East, have performed their obligations in all material respects. The Company believes that, for the last three years ended December 31, 2017, amounts paid by Beazer East as a result of its environmental remediation

obligations under the Indemnity have averaged, in total, approximately \$10 million per year. Periodically, issues have arisen between Koppers Inc. and Beazer East and/or other indemnitors that have been resolved without arbitration. Koppers Inc. and Beazer East engage in discussions from time to time that involve, among other things, the allocation of environmental costs related to certain operating and closed facilities.

If for any reason (including disputed coverage or financial incapability) one or more of such parties fail to perform their obligations and the Company or its subsidiaries are held liable for or otherwise required to pay all or part of such liabilities without reimbursement, the imposition of such liabilities on the Company or its subsidiaries could have a material adverse effect on its business, financial condition, cash flows and results of operations. Furthermore, the Company could be required to record a contingent liability on its balance sheet with respect to such matters, which could result in a negative impact to the Company's business, financial condition, cash flows and results of operations.

Domestic Environmental Matters. On June 4, 2018, Koppers Inc. received a letter from the U.S. Environmental Protection Agency ("EPA") concerning potential violations of the Clean Water Act observed during inspections and review of Spill Prevention, Control and Countermeasure Plans and Facility Response Plans at the Company's facilities in Follansbee, WV; Green Spring, WV; and Clairton, PA. In addition, the EPA reviewed one facility's compliance with an earlier consent order regarding above ground storage tank integrity testing. The Company met with the EPA on June 28, 2018 to discuss and present relevant information related to the allegations. The Company currently cannot estimate the potential penalties, fines or other expenditures, if any, that may result from any EPA actions relating to the alleged potential violations and, therefore, the Company cannot determine if the ultimate outcome of this matter will have a material impact on the Company's financial position, results of operations or cash flows.

Koppers Inc. has been named as one of the potentially responsible parties ("PRPs") at the Portland Harbor CERCLA site located on the Willamette River in Oregon. Koppers Inc. operated a coal tar pitch terminal near the site. Koppers Inc. has responded to an Environmental Protection Agency ("EPA") information request and has executed a PRP agreement which outlines a private process to develop an allocation of past and future costs among more than 80 parties to the site. Koppers Inc. believes it is a *de minimis* contributor at the site.

The EPA issued its Record of Decision ("ROD") in January 2017 for the Portland Harbor CERCLA site. The selected remedy includes a combination of sediment removal, capping, enhanced and monitored natural recovery and riverbank improvements. The ROD does not determine who is responsible for remediation costs. The net present value and undiscounted costs of the selected remedy as estimated in the ROD are approximately \$1.1 billion and \$1.7 billion, respectively. Responsibility for implementing and funding that work will be decided in the separate private allocation process, which is ongoing.

Additionally, the Company is involved in two separate natural resource damages assessments at the Portland Harbor site. An assessment is intended to identify damages to natural resources caused by the releases of hazardous substances to the Willamette River and to serve as the foundation to estimate liabilities for settlements of natural resource damages claims or litigation to recover from those who do not settle with the trustee groups. One of the natural resource damage assessments was filed in January 2017 by the Yakama Nation in Oregon federal court. Yakama Nation seeks recovery for future response costs and the costs of assessing injury to natural resources and recovery for past costs of overseeing investigations conducted on the site. Motions to dismiss the case are pending.

In September 2009, Koppers Inc. received a general notice letter notifying it that it may be a PRP at the Newark Bay CERCLA site. In January 2010, Koppers Inc. submitted a response to the general notice letter asserting that Koppers Inc. is a *de minimis* party at this site.

The Company has accrued the estimated costs of participating in the PRP group at the Portland Harbor and Newark Bay CERCLA sites and estimated *de minimis* settlement amounts at the sites totaling \$2.1 million at June 30, 2018. The actual cost could be materially higher as there has not been a determination of how those costs will be allocated among the PRPs at the sites. Accordingly, an unfavorable resolution of these matters may have a material adverse effect on the Company's business, financial condition, cash flows and results of operations.

There are two plant sites in the United States related to the Performance Chemicals business where the Company has recorded an environmental remediation liability for soil and groundwater contamination which occurred prior to the Company's acquisition of the business. As of June 30 2018, the Company's estimated environmental remediation liability for these acquired sites totals \$4.9 million.

There is one plant site in the United States related to the Utility and Industrial Products business where the Company has recorded an environmental remediation liability for soil and groundwater contamination which occurred prior to the Company's acquisition of the business. As of June 30, 2018, the Company's estimated environmental remediation liability for the acquired site totals \$1.9 million.

Foreign Environmental Matters. There are two plant sites related to the Performance Chemicals business located in the United Kingdom and Australia where the Company has recorded an environmental remediation liability for soil and

groundwater contamination which occurred prior to the acquisition of the business. As of June 30, 2018, the Company's estimated environmental remediation liability for these acquired sites totals \$2.6 million.

In December 2011, the Company ceased manufacturing operations at its Continental Carbon facility located in Kurnell, Australia. The Company has accrued its expected cost of site remediation resulting from the closure of \$0.7 million as of June 30, 2018.

Environmental Reserves Rollforward. The following table reflects changes in the accrued liability for environmental matters, of which \$4.5 million and \$5.1 million are classified as current liabilities at June 30, 2018 and December 31, 2017, respectively:

	<i>Period ended</i>	
	<i>June 30,</i>	<i>December 31,</i>
	<i>2018</i>	<i>2017</i>
<i>(Dollars in millions)</i>		
Balance at beginning of year	\$ 13.9	\$ 12.9
Expense	1.0	3.2
Reversal of reserves	0.0	(0.7)
Cash expenditures	(2.9)	(1.8)
Acquisition	1.9	0.0
Currency translation	(0.3)	0.3
Balance at end of period	\$ 13.6	\$ 13.9

19. Subsidiary Guarantor Information for Koppers Inc. Shelf Registration

Under a registration statement on Form S-3, Koppers Holdings may sell a combination of securities, including common stock, debt securities, preferred stock, depository shares, warrants, purchase contracts and units, from time to time in one or more offerings. In addition, Koppers Inc. may sell debt securities from time to time under the registration statement. Debt securities may be fully and unconditionally guaranteed, on a joint and several basis, by Koppers Holdings, Koppers Inc., Koppers Asia LLC, Koppers World-Wide Ventures Corporation, Koppers Concrete Products, Inc., Concrete Partners, Inc., Koppers Delaware, Inc., Koppers Ventures, Inc., Koppers Performance Chemicals Inc., Koppers-Nevada Limited Liability Company, Koppers NZ LLC, Koppers Railroad Structures Inc., Wood Protection LP and Wood Management LLC. Non-guarantor subsidiaries are owned directly or indirectly by Koppers Inc. or are owned directly or indirectly by Koppers World-Wide Ventures Corporation. The guarantor subsidiaries that issue guarantees, if any, will be determined when a debt offering actually occurs under the registration statement and accordingly, the condensed consolidating financial information for subsidiary guarantors will be revised to identify the subsidiaries that actually provided guarantees. These guarantees will be governed pursuant to a supplemental indenture which the trustee and the issuing company would enter into concurrent with the debt offering.

Reliance of Koppers Holdings on Earnings of Koppers Inc. and its Subsidiaries

Koppers Holdings depends on the dividends from the earnings of Koppers Inc. and its subsidiaries to generate the funds necessary to meet its financial obligations, including the payment of any declared dividend of Koppers Holdings. The Revolving Credit Facility prohibits Koppers Inc. from making dividend payments to Koppers Holdings unless (1) such dividend payments are permitted by the indenture governing Koppers Inc.'s 2025 Notes, (2) no event of default or potential default has occurred or is continuing under the credit agreement, and (3) the Company is in pro forma compliance with the Company's fixed charge coverage ratio covenant after giving effect to such dividend. The indenture governing the 2025 Notes restrict Koppers Inc.'s ability to finance the Company's payment of dividends if (1) a default has occurred or would result from such financing, (2) Koppers Inc., or a restricted subsidiary of Koppers Inc. which is not a guarantor under the applicable indenture is not able to incur additional indebtedness (as defined in the applicable indenture), and (3) the sum of all restricted payments (as defined in the applicable indenture) have exceeded the permitted amount (which the Company refers to as the "basket") at such point in time.

The Koppers Inc. Revolving Credit Facility agreement provides for a revolving credit facility at variable rates. Borrowings under the Revolving Credit Facility are secured by a first priority lien on substantially all of the assets of Koppers Inc. and its material domestic subsidiaries. The revolving credit facility agreement contains certain covenants for Koppers Inc. and its restricted subsidiaries that limit capital expenditures, additional indebtedness, liens, dividends, investments or acquisitions. In addition, such covenants give rise to events of default upon the failure by Koppers Inc. and its restricted subsidiaries to meet certain financial ratios.

As of June 30, 2018, Koppers Inc.'s assets exceeded its liabilities by \$90.1 million. There are no net assets unavailable for distribution to Koppers Holdings Inc. by Koppers Inc. as of June 30, 2018. Cash dividends paid to Koppers Holdings Inc. by its subsidiaries totaled \$7.4 million and \$2.0 million for the six months ended June 30, 2018 and 2017, respectively.

Condensed Consolidating Statement of Operations
For the Three Months Ended June 30, 2018

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Net sales	\$ 0.0	\$ 140.2	\$ 95.9	\$ 218.8	\$ (18.9)	\$ 436.0
Cost of sales including depreciation and amortization	0.0	129.3	72.1	186.6	(20.1)	367.9
Selling, general and administrative	0.8	15.2	11.9	17.9	0.0	45.8
Operating profit (loss)	(0.8)	(4.3)	11.9	14.3	1.2	22.3
Other (loss) income	0.0	(2.4)	0.4	1.3	0.0	(0.7)
Equity income (loss) of subsidiaries	1.2	21.9	16.3	(0.1)	(39.3)	0.0
Interest expense	0.0	13.9	0.0	0.6	0.0	14.5
Income taxes	(0.2)	0.1	2.7	4.0	0.0	6.6
Income from continuing operations	0.6	1.2	25.9	10.9	(38.1)	0.5
Discontinued operations	0.0	0.0	0.0	0.5	0.0	0.5
Noncontrolling interests	0.0	0.0	0.0	0.4	0.0	0.4
Net income attributable to Koppers	\$ 0.6	\$ 1.2	\$ 25.9	\$ 11.0	\$ (38.1)	\$ 0.6
Comprehensive income attributable to Koppers	\$ (20.4)	\$ (20.0)	\$ 4.7	\$ (5.9)	\$ 21.2	\$ (20.4)

Condensed Consolidating Statement of Operations
For the Three Months Ended June 30, 2017

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Net sales	\$ 0.0	\$ 153.2	\$ 94.2	\$ 151.8	\$ (21.2)	\$ 378.0
Cost of sales including depreciation and amortization	0.0	141.8	65.1	123.0	(21.5)	308.4
Selling, general and administrative	0.5	10.9	10.1	10.0	0.0	31.5
Operating profit (loss)	(0.5)	0.5	19.0	18.8	0.3	38.1
Other income (loss)	0.0	(0.4)	0.6	0.3	(0.3)	0.2
Equity income (loss) of subsidiaries	20.0	25.5	12.9	(0.1)	(58.3)	0.0
Interest expense	0.0	10.0	(0.1)	1.2	(0.3)	10.8
Loss on extinguishment of debt	0.0	0.0	0.0	0.0	0.0	0.0
Income taxes	(0.2)	(4.4)	7.2	4.0	0.0	6.6
Income (loss) from continuing operations	19.7	20.0	25.4	13.8	(58.0)	20.9
Discontinued operations	0.0	0.0	0.0	(1.1)	0.0	(1.1)
Noncontrolling interests	0.0	0.0	0.0	0.1	0.0	0.1
Net income attributable to Koppers	\$ 19.7	\$ 20.0	\$ 25.4	\$ 12.6	\$ (58.0)	\$ 19.7
Comprehensive income (loss) attributable to Koppers	\$ 24.5	\$ 24.8	\$ 29.9	\$ 18.5	\$ (73.2)	\$ 24.5

Condensed Consolidating Statement of Operations
For the Six Months Ended June 30, 2018

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Net sales	\$ 0.0	\$ 271.3	\$ 173.4	\$ 434.5	\$ (37.1)	\$ 842.1
Cost of sales including depreciation and amortization	0.0	252.2	134.4	344.3	(38.3)	692.6
Selling, general and administrative	1.4	27.3	23.9	31.3	0.0	83.9
Operating profit (loss)	(1.4)	(8.2)	15.1	58.9	1.2	65.6
Other (loss) income	0.0	(2.8)	0.8	1.5	0.0	(0.5)
Equity income (loss) of subsidiaries	19.5	58.4	49.9	(0.1)	(127.7)	0.0
Interest expense	0.0	23.8	0.0	1.2	0.0	25.0
Income taxes	(0.3)	4.1	3.6	8.4	0.0	15.8
Income from continuing operations	18.4	19.5	62.2	50.7	(126.5)	24.3
Discontinued operations	0.0	0.0	0.0	0.4	0.0	0.4
Noncontrolling interests	0.0	0.0	0.0	6.3	0.0	6.3
Net income attributable to Koppers	\$ 18.4	\$ 19.5	\$ 62.2	\$ 44.8	\$ (126.5)	\$ 18.4
Comprehensive income attributable to Koppers	\$ (10.3)	\$ (9.4)	\$ 32.7	\$ 28.7	\$ (52.0)	\$ (10.3)

Condensed Consolidating Statement of Operations
For the Six Months Ended June 30, 2017

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Net sales	\$ 0.0	\$ 304.1	\$ 175.4	\$ 288.2	\$ (43.1)	\$ 724.6
Cost of sales including depreciation and amortization	0.0	289.5	119.1	228.8	(41.4)	596.0
Selling, general and administrative	1.0	21.7	20.3	19.4	0.0	62.4
Operating profit (loss)	(1.0)	(7.1)	36.0	40.0	(1.7)	66.2
Other income	0.0	(0.8)	1.2	1.8	(0.5)	1.7
Equity income of subsidiaries	24.9	51.8	30.3	(0.1)	(106.9)	0.0
Interest expense	0.0	19.7	0.0	2.1	(0.4)	21.4
Loss on extinguishment of debt	0.0	13.3	0.0	0.0	0.0	13.3
Income taxes	(0.2)	(14.0)	13.7	8.1	0.0	7.6
Income from continuing operations	24.1	24.9	53.8	31.5	(108.7)	25.6
Discontinued operations	0.0	0.0	0.0	(1.2)	0.0	(1.2)
Noncontrolling interests	0.0	0.0	0.0	0.3	0.0	0.3
Net income attributable to Koppers	\$ 24.1	\$ 24.9	\$ 53.8	\$ 30.0	\$ (108.7)	\$ 24.1
Comprehensive income attributable to Koppers	\$ 36.5	\$ 37.4	\$ 65.8	\$ 42.0	\$ (145.2)	\$ 36.5

Condensed Consolidating Balance Sheet
June 30, 2018

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
ASSETS						
Cash and cash equivalents	\$ 0.0	\$ 0.3	\$ 0.1	\$ 62.1	\$ 0.0	\$ 62.5
Receivables, net	0.0	61.1	39.0	117.6	0.0	217.7
Affiliated receivables	1.1	12.8	8.7	6.4	(29.0)	0.0
Inventories, net	0.0	100.5	45.7	150.5	(0.8)	295.9
Other current assets	0.0	6.4	8.3	18.1	0.4	33.2
Total current assets	1.1	181.1	101.8	354.7	(29.4)	609.3
Equity investments	89.4	1,014.1	310.4	0.1	(1,414.0)	0.0
Property, plant and equipment, net	0.0	190.4	46.7	147.4	0.0	384.5
Goodwill	0.0	0.8	153.1	142.5	0.0	296.4
Intangible assets, net	0.0	7.0	94.1	97.6	0.0	198.7
Deferred tax assets	0.0	24.4	(9.1)	2.8	0.0	18.1
Affiliated loan receivables	0.0	41.4	149.2	7.7	(198.3)	0.0
Other assets	0.0	4.7	6.2	13.8	0.0	24.7
Total assets	\$ 90.5	\$ 1,463.9	\$ 852.4	\$ 766.6	\$ (1,641.7)	\$ 1,531.7
LIABILITIES AND EQUITY						
Accounts payable	0.0	79.9	40.9	53.6	0.0	174.4
Affiliated payables	0.0	19.3	2.5	8.0	(29.8)	0.0
Accrued liabilities	0.0	53.5	16.5	40.0	0.0	110.0
Current maturities of long-term debt	0.0	10.1	0.1	5.1	0.0	15.3
Total current liabilities	0.0	162.8	60.0	106.7	(29.8)	299.7
Long-term debt	0.0	964.1	0.2	20.5	0.0	984.8
Affiliated debt	0.0	156.1	33.1	9.1	(198.3)	0.0
Other long-term liabilities	0.0	90.8	14.1	40.2	0.0	145.1
Total liabilities	0.0	1,373.8	107.4	176.5	(228.1)	1,429.6
Koppers shareholders' equity	90.5	90.1	745.0	578.4	(1,413.6)	90.4
Noncontrolling interests	0.0	0.0	0.0	11.7	0.0	11.7
Total liabilities and equity	\$ 90.5	\$ 1,463.9	\$ 852.4	\$ 766.6	\$ (1,641.7)	\$ 1,531.7

Condensed Consolidating Balance Sheet
December 31, 2017

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
ASSETS						
Cash and cash equivalents	\$ 0.0	\$ 0.7	\$ 0.0	\$ 59.6	\$ 0.0	\$ 60.3
Receivables, net	0.0	48.6	27.7	84.6	0.0	160.9
Affiliated receivables	0.6	19.4	(83.0)	(12.1)	75.1	0.0
Inventories, net	0.0	80.4	40.5	117.9	(1.9)	236.9
Deferred tax assets	0.0	0.0	0.0	(0.1)	0.1	0.0
Other current assets	0.0	6.6	23.0	18.8	0.2	48.6
Total current assets	0.6	155.7	8.2	268.7	73.5	506.7
Equity investments	99.3	716.3	276.8	(0.1)	(1,092.3)	0.0
Property, plant and equipment, net	0.0	155.2	47.3	125.5	0.0	328.0
Goodwill	0.0	0.8	153.1	34.3	0.0	188.2
Intangible assets, net	0.0	7.2	96.7	25.7	0.0	129.6
Deferred tax assets	0.0	29.4	(13.2)	2.2	0.0	18.4
Affiliated loan receivables	0.0	34.9	224.3	21.4	(280.6)	0.0
Other assets	0.0	4.4	15.3	9.6	0.0	29.3
Total assets	\$ 99.9	\$ 1,103.9	\$ 808.5	\$ 487.3	\$ (1,299.4)	\$ 1,200.2
LIABILITIES AND EQUITY						
Accounts payable	\$ 0.0	\$ 65.1	\$ 32.4	\$ 44.4	\$ 0.0	\$ 141.9
Affiliated payables	0.0	(90.3)	13.8	2.2	74.3	0.0
Accrued liabilities	0.0	59.9	16.4	51.6	0.0	127.9
Current maturities of long-term debt	0.0	0.1	0.0	11.3	0.0	11.4
Total current liabilities	0.0	34.8	62.6	109.5	74.3	281.2
Long-term debt	0.0	643.3	0.0	22.3	0.0	665.6
Affiliated debt	0.0	233.7	19.3	27.6	(280.6)	0.0
Other long-term liabilities	0.0	92.0	14.4	41.2	0.0	147.6
Total liabilities	0.0	1,003.8	96.3	200.6	(206.3)	1,094.4
Koppers shareholders' equity	99.9	100.1	712.2	280.8	(1,093.1)	99.9
Noncontrolling interests	0.0	0.0	0.0	5.9	0.0	5.9
Total liabilities and equity	\$ 99.9	\$ 1,103.9	\$ 808.5	\$ 487.3	\$ (1,299.4)	\$ 1,200.2

Condensed Consolidating Statement of Cash Flows
For the Six Months Ended June 30, 2018

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Cash provided by (used in) operating activities	\$ 5.3	\$ (34.0)	\$ 9.7	\$ 29.5	\$ (7.4)	\$ 3.1
Cash provided by (used in) investing activities:						
Capital expenditures and acquisitions	0.0	(307.8)	(1.9)	(8.0)	0.0	(317.7)
Repayments (loans to) from affiliates	0.0	(0.4)	(8.2)	(3.7)	12.3	0.0
Insurance proceeds received	0.0	0.0	0.0	0.7	0.0	0.7
Net cash provided by divestitures and asset sales	0.0	(2.1)	0.0	3.6	0.0	1.5
Net cash (used in) provided by investing activities	0.0	(310.3)	(10.1)	(7.4)	12.3	(315.5)
Cash provided by (used in) financing activities:						
Borrowings (repayments) of long-term debt	0.0	332.4	0.0	(7.7)	0.0	324.7
Borrowings (repayments) of affiliated debt	0.0	21.8	0.5	(10.0)	(12.3)	0.0
Debt issuance costs	0.0	(2.9)	0.0	0.0	0.0	(2.9)
Dividends paid	0.0	(7.4)	0.0	0.0	7.4	0.0
Stock repurchased	(5.3)	0.0	0.0	0.1	0.0	(5.2)
Net cash provided by (used in) financing activities	(5.3)	343.9	0.5	(17.6)	(4.9)	316.6
Effect of exchange rates on cash	0.0	0.0	0.0	(2.0)	0.0	(2.0)
Net increase in cash and cash equivalents	0.0	(0.4)	0.1	2.5	0.0	2.2
Cash and cash equivalents at beginning of year	0.0	0.7	0.0	59.6	0.0	60.3
Cash and cash equivalents at end of period	\$ 0.0	\$ 0.3	\$ 0.1	\$ 62.1	\$ 0.0	\$ 62.5

Condensed Consolidating Statement of Cash Flows
For the Six Months Ended June 30, 2017

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Cash provided by (used in) operating activities	\$ 3.3	\$ (8.4)	\$ 26.4	\$ 12.0	\$ (2.0)	\$ 31.3
Cash provided by (used in) investing activities:						
Capital expenditures and acquisitions	0.0	(23.1)	(8.0)	(3.1)	0.0	(34.2)
Repayments (loans to) from affiliates	0.0	2.9	(12.5)	0.7	8.9	0.0
Repayment of loan	0.0	0.0	0.0	9.5	0.0	9.5
Net cash proceeds from divestitures and asset sales	0.0	0.0	0.5	0.3	0.0	0.8
Net cash (used in) provided by investing activities	0.0	(20.2)	(20.0)	7.4	8.9	(23.9)
Cash provided by (used in) financing activities:						
Repayments of long-term debt	0.0	30.0	0.0	(4.0)	0.0	26.0
Borrowings (repayments) of affiliated debt	0.0	11.6	(6.4)	3.7	(8.9)	0.0
Deferred financing cost	0.0	(11.0)	0.0	0.0	0.0	(11.0)
Dividends paid	0.0	(2.0)	0.0	0.0	2.0	0.0
Stock repurchased	(3.3)	0.0	0.0	0.0	0.0	(3.3)
Net cash provided by (used in) financing activities	(3.3)	28.6	(6.4)	(0.3)	(6.9)	11.7
Effect of exchange rates on cash	0.0	0.0	0.0	0.1	0.0	0.1
Net decrease in cash and cash equivalents	0.0	0.0	0.0	19.2	0.0	19.2
Cash and cash equivalents at beginning of year	0.0	0.0	0.0	20.8	0.0	20.8
Cash and cash equivalents at end of period	\$ 0.0	\$ 0.0	\$ 0.0	\$ 40.0	\$ 0.0	\$ 40.0

20. Related Party Transactions

During 2016, the Company sold its 30 percent interest in TKK. The Company had loaned \$10.0 million, gross of accumulated equity losses of \$1.1 million, to TKK, including interest. The loan and interest was fully repaid and the Company recorded a gain of \$1.3 million in 2017.

As disclosed in "Note 14 – Debt", KJCC has an outstanding loan from its 25-percent non-controlling shareholder. The loan totals \$2.5 million and matures in November 2018.

21. Fair Value Measurements

Carrying amounts and the related estimated fair values of the Company's financial instruments as of June 30, 2018 and December 31, 2017 are as follows:

	June 30, 2018		December 31, 2017	
	Fair Value	Carrying Value	Fair Value	Carrying Value
<i>(Dollars in millions)</i>				
Financial assets:				
Cash and cash equivalents, including restricted cash	\$ 62.5	\$ 62.5	\$ 60.3	\$ 60.3
Investments and other assets ^(a)	1.1	1.1	1.1	1.1
Financial liabilities:				
Long-term debt (including current portion)	\$ 1,003.5	\$ 1,013.5	\$ 706.9	\$ 688.7

(a) Excludes equity method investments.

Cash and cash equivalents – The carrying value approximates fair value because of the short maturity of those instruments.

Investments and other assets – Represents the broker-quoted cash surrender value on universal life insurance policies. This asset is classified as Level 2 in the valuation hierarchy and is measured from values received from financial institutions.

Debt – The fair value of the Company's long-term debt is estimated based on the market prices for the same or similar issues or on the current rates offered to the Company for debt of the same remaining maturities (Level 2). The fair value of the Company's revolving credit facility approximates carrying value due to the variable rate nature of this instrument.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This report and any documents incorporated herein by reference contain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 and may include, but are not limited to, statements about sales levels, acquisitions, restructuring, declines in the value of Koppers assets and the effect of any related impairment charges, profitability and anticipated expenses and cash outflows. All forward-looking statements involve risks and uncertainties. All statements contained herein that are not clearly historical in nature are forward-looking, and words such as "believe," "anticipate," "expect," "estimate," "may," "will," "should," "continue," "plans," "potential," "intends," "likely," or other similar words or phrases are generally intended to identify forward-looking statements. Any forward-looking statement contained herein, in press releases, written statements or documents filed with the Securities and Exchange Commission, or in Koppers communications and discussions with investors and analysts in the normal course of business through meetings, phone calls and conference calls, regarding expectations with respect to sales, earnings, cash flows, operating efficiencies, restructurings, product introduction or expansion, the benefits of acquisitions and divestitures, joint ventures or other matters as well as financings and debt reduction, are subject to known and unknown risks, uncertainties and contingencies. Many of these risks, uncertainties and contingencies are beyond our control, and may cause actual results, performance or achievements to differ materially from anticipated results, performance or achievements. Factors that might affect such forward-looking statements, include, among other things, the impact of changes in commodity prices, such as oil and copper, on product margins; general economic and business conditions; potential difficulties in protecting our intellectual property; the ratings on our debt and our ability to repay or refinance our outstanding indebtedness as it matures; our ability to operate within the limits of our debt covenants; potential impairment of our goodwill and/or long-lived assets; demand for Koppers goods and services; competitive conditions; interest rate and foreign currency rate fluctuations; availability and costs of key raw materials and unfavorable resolution of claims against us, as well as those discussed more fully elsewhere in this report and in documents filed with the Securities and Exchange Commission by Koppers, particularly our latest annual report on Form 10-K and subsequent filings. We caution you that the foregoing list of important factors may not contain all of the material factors that are important to you. In addition, in light of these risks and uncertainties, the matters referred to in the forward-looking statements contained in this report and the documents incorporated by reference herein may not in fact occur. Any forward-looking statements in this report speak only as of the date of this report, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after that date or to reflect the occurrence of unanticipated events.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited financial statements and related notes included in Item 1 of this Part I as well as the audited consolidated financial statements and the related notes included in our Annual Report on Form 10-K for the year ended December 31, 2017.

Overview

We are a leading integrated global provider of treated wood products, wood preservation chemicals, and carbon compounds. Our products and services are used in a variety of niche applications in a diverse range of end-markets, including the railroad, specialty chemical, utility, residential lumber, agriculture, aluminum, steel, rubber, and construction industries. We serve our customers through a comprehensive global manufacturing and distribution network, with manufacturing facilities located in North America, South America, Australasia, China and Europe.

We operate three principal businesses: Railroad and Utility Products and Services ("RUPS"), Performance Chemicals ("PC") and Carbon Materials and Chemicals ("CMC").

Through our RUPS business, we believe that we are the largest supplier of railroad crossties to the North American railroads. Our other treated wood products include utility poles for the electric and telephone utility industries in the United States and Australia. We also provide rail joint bar products as well as various services to the railroad industry. In April 2018, we re-entered the North American utility pole market with the acquisition of Cox Industries, Inc., which has been renamed Koppers Utility and Industrial Products Inc. ("UIP"). UIP manufactures and sells utility poles and construction and marine pilings through a network of eight manufacturing facilities and 19 distribution yards located throughout the United States. Through our PC business, we believe that we are the global leader in developing, manufacturing and marketing wood preservation chemicals and wood treatment technologies for use in the pressure treating of lumber for residential, industrial and agricultural applications. Our CMC business processes coal tar into a variety of products, including creosote, carbon pitch, carbon black feedstock, naphthalene and phthalic anhydride, which are intermediate materials necessary in the pressure treatment of wood, the production of aluminum, the production of carbon black, the production of high-strength concrete, and the production of plasticizers and specialty chemicals, respectively.

Outlook

Trend Overview

Our businesses and results of operations are affected by various competitive and other factors including (i) the impact of global economic conditions on demand for our products, including the impact of imported products from competitors in certain regions where we operate; (ii) raw material pricing and availability, in particular the cost and availability of hardwood lumber for railroad crossties and softwood lumber for utility poles, scrap copper prices, and the cost and amount of coal tar available in global markets, which is negatively affected by reductions in blast furnace steel production; (iii) volatility in oil prices, which impacts the cost of coal tar and certain other raw materials, as well as selling prices and margins for certain of our products including carbon black feedstock, phthalic anhydride, and naphthalene; (iv) competitive conditions in global carbon pitch markets; and (v) changes in foreign exchange rates.

Railroad and Utility Products and Services

The primary end-markets for RUPS is the North American railroad industry, which has an installed base of approximately 700 million wood crossties, and the investor-owned utility industry which utilizes wooden distribution and transmission poles. Both crossties and utility poles require periodic replacement. As a result, North American demand for crossties has historically been in the range of 22-25 million annually and the demand for distribution poles has historically been in the range of 2-3 million annually. We provide our customers with treated and untreated wood products, rail joint bars and services primarily for the railroad markets in the United States and Canada. In addition, we supply utility poles for the utility sector in the United States and Australia. In April 2018, we re-entered the North American utility pole market with the acquisition of UIP. UIP manufactures and sells treated wood poles and pilings through a network of eight manufacturing facilities and 19 distribution yards located throughout the United States. We also operate a railroad services business that conducts engineering, design, repair and inspection services primarily for railroad bridges in the U.S. and Canada.

The supply of untreated crossties can vary at times based upon weather conditions in addition to other factors. We have a nationwide wood procurement team that maintains close working relationships with a network of sawmills. We procure untreated crossties, either on behalf of our customers, or for future treating. We also procure switch ties and various other types of lumber used for railroad bridges and crossings. Untreated crossties go through a six- to nine-month air seasoning process before they are ready to be pressure treated. After the air seasoning process is complete, the crossties are pressure treated using creosote-only treatment or a combined creosote and borate treatment. During any given year, there is a seasonal effect in the winter months on our crosstie business depending on weather conditions for harvesting lumber and installation.

In 2018, the major companies in the rail industry have again substantially reduced both operating and capital spending from peak spending levels, which is anticipated to have a negative impact on sales of various products and services that we provide to that industry. Current year revenues and profitability have reflected a decline year-over-year due to the effects of lower demand caused by continued reductions in capital budgets for most North American Class I railroads. We currently supply all seven of the North American Class I railroads and have long-standing relationships with these customers. Approximately 70 percent of our North American sales are under long-term contracts and we believe that we are positioned to maintain or grow our current market position.

Over an economic cycle, the long-term prognosis for the railroad industry and the products and services that we provide to it are generally favorable. However, in the near-term, railroad customers have scaled back and are focusing on reducing their operating costs and working capital. According to the Association of American Railroads ("AAR"), the level of business activity for the railroad industry is dependent on, to a large extent, trends occurring in other sectors of the economy. In the recent past, the Class I railroads were highly dependent on the oil and gas and coal mining industries. Currently, the railroads are more correlated to trade relations, commodity prices and interest rates.

Rail traffic has been relatively positive, particularly in terms of traffic segments that are most sensitive to economic trends. For the six months ending June 30, 2018, total U.S. carload traffic was up a modest 1.3 percent from the same period last year; meanwhile, intermodal units were up 6.0 percent from the prior year period. For the year-to-date period through June 30, 2018, combined U.S. traffic for carloads and intermodal units was 3.7 percent higher than prior year.

Overall, the demand for crossties for the current year is expected to be relatively flat to slightly up over prior year. In terms of raw material, we are seeing less available inventory of untreated crossties from the saw mills and lumber prices have increased dramatically due to a wet winter affecting production. In addition, the overseas demand for hardwood is limiting our ability to get the necessary untreated crosstie supply and, as a result, driving up untreated tie pricing. The production constraint will be a challenge, although we expect that the tightened supply will have a continued positive impact on commercial pricing.

In addition, certain Class I railroads have shifted from a treatment-service only model to having suppliers hold untreated inventory until the crossties have been treated. Therefore, this will initially extend our sales and cash flow cycle by

approximately six months until the customer takes delivery and control of the treated crossties and our performance obligation is completed.

From a long-term perspective, there remains a need for sustained investment in infrastructure and capacity expansion. We believe that with our vertical integration capabilities in wood treatment and strong customer relationships, we will benefit from increased infrastructure and capacity expansion when it occurs.

Performance Chemicals

The largest geographic market for wood treating chemicals sold by our PC business is in North America, and the largest application for our products is the residential remodeling market. We also have a market presence in Europe, South America, Australia and New Zealand. We believe that PC is the largest global manufacturer and supplier of water-based wood preservatives and wood specialty additives to treaters who supply pressure treated wood products to large retailers and independent lumber dealers. These retailers and dealers, in turn, serve the residential, agricultural and industrial pressure-treated wood market. Our primary products are copper-based wood preservatives, including micronized copper azole ("MicroPro®") and micronized pigments ("MicroShades®").

In North America, we are vertically integrated due to our manufacturing capabilities for copper compounds for our copper-based wood preservatives. We believe our vertical integration is part of our proprietary processes and reflects an important competitive advantage. Applications for these products include decking, fencing, utility poles, construction lumber and other outdoor structures. We continue to invest in research and development activities at various locations around the world, particularly in areas that have high fungal decay and termite activity, in order to assess the performance and efficacy of various wood preservation systems.

As most of the products sold by PC are copper-based products, changes in the price and availability of copper can have a significant impact on product pricing and margins. We attempt to moderate the variability in copper pricing over time by entering into hedging transactions for the majority of our copper needs, which primarily range from six months up to 36 months. These hedges typically match expected customer purchases and receive hedge accounting treatment. From time to time, we enter into forward transactions based upon long-term forecasted needs of copper. These forward positions are typically marked to market on a quarterly basis.

Product demand for our PC business has historically been influenced by existing home sales, which is a leading indicator of consumer spending on remodeling projects. Overall, the market for existing homes continues to show mixed signals due to a severe housing shortage in certain markets. This dynamic is keeping home price growth elevated, pricing out would-be buyers and ultimately slowing sales. According to the National Association of Realtors® ("NAR"), existing home sales decreased for the third consecutive month in June, with sales for the month down by 0.6 percent from prior year, and sales for the year-to-date period through June 30 were 2.2 percent lower.

According to the Leading Indicator of Remodeling Activity ("LIRA") reported by the Joint Center for Housing Studies of Harvard University, homeowners are expected to increase spending on improvements and repairs over the coming year. The LIRA projects that annual growth in homeowner remodeling expenditure will taper somewhat in the first half of 2019, but still remain around seven percent and reach \$350 billion by mid-year 2019.

The Conference Board Consumer Confidence Index® decreased in June, standing at 126.4, down from 128.7 in April. The assessment of current conditions by consumers remain unchanged and while expectations remain high by historical standards, the modest curtailment in optimism suggests that consumers do not foresee the economy gaining much momentum in the months ahead.

From a margin perspective, our profitability has been unfavorably impacted by rising raw material costs, primarily due to copper pricing which began to trend higher in 2017 and continuing into 2018. Our strategy is to hedge a majority of our requirements over a two-to-three year time frame in order to provide short-term certainty of our cost structure by lessening the impact that may arise in commodity markets. We are currently experiencing an unfavorable impact of higher prices on the smaller unhedged portion of our copper requirements while also dealing with the higher average hedged cost for copper in the current year.

Carbon Materials and Chemicals

The primary products produced by CMC are creosote, which is a registered pesticide in the U.S. and used primarily in the pressure treatment of railroad crossties, and carbon pitch, which is sold primarily to the aluminum industry for the production of carbon anodes used in the smelting of aluminum. We have reduced capacity in our CMC plants in North America and Europe over the past several years to levels required to meet creosote demand in North America for the treatment of railroad crossties. We currently supply our North American RUPS business with 100 percent of its creosote requirements. As discussed in the RUPS outlook, there has been a decrease starting in 2017 with respect to spending for railroad infrastructure. This results in a shift in excess distillate production to the commodity carbon black feedstock market until demand for creosote returns to historical levels.

While the sale of carbon pitch remains a significant portion of our sales volume, the reduction of aluminum smelting capacity in the United States, Australia and Western Europe has led to sharply lower demand for carbon pitch over the past several years. Accordingly, we have experienced significantly lower sales volumes due to the reduction in aluminum production in parts of the world where the majority of our production facilities are located. During 2018, by contrast, aluminum production in the U.S. may increase to some extent as tariffs are being imposed on certain imported steel and aluminum products. This development may result in additional demand for carbon pitch in the United States.

The availability of coal tar, the primary raw material for our CMC business, is linked to levels of metallurgical coke production. As the global steel industry, excluding Asia, has reduced the production of steel using metallurgical coke, the volumes of coal tar have also been reduced. For the past decade, the coal tar distillation industry has operated in an excess capacity mode, which further increased the competition for a limited amount of coal tar in North America. Over the past three years we have consolidated our operating footprint and significantly lowered production levels at the same time that we added distribution assets to move finished products from Europe to the U.S. more efficiently. As a result, our raw material needs in North America have been significantly less than historically required. In the past twelve months, we entered into several new long-term supply agreements to further lower our overall input costs and redistribute our finished product pricing risk.

In recent quarters, there has been an overall tightened market supply of coal tar and carbon pitch in China and it has put upward pressure on both raw materials and finished product pricing. This is due to an ongoing shutdown of older steel and coking capacity that does not meet environmental and emissions requirements. In turn, the shutdowns have resulted in increased demand for products requiring coal tar pitch, including needle coke used for producing electrodes that go into electric arc steel production, which is the primary market that we serve in China. As a result, our recently constructed coal-tar distillation facility serving those markets has a competitive advantage. In early 2018, pricing for coal tar products in the region has moderated but remains relatively strong compared to prior year and is expected to stay at current levels in the near term. With respect to our largest customer in China, we believe that the pricing we have received has been understated for a number of quarterly periods. While we continue to engage in discussions with this customer and intend to resolve the disagreement in accordance with certain provisions in our contractual relationship, we have not recognized any incremental revenue associated with the higher price that we believe is more accurate.

In Australia, the market has also been favorable since pricing is correlated to the trends seen in China, but we expect that raw material price increases will catch up in the remainder of the year. We anticipate that these factors related to supply and demand are relatively temporary and pricing for coal tar products will likely moderate sometime in 2018, but could remain well above recent years' averages.

Going forward, another relevant consideration for this business segment relates to aluminum prices, which have been trending significantly higher globally. The stronger demand has had a positive effect on pricing for the key raw material that we provide to this industry.

CMC Restructuring Initiatives

We embarked on a plan to restructure our CMC operating footprint that reduced our global number of coal tar distillation facilities from the eleven that existed as of January 1, 2014 to four in total. The remaining facilities are located in regions where we believe we hold key competitive advantages that allow us to better serve our global customers: Stickney, Illinois; Nyborg, Denmark; Mayfield, Australia; and Jiangsu Province, China.

As a result of the reduction in operating capacity at the seven closed or sold coal tar distillation facilities, we have incurred substantial restructuring and impairment costs over the last four years. As a result of these initiatives, we expect additional restructuring and related charges to earnings of \$9.5 million to \$11.5 million through 2020. The overall expected future cash requirements for the CMC plant closures are estimated to be approximately \$30 million through 2020. There may be additional curtailments or closures at our other CMC facilities as part of our efforts to reduce our cost structure and improve capacity utilization in our business.

Through these restructuring initiatives, we are significantly transforming our CMC business model by streamlining the operating footprint and reducing our primary reliance on and exposure to the carbon pitch markets. In addition, the construction of a new naphthalene unit at our Stickney, Illinois, facility, which is expected to be completed in the third quarter of 2018, should result in additional production efficiencies and cost savings going forward. We believe that the extensive and ongoing efforts to reduce our fixed cost structure will result in a sustainable improvement in earnings in addition to lower volatility in cash flow.

Seasonality and Effects of Weather on Operations

Our quarterly operating results fluctuate due to a variety of factors that are outside of our control, including inclement weather conditions, which in the past have affected operating results. Operations at some of our facilities have at times been reduced during the winter months. Moreover, demand for some of our products declines during periods of inclement

weather. As a result of the foregoing, we anticipate that we may experience material fluctuations in quarterly operating results. Historically, our operating results have been significantly lower in the first and fourth calendar quarters as compared to the second and third calendar quarters.

Results of Operations – Comparison of Three Months Ended June 30, 2018 and 2017

Consolidated Results

Net sales for the three months ended June 30, 2018 and 2017 are summarized by segment in the following table:

	Three Months Ended June 30,		Net Change
	2018	2017	
(Dollars in millions)			
Railroad and Utility Products and Services	\$ 177.2	\$ 135.9	30%
Performance Chemicals	115.1	111.8	3%
Carbon Materials and Chemicals	143.7	130.3	10%
	\$ 436.0	\$ 378.0	15%

RUPS net sales increased by \$41.3 million or 30 percent compared to the prior year period. The sales increase was primarily due to the acquisitions of UIP and MAER in the current year as well as volume increases in the commercial tie and rail joint markets. These increases were offset by lower sales volumes of crossties in the Class I market. Sales of crossties in the Class I market declined by \$23.0 million primarily due to lower sales volumes as a result of decreased spending in the rail industry and certain Class I railroads have shifted from a treatment-service only model to having suppliers hold untreated inventory until the crossties have been treated.

PC net sales increased by \$3.3 million or three percent compared to the prior year period. The slightly higher sales were due primarily to favorable market trends and higher volumes in North America for copper-based wood preservatives. However, the favorable market trends were partially offset by increased lumber prices, which limited customer inventory and reduced customer demand for copper-based wood preservatives below expectations.

CMC net sales increased by \$13.4 million or ten percent compared to the prior year period due mainly to higher sales prices for carbon pitch, carbon black feedstock and naphthalene partially offset by reduced volumes of carbon pitch and phthalic anhydride. In Australasia and Europe, higher sales prices for carbon pitch and carbon black feedstock were driven primarily by reduced supply in those regions. In the past several quarters, the overall market has tightened for coal tar and carbon pitch in China due to an ongoing shutdown of steel and coking capacity that does not meet environmental and emissions requirements. The pricing for coal tar products in the region has increased significantly and as a result, we believe our coal-tar distillation facility serving those markets has a competitive advantage.

Cost of sales as a percentage of net sales was 81 percent for the quarter ended June 30, 2018 compared to 78 percent in the prior year quarter due mainly to lower gross margins for PC driven by higher raw material costs along with lower sales volumes and gross margins from RUPS due to reduced volumes of crossties in the Class I market.

Depreciation and amortization for the quarter ended June 30, 2018 was \$2.0 million higher when compared to the prior year period due mainly to assets placed in service over the past year related to our new naphthalene unit construction at our CMC plant in Stickney, Illinois along with depreciation and amortization from our new acquisitions.

Impairment and restructuring expenses for the quarter ended June 30, 2018 were \$0.7 million lower when compared to the prior year period. Charges consisted of restructuring-related storage tank decommissioning costs and accelerated depreciation for the remaining fixed assets at our coal tar distillation facilities in Clairton, Pennsylvania, primarily in the prior year period, and Follansbee, West Virginia, primarily in the current year period.

Selling, general and administrative expenses for the quarter ended June 30, 2018 were \$14.3 million higher when compared to the prior year period due primarily to \$11.9 million of acquisition-related expenses in the current year period, in addition to higher consulting costs and non-cash compensation expenses.

Other loss for the quarter ended June 30, 2018 was \$0.7 million due primarily to a loss on sale of assets in the United Kingdom within our PC segment of \$1.1 million.

Interest expense for the quarter ended June 30, 2018 was \$3.7 million higher when compared to the prior year period primarily due to the higher average debt level to fund our acquisitions of MAER and UIP.

Income taxes for the quarter ended June 30, 2018 were \$6.6 million, consistent with the prior year period. Current period tax expense is primarily related to a \$4.8 million tax expense based on new IRS guidance that was issued in April 2018 with respect to the Tax Act. Excluding that charge to tax expense, current period tax expense is lower than the prior period due to a decrease in pre-tax earnings. Taxes as a percentage of pre-tax profit for the three months ended June 30, 2018 and June 30, 2017 were 93.0 percent and 24.0 percent, respectively. The increase in this percentage is due to the previously-described tax expense based on new IRS guidance issued in April 2018 and due to a new provision of the Tax

Act that requires an income inclusion of foreign corporations' global intangible low-tax income ("GILTI") that is deemed to exceed a certain threshold return relative to the underlying business investment. See Note 10. Income Taxes, for additional information on our tax rate.

Segment Results

Segment operating profit for the three months ended June 30, 2018 and 2017 is summarized by segment in the following table:

	Three Months Ended June 30,		% Change
	2018	2017	
<i>(Dollars in millions)</i>			
Operating profit (loss):			
Railroad and Utility Products and Services	\$ (1.0)	\$ 11.3	-109%
Performance Chemicals	11.6	19.6	-41%
Carbon Materials and Chemicals	12.5	8.0	56%
Corporate	(0.8)	(0.8)	0%
	\$ 22.3	\$ 38.1	-41%
Operating profit (loss) as a percentage of net sales:			
Railroad and Utility Products and Services	(0.6)%	8.3%	-8.9%
Performance Chemicals	10.1%	17.5%	-7.4%
Carbon Materials and Chemicals	8.7%	6.1%	2.6%
	5.1%	10.1%	-5.0%

RUPS operating loss was \$1.0 million compared to operating profit of \$11.3 million in the prior year period. Operating loss as a percentage of net sales for RUPS was 0.6 percent compared to operating profit as a percentage of net sales of 8.3 percent in the prior year period. Operating loss as a percentage of net sales for the three months ended June 30, 2018 was impacted by reduced sales volumes of crossties to Class I customers. Additionally, we have experienced margin pressure from higher costs of raw material being provided by saw mills due to increased demand. The segment was also negatively impacted by \$5.5 million in the current year period due to inventory purchase price fair value adjustments from the UIP acquisition.

PC operating profit decreased by \$8.0 million or 41 percent compared to the prior year period. Operating profit as a percentage of net sales for PC decreased to 10.1 percent from 17.5 percent in the prior year quarter. Higher copper prices and selling, general and administrative costs more than offset our increase in sales for the three months ended June 30, 2018. In addition, the second quarter of 2018 was unfavorably impacted by a net amount of \$2.4 million due to mandated changes in how we account for unrealized gains and losses from our copper swap contracts as compared to the prior year quarter. Sales volumes slightly improved due to favorable market trends within Australasia in the agricultural, repair and remodeling markets; however, a change in sales mix contributed to an overall reduced margin.

CMC operating profit increased by \$4.5 million or 56 percent compared to the prior year period. Operating profit as a percentage of net sales for CMC increased to 8.7 percent from 6.1 percent in the prior year quarter. Operating profit for the three months ended June 30, 2018 was positively affected by higher sales prices in Australasia and Europe, particularly related to carbon pitch, as well as a benefit from a more streamlined and efficient cost structure. These positive impacts were partially offset by higher raw material costs in Europe and Australasia.

Corporate operating loss of \$0.8 million was consistent with the prior year period and includes foreign currency losses in each period.

Results of Operations – Comparison of Six Months Ended June 30, 2018 and 2017

Consolidated Results

Net sales for the six months ended June 30, 2018 and 2017 are summarized by segment in the following table:

	Six Months Ended June 30,		Net Change
	2018	2017	
<i>(Dollars in millions)</i>			
Railroad and Utility Products and Services	\$ 285.6	\$ 271.4	5%
Performance Chemicals	212.5	208.5	2%
Carbon Materials and Chemicals	344.0	244.7	41%
	\$ 842.1	\$ 724.6	16%

RUPS net sales increased by \$14.2 million or five percent compared to the prior year period. The sales increase was primarily due to the acquisitions of UIP and MAER in the current year as well as volume increases in the commercial tie and rail joint markets in the current year period. These increases were offset by lower sales volumes of crossties and railroad bridge services. Sales of Class I crossties and railroad bridge services declined by \$54.5 million. This was primarily due to decreased spending in the rail industry, particularly the Class I market as certain Class I railroads have shifted from a treatment-service only model to having suppliers hold untreated inventory until the crossties have been treated. Also, the railroad bridge business was affected by unfavorable weather conditions in various regions throughout the United States that caused project delays.

PC net sales increased by \$4.0 million or two percent compared to the prior year period. The slightly higher sales were due primarily to favorable market trends and higher volumes in North America for copper-based wood preservatives. However, the favorable market trends were partially offset by increased lumber prices, which limited customer inventory and reduced customer demand for copper-based wood preservatives below expectations, delays in North America due to inclement weather and higher customer development costs which are reflected as a reduction of sales.

CMC net sales increased by \$99.3 million or 41 percent compared to the prior year period due mainly to higher sales prices for carbon pitch, carbon black feedstock and naphthalene partially offset by reduced volumes in North America and Europe. In Australasia and Europe, higher sales prices for carbon pitch and carbon black feedstock were driven primarily by reduced supply in those regions. In the past several quarters, the overall market has tightened for coal tar and carbon pitch in China due to an ongoing shutdown of steel and coking capacity that does not meet environmental and emissions requirements. The pricing for coal tar products in the region has increased significantly and as a result, we believe our coal-tar distillation facility serving those markets has a competitive advantage.

Cost of sales as a percentage of net sales was 79 percent for the six months ended June 30, 2018 and 2017. Higher gross margins for CMC were driven by higher sales prices for carbon pitch, carbon black feedstock and naphthalene. These were offset by lower gross margins for PC driven by higher raw material costs in certain regions along with lower sales volumes and gross margins from RUPS due to reduced sales volumes of crossties in the Class I market combined with reduced margins as a result of higher raw material supply costs.

Depreciation and amortization for the six months ended June 30, 2018 was \$2.6 million higher when compared to the prior year period due mainly to assets placed in service over the past year related to our new naphthalene unit construction at our CMC plant in Stickney, Illinois along with depreciation and amortization from our acquisitions in the current year period.

Impairment and restructuring expenses for the six months ended June 30, 2018 were \$0.7 million lower when compared to the prior year period. Charges consisted of restructuring-related storage tank decommissioning costs and accelerated depreciation for the remaining fixed assets at our coal tar distillation facilities in Clairton, Pennsylvania primarily in the prior year period and Follansbee, West Virginia primarily in the current year period.

Selling, general and administrative expenses for the six months ended June 30, 2018 were \$21.5 million higher when compared to the prior year period due primarily to \$14.0 million of acquisition-related expenses and \$3.7 million from consulting fees and higher incentive and stock-based compensation expense.

Other income for the six months ended June 30, 2018 was \$2.2 million lower when compared to the prior year period due primarily to a loss on sale of assets in the United Kingdom within our PC segment of \$1.1 million during the current year period while the prior year period included a gain on our sale of a joint venture interest in China within our CMC segment of \$1.3 million.

Interest expense for the six months ended June 30, 2018 was \$3.6 million higher than the prior year period primarily due to the higher average debt level to fund our acquisitions of MAER and UIP.

Loss on extinguishment of debt for the six months ended June 30, 2018 was \$13.3 million lower when compared to the prior year period. In the prior year period, all of our senior notes due 2019 were repurchased at a premium to carrying value and accordingly, we realized a loss on extinguishment of debt totaling \$10.0 million consisting of \$7.3 million for bond premium and bond tender expenses and \$2.7 million for the writeoff of unamortized debt issuance costs. In addition, we repaid our term loan in full and entered into a new revolving credit facility and realized a loss of \$3.3 million for the writeoff of unamortized debt issuance costs related to the term loan.

Income taxes for the six months ended June 30, 2018 were \$15.8 million, an increase of \$8.2 million when compared to the prior period. The increase in tax expense is due to a higher effective income tax rate combined with an increase in pre-tax earnings when compared to the prior period. Additionally, tax expense is higher due to a \$4.8 million tax expense based on new IRS guidance that was issued in April 2018 with respect to the Tax Act. Income taxes as a percentage of pre-tax income for the six months ended June 30, 2018 and June 30, 2017 were 39.4 percent and 22.9 percent, respectively. The increase in this percentage is due to the previously-described tax expense based on new IRS guidance issued in April 2018 and due to a new provision of the Tax Act that requires an income inclusion of foreign corporations'

global intangible low-tax income ("GILTI") that is deemed to exceed a certain threshold return relative to the underlying business investment. See Note 10. Income Taxes, for additional information on our tax rate.

Segment Results

Segment operating profit for the six months ended June 30, 2018 and 2017 is summarized by segment in the following table:

	Six Months Ended June 30,		% Change
	2018	2017	
<i>(Dollars in millions)</i>			
Operating profit (loss):			
Railroad and Utility Products and Services	\$ 0.1	\$ 20.6	-100%
Performance Chemicals	17.2	38.2	-55%
Carbon Materials and Chemicals	49.7	8.6	478%
Corporate	(1.4)	(1.2)	-17%
	\$ 65.6	\$ 66.2	-1%
Operating profit as a percentage of net sales:			
Railroad and Utility Products and Services	0.0%	7.6%	-7.6%
Performance Chemicals	8.1%	18.3%	-10.2%
Carbon Materials and Chemicals	14.4%	3.5%	10.9%
	7.8%	9.1%	-1.3%

RUPS operating profit decreased by \$20.5 million compared to the prior year period. Operating profit for the six months ended June 30, 2018 was impacted by reduced sales volumes of crossties to Class I customers and lower activity levels in the railroad bridge services related to weather delays. Additionally, we have experienced margin pressure from higher costs of raw material being provided by saw mills due to increased demand. The segment was also negatively impacted by \$5.5 million in the current year period due to inventory purchase price fair value adjustments from the UIP acquisition.

PC operating profit decreased by \$21.0 million or 55 percent compared to the prior year period. Operating profit as a percentage of net sales for PC decreased to 8.1 percent from 18.3 percent in the prior year period. Higher copper prices and selling, general and administrative costs more than offset our increase in sales for the six months ended June 30, 2018. In addition, the current year period was unfavorably impacted by a net amount of \$8.5 million due to changes in unrealized gains and losses from our copper swap contracts as compared to the prior year period. Sales volumes slightly improved due to favorable market trends within Australasia in the agricultural, repair and remodeling markets; however, a change in sales mix contributed to an overall reduced margin.

CMC operating profit increased by \$41.1 million or 478 percent compared to the prior year period. Operating profit as a percentage of net sales for CMC increased to 14.4 percent from 3.4 percent in the prior year period. Operating profit for the six months ended June 30, 2018 was positively affected by higher sales prices across the segment, particularly related to carbon pitch, and a more streamlined and efficient cost structure. These positive impacts were partially offset by lower sales volumes in North America, China and Europe and higher raw material costs in Europe and Australasia.

Corporate operating loss increased by \$0.2 million or 17 percent compared to the prior year period due to increased foreign currency losses in the current year period.

Cash Flow

Net cash provided by operating activities for the six months ended June 30, 2018 was \$3.1 million compared to net cash provided by operating activities of \$31.3 million in the prior year period. The net decrease of \$28.2 million in cash provided by operations was due primarily to higher working capital usage of \$33.6 million compared to the prior year period principally as a result of an increase in inventory of \$26.1 million as certain Class I railroad customers within RUPS have shifted from a treatment-service only model to having suppliers hold untreated inventory until the crossties have been treated and an additional increase in inventory from CMC is due to an increase in raw material prices as well as an increase in coal tar distillation during the current year period.

Net cash used in investing activities amounted to \$315.5 million for the six months ended June 30, 2018 compared to net cash used in investing activities of \$23.9 million in the prior year period. The increase in cash used for investing activities of \$291.6 million is primarily due to \$264.1 million of net cash used for acquisitions as well as current year capital expenditures to expand production capacity at PC in the United States and continued spending on the new naphthalene unit construction at our CMC plant in Stickney, Illinois.

Net cash provided by financing activities was \$316.6 million for the six months ended June 30, 2018 compared to \$11.7 million of net cash provided by financing activities in the prior year period. The cash provided by financing activities in the six months ended June 30, 2018, reflected net borrowings of \$324.7 million to primarily fund acquisitions and capital expenditures. The cash provided by financing activities in the prior year period reflected net borrowings of revolving credit of \$67.4 million and net repayments of long-term debt of \$41.4 million, payment of debt issuance costs of \$11.0 million from the issuance of new debt and repurchases of common stock of \$5.2 million.

Liquidity and Capital Resources

The Company has a \$600.0 million senior secured revolving credit facility and a \$100.0 million secured term loan (the "Revolving Credit Facility") with a maturity date of April 2023. The interest rate on the Revolving Credit Facility is variable and is based on LIBOR.

Restrictions on Dividends to Koppers Holdings

Koppers Holdings depends on the dividends from the earnings of Koppers Inc. and its subsidiaries to generate the funds necessary to meet its financial obligations, including the payment of any declared dividend of Koppers Holdings. The Revolving Credit Facility prohibits Koppers Inc. from making dividend payments to Koppers Holdings unless (1) such dividend payments are permitted by the indenture governing Koppers Inc.'s \$500 million Senior Notes due 2025 (the "2025 Notes"), (2) no event of default or potential default has occurred or is continuing under our Revolving Credit Facility, and (3) we are in pro forma compliance with our fixed charge coverage ratio covenant after giving effect to such dividend. The indenture governing the 2025 Notes restricts Koppers Inc.'s ability to finance our payment of dividends if (1) a default has occurred or would result from such financing, (2) Koppers Inc., or a restricted subsidiary of Koppers Inc. which is not a guarantor under the applicable indenture, is not able to incur additional indebtedness (as defined in the applicable indenture), and (3) the sum of all restricted payments (as defined in the applicable indenture) have exceeded the permitted amount (which we refer to as the "basket") at such point in time.

The basket is governed by a formula based on the sum of a beginning amount, plus or minus a percentage of Koppers Inc.'s consolidated net income (as defined in the applicable indenture), plus the net proceeds of Koppers Inc.'s qualified stock issuance or conversions of debt to qualified stock, plus the net proceeds from the sale of or a reduction in an investment (as defined in the applicable indenture) or the value of the assets of an unrestricted subsidiary which is designated a restricted subsidiary. At June 30, 2018, the basket totaled \$141.8 million. Notwithstanding such restrictions, the indenture governing the 2025 Notes permits an additional aggregate amount of \$0.30 per share each fiscal quarter to finance dividends on the capital stock of Koppers Holdings, whether or not there is any basket availability, provided that at the time of such payment, no default in the indenture has occurred or would result from financing the dividends.

In addition, certain required coverage ratios in Koppers Inc.'s Revolving Credit Facility may restrict the ability of Koppers Inc. to pay dividends. Koppers Holdings suspended its dividend in February 2015 and does not expect to declare any dividends for the foreseeable future.

Liquidity

Borrowings under the Revolving Credit Facility are secured by a first priority lien on substantially all of the assets of Koppers Inc., Koppers Holdings and their material domestic subsidiaries. The Revolving Credit Facility contains certain covenants for Koppers Inc. and its restricted subsidiaries that limit capital expenditures, additional indebtedness, liens, dividends and investments or acquisitions. In addition, such covenants give rise to events of default upon the failure by Koppers Inc. and its restricted subsidiaries to meet certain financial ratios.

As of June 30, we had \$176.2 million of unused revolving credit availability for working capital purposes after restrictions by various debt covenants and certain letter of credit commitments. As of June 30, 2018, \$33.8 million of commitments were utilized by outstanding letters of credit.

The following table summarizes our estimated liquidity as of June 30, 2018 (*dollars in millions*):

Cash and cash equivalents ⁽¹⁾	\$	62.5
Amount available under Revolving Credit Facility		176.2
Total estimated liquidity	\$	238.7

(1) Cash includes approximately \$57.1 million held by foreign subsidiaries.

Our estimated liquidity was \$263.6 million at December 31, 2017.

On April 10, 2018, we borrowed approximately \$200 million to fund the acquisition of UIP using our Revolving Credit Facility. Our remaining need for cash in the next twelve months relates primarily to contractual obligations which include debt service, purchase commitments and operating leases, as well as working capital, capital maintenance programs, liability transfers of closed facilities and the funding of plant consolidation and rationalizations. We may also use cash to pursue other potential strategic acquisitions or voluntary pension plan contributions. Capital expenditures in 2018, excluding acquisitions, if any, are expected to total approximately \$70 million to \$78 million and are expected to be primarily funded by cash from operations. We expect to utilize an additional \$30 to \$40 million of working capital during 2018, primarily due to increases in inventory and impacts on accounts receivable as we transition a customer to a revised railroad crosstie supply agreement.

Debt Covenants

The covenants that affect availability of the Revolving Credit Facility and which may restrict the ability of Koppers Inc. to pay dividends include the following financial ratios:

- The fixed charge coverage ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, is not permitted to be less than 1.10. The fixed charge coverage ratio at June 30, 2018 was 2.98.
- The secured leverage ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, is not permitted to exceed 3.25. The leverage ratio at June 30, 2018 was 2.31.

We are currently in compliance with all covenants governing the Revolving Credit Facility. Our continued ability to meet those financial ratios can be affected by events beyond our control, however, excluding possible acquisitions, we currently expect that our net cash flows from operating activities and funds available from our Revolving Credit Facility will be sufficient to provide for our working capital needs and capital spending requirements over the next twelve months.

Legal Matters

The information set forth in Note 18 to the Condensed Consolidated Financial Statements of Koppers Holdings Inc. included in Item 1 of this Part I is incorporated herein by reference.

Recently Issued Accounting Guidance

The information set forth in Note 2 to the Condensed Consolidated Financial Statements of Koppers Holdings Inc. included in Item 1 of this Part I is incorporated herein by reference.

Critical Accounting Policies

There have been no material changes to the Company's critical accounting policies as disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

Environmental and Other Matters

The information set forth in Note 18 to the Condensed Consolidated Financial Statements of Koppers Holdings Inc. included in Item 1 of this Part I is incorporated herein by reference.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

There are no material changes to the disclosure on this matter made in the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

ITEM 4. CONTROLS AND PROCEDURES

The Company's management, with the participation of the Chief Executive Officer and Chief Financial Officer, have evaluated the effectiveness of the Company's disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that these controls and procedures were effective as of the end of the period covered by this report. There was no change in the Company's internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Exchange Act) that occurred during the quarter ended June 30, 2018 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Beginning January 1, 2018, we implemented ASC 606, Revenue from Contracts with Customers. Although the new revenue standard is expected to have an immaterial impact on our ongoing net income, we did implement changes to our processes related to revenue recognition and the control activities with them. These included the development of new policies based on the five-step model provided in the new revenue standard, new training, ongoing contract review requirements, and gathering of information provided for disclosures.

On April 10, 2018, the Company acquired UIP and on February 28, 2018, the Company acquired MAER. In conducting our evaluation of the effectiveness of internal controls over financial reporting, we will elect to exclude UIP and MAER when conducting our annual evaluation of internal controls as permitted by applicable regulations. The Company is implementing internal controls over significant processes specific to the acquisitions that management believes are appropriate in consideration of related integration of operations, systems, control activities, and accounting for the acquisitions and acquisition-related transactions. As of the date of this Quarterly Report on Form 10-Q, we are in the process of further integrating the acquired UIP and MAER operations into our overall internal controls over financial reporting.

PART II—OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

The information set forth in Note 18 to the Condensed Consolidated Financial Statements of Koppers Holdings Inc. included in Item 1 of Part I of this report is incorporated herein by reference.

ITEM 1A. RISK FACTORS

There have been no material changes to the Risk Factors previously disclosed in Item 1A of the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Not applicable.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

Not applicable.

ITEM 6. EXHIBITS

10.120*	Form of Restricted Stock Unit Issuance Agreement – Time Vesting
10.121*	Form of Restricted Stock Unit Issuance Agreement – Performance Vesting
10.122*	Form of Restricted Stock Unit Issuance Agreement Non-Employee Director – Time Vesting
10.123*	Form of Notice of Grant of Stock Option
12.1*	Computation of ratio of earnings to fixed charges
31.1*	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

** Schedules and Exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Koppers Holdings Inc. agrees to furnish supplementally a copy of any omitted schedules and exhibits to the SEC upon request; provided, however, that Koppers Holdings Inc. reserves the right to request confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended, for any schedule or exhibit so furnished.

SIGNATURES

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

Date: August 9, 2018

KOPPERS HOLDINGS INC.
(REGISTRANT)

By: /s/ MICHAEL J. ZUGAY

Michael J. Zugay
Chief Financial Officer and Treasurer
(Principal Financial Officer,
Principal Accounting Officer and Duly Authorized Officer)

KOPPERS HOLDINGS INC.

RESTRICTED STOCK UNIT ISSUANCE AGREEMENT – TIME VESTING

RECITALS

- A. The Board has adopted the Plan for the purpose of retaining the services of selected Employees, non-employee members of the Board (or the board of directors of any Parent or Subsidiary) and consultants and other independent advisors who provide services to the Company (or any Parent or Subsidiary).
- B. Participant is to render valuable services to the Company (or a Parent or Subsidiary), and this Agreement is executed pursuant to, and is intended to carry out the purposes of, the Plan in connection with the Company's issuance of shares of Common Stock to Participant under the Plan.
- C. All capitalized terms in this Agreement shall have the meaning assigned to them in the attached Appendix A.

NOW, THEREFORE, it is hereby agreed as follows:

1. Grant of Restricted Stock Units. The Company hereby awards to Participant, as of the Award Date, Restricted Stock Units under the Plan. Each Restricted Stock Unit represents the right to receive one share of Common Stock on the specified issuance date following the vesting of that unit. The number of shares of Common Stock subject to the awarded Restricted Stock Units, the applicable vesting schedule for those shares, the date on which those vested shares shall become issuable to Participant and the remaining terms and conditions governing the award (the "Award") shall be as set forth in this Agreement.

AWARD SUMMARY

Award Date: [_____]

Number of Shares _____ shares of Common Stock (the "Shares")

Subject to Award:

Revised 1/25/18

Vesting Schedule: 25% of the Shares shall vest upon Participant's completion of a consecutive twelve (12)-month period of Service measured from the Award Date. 25% of the Shares shall vest upon Participant's completion of a consecutive twenty-four (24)-month period of Service measured from the Award Date. 25% of the Shares shall vest upon Participant's completion of a consecutive thirty-six (36)-month period of Service measured from the Award Date. 25% of the Shares shall vest upon Participant's completion of a consecutive forty-eight (48)-month period of Service measured from the Award Date.

However, one or more Shares may be subject to accelerated vesting in accordance with the provisions of Paragraph 5 of this Agreement.

Issuance Schedule: The Shares in which Participant vests in accordance with the foregoing Vesting Schedule shall become issuable immediately upon vesting (the "Issue Date"). Only a whole number of Restricted Stock Units will become vested as of any given Issue Date. If the number of Restricted Stock Units determined as of an Issue Date is a fractional number, the number vesting will be rounded down to the nearest whole number with any fractional portion carried forward. The actual issuance of the Shares shall be subject to the Company's collection of all applicable Withholding Taxes and shall be effected on the applicable Issue Date or as soon as administratively practicable thereafter, but in no event later than the close of the calendar year in which such Issue Date occurs or (if later) the fifteenth (15th) day of the third (3rd) calendar month following such Issue Date. The procedures pursuant to which the applicable Withholding Taxes are to be collected are set forth in Paragraph 6 of this Agreement.

2. Limited Transferability. Prior to the actual issuance of the Shares which vest hereunder, Participant may not transfer any interest in the Award or the underlying Shares; provided, however, any Shares which vest hereunder but which otherwise remain unissued at the time of Participant's death may be transferred pursuant to the provisions of Participant's will or the laws of inheritance or to Participant's designated beneficiary or beneficiaries of this Award. Participant may make a beneficiary designation for this Award at any time by filing the appropriate form with the Plan Administrator or its designee.

3. Cessation of Service. Except as otherwise provided in Paragraph 5 below, should Participant cease Service for any reason prior to vesting in one or more Shares subject to this Award, then the Award will be immediately cancelled with respect to those unvested Shares, and the number of Restricted Stock Units will be reduced accordingly. Participant shall thereupon cease to have any right or entitlement to receive any Shares under those cancelled units.

4. Stockholder Rights and Dividend Equivalents

(a) The holder of this Award shall not have any stockholder rights, including voting or dividend rights, with respect to the Shares subject to the Award until Participant becomes the record holder of those Shares following their actual issuance upon the Company's collection of the applicable Withholding Taxes.

(b) Notwithstanding the foregoing, should any cash dividend, whether regular or extraordinary, be declared and paid on the outstanding Common Stock while one or more Shares remain subject to this Award (i.e., those Shares are not otherwise issued and outstanding for purposes of entitlement to the dividend or distribution), then a special book account shall be established for Participant and credited with a dollar amount equal to the amount of that dividend paid per share multiplied by the number of Restricted Stock Units at the time subject to this Award (plus the number of additional shares previously credited to Participant pursuant to the dividend equivalent right provisions of this Paragraph 4) as of the record date for the dividend. As of the first business day in January each year, the cash dividend amounts credited to the special book account during the immediately preceding calendar year shall be converted into a book entry of an additional number of Restricted Stock Units determined by dividing (i) those cash dividend equivalent amounts by (ii) the average of the Fair Market Value

per share of Common Stock on each of the dates in the immediately preceding calendar year on which those dividends on the outstanding Common Stock were paid. The additional Restricted Stock Units so credited shall vest at the same time as the Shares to which they relate and shall be distributed to Participant concurrently with the issuance of those Shares on the applicable Issue Date. However, each such distribution shall be subject to the Company's collection of the Withholding Taxes applicable to that distribution.

5. Accelerated Vesting/Change in Control.

(a) Should Participant's Service terminate by reason of his or her Retirement, death or Permanent Disability prior to final vesting date set forth in Paragraph 1, then Participant shall immediately vest in the additional number of Shares (if any) in which Participant would have been vested at the time of such termination had 25% of the Shares that were scheduled to be vested on the next anniversary of the Award Date instead vested in a series of twelve (12) successive equal monthly installments over the duration of the twelve (12) month period preceding such Award Date.

(b) Any Restricted Stock Units subject to this Award at the time of a Change in Control may be assumed by the successor entity or otherwise continued in full force and effect or may be replaced with a cash retention program of the successor entity which preserves the Fair Market Value of the unvested shares of Common Stock subject to the Award at the time of the Change in Control and provides for subsequent payout of that value in accordance with the same (or more favorable) vesting schedule in effect for the Award at the time of such Change in Control. In the event of such assumption or continuation of the Award or such replacement of the Award with a cash retention program, no accelerated vesting of the Restricted Stock Units shall occur at the time of the Change in Control.

(c) In the event the Award is assumed or otherwise continued in effect, the Restricted Stock Units subject to the Award shall be adjusted immediately after the consummation of the Change in Control so as to apply to the number and class of securities into which the Shares subject to those units immediately prior to the Change in Control would have been converted in consummation of that Change in Control had those Shares actually been issued and outstanding at that time. To the extent the actual holders of the outstanding Common Stock receive cash consideration for their Common Stock in consummation of the Change in Control, the successor corporation (or parent entity) may, in connection with the assumption or continuation of the Restricted Stock Units subject to the Award at that time, substitute one or more shares of its own common stock with a fair market value equivalent to the cash consideration paid per share of Common Stock in the Change in Control transaction, provided such common stock is readily tradable on an established U.S. securities exchange or market.

(d) If the Restricted Stock Units subject to this Award at the time of the Change in Control are not assumed or otherwise continued in effect or replaced with a cash retention program in accordance with Paragraph 5(b), then those units will vest immediately prior to the closing of the Change in Control. The Shares subject to those vested units, together with any other Shares in which Participant is at that time vested, will be issued on the Issue Date triggered by the Change in Control (or otherwise converted into the right to receive the same consideration per share of Common Stock payable to the other stockholders of the Company in consummation of that Change in Control and distributed at the same time as such stockholder payments), subject to the Company's collection of the applicable Withholding Taxes pursuant to the provisions of Paragraph 6. For purposes of this Paragraph 5(d), the Issue Date shall be the effective date of the Change in Control so long as it qualifies as a "change in the ownership or

effective control” of the Company within the meaning of Section 409A(a)(2)(A)(v) of the Code. If it does not so qualify, the Restricted Stock Units shall be vested as of the date of the Change in Control and shall settle on the scheduled Issue Dates in accordance with the schedule set forth in the Award Summary.

(e) Upon an involuntary termination of Participant’s Service for reasons other than Misconduct within twenty-four (24) months following a Change in Control transaction which does not otherwise result in the accelerated vesting of the Restricted Stock Units pursuant to the provisions of subparagraph (d) of this Paragraph 5, all unvested Restricted Stock Units hereunder shall immediately vest at that time. Any unvested cash account maintained on Participant’s behalf pursuant to the cash retention program established in accordance with subparagraph (b) of this Paragraph 5 shall also vest at the time of such involuntary termination. The Issue Date for such vested Shares or cash shall be the date of such termination of Service (subject to any six-month payment delay to the extent required to comply with Section 409A of the Code), so long as the Change in Control qualifies as a “change in the ownership or effective control” of the Company within the meaning of Section 409A(a)(2)(A)(v) of the Code. If it does not so qualify, to the extent necessary to comply with the requirements of Section 409A of the Code, the Restricted Stock Units shall be vested as of the date of such termination of Service and shall settle on the scheduled Issue Dates in accordance with the schedule set forth in the Award Summary.

(f) This Agreement shall not in any way affect the right of the Company to adjust, reclassify, reorganize or otherwise change its capital or business structure or to merge, consolidate, dissolve, liquidate or sell or transfer all or any part of its business or assets.

6. Collection of Withholding Taxes.

(a) Upon the applicable Issue Date, the Company shall issue to or on behalf of Participant a certificate (which may be in electronic form) for the applicable number of underlying shares of Common Stock, subject, however, to the Company’s collection of the applicable Withholding Taxes.

(b) Regardless of any action the Company or the Affiliate that employs the Participant (the “Employer”) takes with respect to any or all income tax, social insurance, payroll tax, fringe benefits tax, payment on account, or other tax-related items related to the Participant’s participation in the Plan and legally applicable to the Participant (“Tax-Related Items”), the Participant acknowledges that the ultimate liability for all Tax-Related Items owed by the Participant is and remains the Participant’s responsibility and that such amount may exceed the amount actually withheld by the Company and/or the Employer. The Participant further acknowledges that the Company and/or the Employer (i) makes no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Award, including the grant or vesting of the Restricted Stock Units, the issuance of Shares upon settlement of the Restricted Stock Units, the subsequent sale of Shares, and the receipt of any dividends or dividend equivalents; and (ii) does not commit and is under no obligation to structure the terms of the grant or any aspect of the Award to reduce or eliminate the Participant’s liability for Tax-Related Items or achieve any particular tax result. Further, if the Participant becomes subject to tax in more than one jurisdiction, the Participant acknowledges that the Company and/or the Employer (or former Employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(c) Until such time as the Company provides Participant with written or electronic notice to the contrary, the Company shall collect Withholding Taxes required to be withheld with respect to the vesting or issuance of the vested Shares hereunder (including shares attributable to the dividend equivalent rights provided under Paragraph 4) through an automatic share withholding procedure pursuant to which the Company will withhold, at the time of such vesting or issuance, a portion of the Shares with a Fair Market Value (measured as of the vesting or issuance date) equal to the amount of those taxes (the "Share Withholding Method"), as determined by the Company. Participant shall be notified in writing or electronically in the event such Share Withholding Method is no longer available.

(d) Should any Shares (including shares attributable to the dividend equivalent rights provided under Paragraph 4) be vested or be issued at a time when the Share Withholding Method is not available, then the Withholding Taxes required to be withheld with respect to those Shares shall be collected from Participant through either of the following alternatives:

- Participant's delivery of his or her separate check payable to the Company in the amount of such taxes, or
- the use of the proceeds from a next-day sale of the Shares issued to Participant, provided and only if (i) such a sale is permissible under the Company's trading policies governing the sale of Common Stock, (ii) Participant makes an irrevocable commitment, on or before the Issue Date for those Shares, to effect such sale of the Shares and (iii) the transaction is not otherwise deemed to constitute a prohibited loan under Section 402 of the Sarbanes-Oxley Act of 2002.

(e) Except as otherwise provided in Paragraph 4 and Paragraph 5(b) the settlement of all Restricted Stock Units which vest under the Award shall be made solely in shares of Common Stock. In no event, however, shall any fractional Shares be issued. Accordingly, the total number of shares of Common Stock to be issued pursuant to the Award shall, to the extent necessary, be rounded down to the next whole share in order to avoid the issuance of a fractional share.

7. Compliance with Laws and Regulations. The issuance of shares of Common Stock pursuant to the Award shall be subject to compliance by the Company and Participant with all applicable requirements of law relating thereto and with all applicable regulations of any stock exchange on which the Common Stock may be listed for trading at the time of such issuance.

8. Additional Conditions.

(a) The Company may cancel this Award, and Participant shall cease to have any further right to the underlying Shares, at any time Participant is not in compliance with this Agreement, the Plan and the following conditions:

(i) Participant shall not render services for any organization or engage, directly or indirectly, in any business which, in the judgment of the Plan Administrator or, if delegated by the Plan Administrator to the Chief Executive Officer, in the judgment of such officer, is or becomes competitive with the Company or any Affiliate, or which is or becomes otherwise prejudicial to or in conflict with the interests of the Company or any Affiliate. Such judgment shall be based on Participant's positions and responsibilities while employed by the Company or an Affiliate, Participant's post-Service responsibilities and position with the other

organization or business, the extent of past, current and potential competition or conflict between the Company or an Affiliate and the other organization or business, the effect on customers, suppliers and competitors of Participant's assuming the post-Service position and such other considerations as are deemed relevant given the applicable facts and circumstances. Participant shall be free, however, to purchase as an investment or otherwise, stock or other securities of such organization or business so long as they are listed upon a recognized securities exchange or traded over the counter, and such investment does not represent a substantial investment to Participant or a greater than one percent (1%) equity interest in the organization or business.

(ii) Participant shall not, without prior written authorization from the Company, disclose to anyone outside the Company, or use in other than the Company's business, any secret or confidential information, knowledge or data, relating to the business of the Company or an Affiliate in violation of his or her agreement with the Company or the Affiliate.

(iii) Participant shall disclose promptly and assign to the Company or the Affiliate all right, title and interest in any invention or idea, patentable or not, made or conceived by Participant during employment by the Company or the Affiliate, relating in any manner to the actual or anticipated business, research or development work of the Company or the Affiliate and shall do anything reasonably necessary to enable the Company or the Affiliate to secure a patent where appropriate in the United States and in foreign countries.

(iv) Participant shall not in any way, directly or indirectly (a) induce or attempt to induce any employee of the Company to quit employment with the Company; (b) otherwise interfere with or disrupt the Company's relationship with its employees; (c) solicit, entice, or hire away any employee of the Company; or (d) hire or engage any employee of the Company or any former employee of the Company whose employment with the Company ceased less than one (1) year before the date of such hiring or engagement.

(v) Participant will not divert or attempt to divert from the Company any business the Company had enjoyed or solicited from its customers during the two (2) years prior to the diversion or attempted diversion of such business.

(vi) Participant shall not make any disparaging statements about the Company to any of the Company's past, present, or future customers, employees, clients, contractors, vendors, or to the media or to any other person either orally or by any other medium of communication, including internet communication. As used herein, the term "disparaging statement" means any communication, oral or written, which would cause or tend to cause humiliation or embarrassment or to cause a recipient of such communication to question the business condition, integrity, product, service, quality, confidence, or good character of the Company.

(b) Notwithstanding any other provision of the Plan or this Agreement, the Plan Administrator in its sole discretion may cancel this Award at any time prior to the issuance of the Shares, if the employment of Participant shall be terminated, other than by reason of death, unless the conditions in this Paragraph 8 are met.

(c) Failure to comply with the conditions of this Paragraph 8 prior to, or during the six months after, any payment or delivery pursuant to this Award shall cause the issuance of the Shares to be rescinded. The Company shall notify Participant in writing of any such rescission within two (2) years after delivery of the Shares, and within ten (10) days after receiving such notice, Participant shall either return the delivered Shares to the Company or pay

to the Company the amount of the proceeds recognized upon any sale or other disposition of those Shares.

(d) Upon delivery of the Shares pursuant to this Award, the Plan Administrator may require Participant to certify on a form acceptable to the Plan Administrator, that Participant is in compliance with the terms and conditions of the Plan and this Agreement.

(e) In accordance with Section 6(e)(xx) of the Plan, this Award, and the right to receive and retain any Shares or cash payments covered by this Award, shall be subject to rescission, cancellation or recoupment, in whole or part, if and to the extent so provided under any "clawback" or similar policy of the Company in effect on the Award Date or that may be established thereafter, including any modification or amendment thereto, or as required by the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or other applicable law.

(f) By accepting this Award under the Plan, Participant agrees and acknowledges that Participant is obligated to cooperate with, and provide any and all assistance necessary to, the Company to recover or recoup any Award or amounts paid under the Plan subject to claw-back pursuant to such law or policy. Such cooperation and assistance shall include, but is not limited to, executing, completing and submitting any documentation necessary to recover or recoup any Award or amounts paid pursuant to this Award.

9. Notices. Any notice required to be given or delivered to the Company under the terms of this Agreement shall be in writing and addressed to the Secretary of the Company at its principal corporate office at 436 Seventh Avenue, Pittsburgh, PA 15219. Except to the extent electronic notice is expressly authorized hereunder, any notice required to be given or delivered to Participant shall be in writing and addressed to Participant at the address indicated below Participant's signature line on this Agreement. All notices shall be deemed effective upon personal delivery (or electronic delivery to the extent authorized hereunder) or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

10. Successors and Assigns. Except to the extent otherwise provided in this Agreement, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the Company and its successors and assigns and Participant, Participant's assigns, the legal representatives, heirs and legatees of Participant's estate and any beneficiaries of the Award designated by Participant.

11. Construction. This Agreement and the Award evidenced hereby are made and granted pursuant to the Plan and are in all respects limited by and subject to the terms of the Plan. All decisions of the Plan Administrator with respect to any question or issue arising under the Plan or this Agreement shall be conclusive and binding on all persons having an interest in the Award. The provisions of the Plan are incorporated in this Agreement in their entirety. In the event of any conflict between the provisions of this Agreement and the Plan, the provisions of the Plan shall control. A Prospectus describing the Plan has been delivered to the Participant. The Plan itself is available upon request.

12. Governing Law. The interpretation, performance and enforcement of this Agreement shall be governed by the laws of the Commonwealth of Pennsylvania without resort to Pennsylvania's conflict-of-laws rules. Any arbitration, legal or equitable action, or any proceeding arising directly, indirectly, or otherwise in connection with, out of, related to, or from

the Agreement, or any provision hereof, shall exclusively be filed and adjudicated in Allegheny County, Pennsylvania and no other venue.

13. Employment at Will. Nothing in this Agreement or in the Plan shall confer upon Participant any right to continue in Service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company (or any Parent or Subsidiary employing or retaining Participant) or of Participant, which rights are hereby expressly reserved by each, to terminate Participant's Service at any time for any reason, with or without cause, unless such rights have otherwise been limited pursuant to a separate agreement between the Company (or any Parent or Subsidiary) and Participant.

14. Section 409A. This Award is intended to be excepted from coverage under, or compliant with the provisions of, Section 409 of the Code and the regulations promulgated thereunder ("Section 409A") and shall be construed accordingly. Notwithstanding the foregoing or any provision of the Plan to the contrary, if the Award is subject to the provisions of Section 409A (and not excepted therefrom), the provisions of the Plan and this Agreement shall be administered, interpreted and construed in a manner necessary to comply with Section 409A (or disregarded to the extent such provision cannot be so administered, interpreted, or construed). If any payments or benefits hereunder may be deemed to constitute nonconforming deferred compensation subject to taxation under the provisions of Section 409A, Participant agrees that the Company may, without the consent of Participant, modify the Agreement and the Award to the extent and in the manner the Company deems necessary or advisable or take such other action or actions, including an amendment or action with retroactive effect, that the Company deems appropriate in order either to preclude any such payments or benefits from being deemed "deferred compensation" within the meaning of Section 409A or to provide such payments or benefits in a manner that complies with the provisions of Section 409A such that they will not be taxable thereunder. Notwithstanding, the Company makes no representations and/or warranties with respect to compliance with Section 409A, and Participant recognizes and acknowledges that Section 409A could potentially impose upon Participant certain taxes or interest charges for which Participant is and shall remain solely responsible.

15. Further Assurances. The Participant agrees, upon demand of the Company or the Plan Administrator, to do all acts and execute, deliver and perform all additional documents, instruments, and agreements that may be reasonably required by the Company or the Plan Administrator, as the case may be, to implement the provisions and purposes of this Agreement and the Plan.

16. Additional Acknowledgments; Appendix B. By accepting this Award, the Participant acknowledges and agrees that this Award is subject to the general terms applicable to Awards granted to employees outside the U.S. set forth in Appendix B hereto. Appendix B constitutes part of this Agreement. The Participant acknowledges that he or she should review the provisions of Appendix B carefully, as this Award will be null and void absent the Participant's acceptance of such provisions. The Company reserves the right to impose other requirements on the Award to the extent that the Company determines it is necessary or advisable for legal or administrative reasons, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

IN WITNESS WHEREOF, the parties have executed this Agreement on the Award Date indicated above.

KOPPERS HOLDINGS INC.

A.

By: _____

Title: President and CEO

Participant _____

Signature: _____

Address: _____

B. _____

C. _____

APPENDIX A

DEFINITIONS

When used in this Agreement, the terms which are defined in the Plan shall have the meanings given to them in the Plan, as modified herein (if applicable). The following definitions shall be in effect under the Agreement:

- A. Agreement shall mean this Restricted Stock Unit Issuance Agreement.
- B. Award shall mean the award of restricted stock units made to Participant pursuant to the terms of this Agreement.
- C. Award Date shall mean the date the restricted stock units are awarded to Participant pursuant to the Agreement and shall be the date indicated in Paragraph 1 of the Agreement.
- D. Common Stock shall mean shares of the Company's common stock.
- E. Company shall mean Koppers Holdings Inc., a Pennsylvania corporation, and any successor corporation to all or substantially all of the assets or voting stock of Koppers Holdings Inc. which shall by appropriate action adopt the Plan.
- F. Misconduct shall mean the commission of any act of fraud, embezzlement or dishonesty by Participant, any unauthorized use or disclosure by Participant of confidential information or trade secrets of the Company (or any Parent or Subsidiary), or any other intentional misconduct by Participant adversely affecting the business or affairs of the Company (or any Parent or Subsidiary) in a material manner. The foregoing definition shall not in any way preclude or restrict the right of the Company (or any Parent or Subsidiary) to discharge or dismiss Participant or any other person in the Service of the Company (or any Parent or Subsidiary) for any other acts or omissions, but such other acts or omissions shall not be deemed, for purposes of the Plan or this Agreement, to constitute grounds for termination for Misconduct.
- G. Participant shall mean the person to whom the Award is made pursuant to the Agreement.
- H. Parent shall mean any corporation (other than the Company) in an unbroken chain of corporations ending with the Company, provided each corporation in the unbroken chain (other than the Company) owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.
- I. Plan shall mean the Company's 2018 Long Term Incentive Plan.
- J. Plan Administrator shall mean the committee(s) designated by the Board to administer the Plan.
- K. Retirement shall mean Participant's voluntary termination from Service (i) on or after his attainment of age sixty five (65), or (ii) on or after his attainment of age 55 with at

least ten (10) years of service, or involuntary termination from Service with at least thirty (30) years of service other than in connection with a termination for Misconduct. "Years of service" means Participant's total number of years of "accumulated service" as such term is defined with respect to salaried employees under the Retirement Plan for Koppers Inc. (regardless of whether Participant is eligible to receive a benefit under such plan).

L. Service shall mean Participant's performance of services for the Company (or any Parent or Subsidiary) in the capacity of an Employee, a non-employee member of the board of directors or a consultant or independent advisor. For purposes of this Agreement, Participant shall be deemed to cease Service immediately upon the occurrence of either of the following events: (i) Participant no longer performs services in any of the foregoing capacities for the Company (or any Parent or Subsidiary) or (ii) the entity for which Participant performs such services ceases to remain a Parent or Subsidiary of the Company, even though Participant may subsequently continue to perform services for that entity. Service shall not be deemed to cease during a period of military leave, sick leave or other personal leave approved by the Company; provided, however, that except to the extent otherwise required by law or expressly authorized by the Plan Administrator or by the Company's written policy on leaves of absence, no Service credit shall be given for vesting purposes for any period Participant is on a leave of absence.

M. Subsidiary shall mean any corporation (other than the Company) in an unbroken chain of corporations beginning with the Company, provided each corporation (other than the last corporation) in the unbroken chain owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.

N. Withholding Taxes shall mean the income (federal, state, local or other jurisdiction), payroll, employment or other taxes required to be withheld by the Company in connection with the Award (at vesting or otherwise), including any additional shares resulting from the dividend equivalent right provisions of the Award.

APPENDIX B

GENERAL TERMS APPLICABLE TO AWARDS
GRANTED TO EMPLOYEES OUTSIDE THE U.S.

This Appendix B includes additional or different terms and conditions that govern the Award if the Participant resides and/or works outside the U.S.

A. Data Privacy. *By accepting this Award, the Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Participant's personal data as described in this document and any other grant materials by and among, as applicable, the Company, the Employer, and any other Affiliate for the exclusive purpose of implementing, administering, and managing the Participant's participation in the Plan.*

*The Participant understands that the Company and the Employer hold certain personal information about the Participant, including, but not limited to, the Participant's name, home address, email address, telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company or any Affiliates, and details of any entitlement to shares of stock or equivalent benefits awarded, canceled, vested, unvested, or outstanding in the Participant's favor ("**Data**"), for the purpose of implementing, administering, and managing the Participant's participation in the Plan.*

The Participant understands that the Company, the Employer, or other Affiliates will transfer Data among themselves as necessary, and may each further transfer Data to any third party that is assisting the Company (or may assist the Company in the future) with the implementation, administration, and management of the Plan. The Participant understands that these recipients may be located in the United States, and that the United States may have different data privacy laws and protections from the Participant's country. The Participant understands that the Participant may request a list with the names and addresses of any potential recipients of Data by contacting the Participant's local human resources representative. The Participant authorizes the recipients to receive, possess, use, retain, and transfer Data, in electronic or other form, for the exclusive purposes of implementing, administering, and managing the Participant's participation in the Plan. The Participant understands that Data will be held only as long as is necessary to implement, administer, and manage the Participant's participation in the Plan.

The Participant understands that the Participant may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data, or refuse or withdraw the consents herein, in any case without cost, by contacting in writing the Participant's local human resources representative. Further, the Participant understands that the Participant is providing the consents herein on a purely voluntary basis. If the Participant does not consent, or if the Participant later seeks to revoke the Participant's consent, the status of Participant's employment or service with the Employer will not be affected; the only consequence of refusing or withdrawing the Participant's consent is that the Company would not be able to grant to the Participant Units or other awards or to administer or maintain such awards. Therefore, the Participant understands that refusing or withdrawing the Participant's consent may affect the Participant's ability to benefit from the Units. For more information on the consequences of the Participant's refusal to consent or withdrawal of consent,

the Participant understands that the Participant may contact the Participant's local human resources representative.

Further, upon request of the Company or the Employer, the Participant agrees to provide a separate executed data privacy consent form (or any other agreements or consents that may be required by the Company and/or the Employer) that the Company and/or the Employer may deem necessary to obtain from the Participant for the purpose of administering the Participant's participation in the Plan in compliance with the data privacy laws in the Participant's country, either now or in the future. The Participant understands and agrees that the Participant will not be able to participate in the Plan if the Participant fails to provide any such consent or agreement requested by the Company and/or the Employer.

B. Additional Acknowledgements. By entering into this Agreement and accepting the grant of Restricted Stock Units evidenced hereby, the Participant acknowledges, understands, and agrees that:

i. the Plan is established voluntarily by the Company, is discretionary in nature, and may be terminated by the Company at any time, except as otherwise set forth in the Plan;

ii. the grant of Restricted Stock Units is voluntary and occasional and does not create any contractual or other right to receive future awards of Restricted Stock Units or benefits in lieu of Restricted Stock Units, even if such awards have been awarded in the past;

iii. all decisions with respect to future awards, if any, will be at the sole discretion of the Company;

iv. this Award and the underlying Shares, and the income from and value of same, are not intended to replace any pension rights or compensation;

v. this Award and the underlying Shares, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, but not limited to, calculating any severance, resignation, termination, redundancy, dismissal, or end-of-service payments; bonuses; long-service awards; pension, retirement, or welfare benefits; or similar payments;

vi. unless otherwise agreed with the Company, this Award and the underlying Shares, and the income from and value of same, are not granted as consideration for, or in connection with, any service the Participant may provide as a director of any Affiliate;

vii. this Award is made solely by the Company, with principal offices at 436 Seventh Avenue, Pittsburgh, PA, U.S.A., and the Company is solely responsible for the administration of the Plan and the Participant's participation in the Plan;

viii. the future value of the Shares that may be delivered in settlement of the Restricted Stock Units (to the extent earned) is unknown, indeterminable, and cannot be predicted with certainty;

ix. no claim or entitlement to compensation or damages in favor of the Participant (or any person claiming through the Participant) shall arise from forfeiture of the Restricted Stock Units resulting from a termination of Service (for any reason whatsoever, whether or not such termination of Service is later found to be invalid or in breach of the employment laws in the jurisdiction where the Participant is employed or providing services or the terms of the Participant's employment or service agreement, if any) or recoupment of all or any portion of any payment made pursuant to the Restricted Stock Units as provided by any Company policy on recoupment of incentive compensation;

x. for purposes of the Restricted Stock Units, the Participant's termination of Service occurs as of the date the Participant is no longer actively employed and providing services to the Company or one of its Affiliates (for any reason whatsoever, whether or not such termination of Service is later found to be invalid or in breach of the employment laws in the jurisdiction where the Participant is employed or providing services or the terms of the Participant's employment or service agreement, if any), and unless otherwise expressly provided in this Agreement or otherwise determined by the Company, the Participant's right to vest in any portion of the Award under the Plan, if any, will terminate as of such date and will not be extended by any notice period (e.g., the Participant's active employment or period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under the employment laws in the jurisdiction where the Participant is employed or providing services or the terms of the Participant's employment or service agreement, if any); the Company, in its sole discretion, shall determine when the Participant is no longer actively employed or providing services for purposes of the Award (including whether the Participant may still be considered to be actively employed or providing services while on a leave of absence);

xi. unless otherwise provided in the Plan or by the Company in its discretion, the Restricted Stock Units and the benefits evidenced by this Agreement do not create any entitlement to have the Units or any such benefits transferred to, or assumed by, another company nor to be exchanged, cashed out, or substituted, in connection with any corporate transaction affecting the Shares; and

xii. neither the Company, the Employer, nor any other Affiliate shall be liable for any foreign exchange rate fluctuation between the Participant's local currency and the United States Dollar that may affect the value of the Restricted Stock Units, any payment made pursuant to the Restricted Stock Units, or the subsequent sale of any Shares acquired under the Plan.

C.No Advice Regarding Grant. The Company is not providing any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Participant's participation in the Plan, acquisition of any Shares under the Plan, or subsequent sale of such Shares. The Participant should consult with the Participant's personal tax, legal, and financial advisors regarding the Participant's participation in the Plan before taking any action in relation thereto.

D. Language. The Participant acknowledges that he or she is proficient in the English language and understands the content of this Agreement and other Plan-related materials. If the Participant has received this Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version differs from the English version, the English version shall control.

E. Electronic Delivery and Acceptance. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. The Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

F. Foreign Asset/Account Reporting Requirements. The Participant acknowledges that there may be certain foreign asset and/or account reporting requirements that may affect the Participant's ability to acquire or hold Shares acquired under the Plan (or cash received from participating in the Plan) in a brokerage or bank account outside of the Participant's country. The Participant may be required to report such accounts, assets, or transactions to the tax or other authorities in his or her country. The Participant may also be required to repatriate sale proceeds or other funds received as a result of participating in the Plan to the Participant's country through a designated bank or broker within a certain time after receipt. The Participant acknowledges that it is his or her responsibility to be compliant with such regulations and the Participant should speak to his or her personal advisor on this matter.

KOPPERS HOLDINGS INC.

RESTRICTED STOCK UNIT ISSUANCE AGREEMENT- PERFORMANCE VESTING

RECITALS

- A. The Board has adopted the Plan for the purpose of retaining the services of selected Employees, non-employee members of the Board (or the board of directors of any Parent or Subsidiary) and consultants and other independent advisors who provide services to the Company (or any Parent or Subsidiary).
- B. Participant is to render valuable services to the Company (or a Parent or Subsidiary), and this Agreement is executed pursuant to, and is intended to carry out the purposes of, the Plan in connection with the Company's issuance of shares of Common Stock to Participant under the Plan.
- C. All capitalized terms in this Agreement shall have the meaning assigned to them in the attached Appendix A.

NOW, THEREFORE, it is hereby agreed as follows:

1. Grant of Restricted Stock Units. The Company hereby awards to Participant, as of the Award Date, Restricted Stock Units under the Plan. Except as otherwise provided in this Agreement, the Restricted Stock Units shall vest on [], provided (i) the Participant continues in Service until [], and (ii) the pre-established performance objective tied to Relative TSR (as defined in Schedule I attached hereto) measured over a specified period is attained. Each Restricted Stock Unit which so vests shall entitle Participant to receive one share of Common Stock on the specified issue date. The number of shares of Common Stock subject to the awarded Restricted Stock Units, the applicable performance target for the vesting of those shares, the alternative and special vesting provisions which may become applicable to such shares, the date on which the vested shares shall become issuable (or, under certain circumstances, the cash equivalent thereof shall become payable) to Participant and the remaining terms and conditions governing the award (the "Award") shall be as set forth in this Agreement.

AWARD SUMMARY

Award Date: []

Target Number _____ shares of Common Stock (the "Shares"); provided, however,
of _____ Shares that the actual number of Restricted Stock Units shall be determined in
Subject _____ to accordance with the provisions of Schedule I attached hereto.

Award:

Revised 5/1/18

Vesting Schedule: The Shares shall vest on [____], provided (i) the Participant continues in Service until [____], and (ii) the Performance Objective set forth in the attached Schedule I is attained over the Measurement Period. However, the Shares may also vest in accordance with the special vesting provisions of Paragraph 5 of this Agreement.

Issuance Schedule: The Shares in which Participant vests in accordance with the foregoing Vesting Schedule shall become issuable on [____], (or upon the date of an earlier Change in Control, or six months after the date of an earlier involuntary termination other than for Misconduct following a Change in Control, if so provided herein) (the "Issue Date"). The actual issuance of the Shares shall be subject to the Company's collection of all applicable Withholding Taxes and shall be effected on the applicable Issue Date or as soon as administratively practicable thereafter, but in no event later than the close of the calendar year in which such Issue Date occurs or (if later) the fifteenth (15th) day of the third (3rd) calendar month following such Issue Date. The procedures pursuant to which the applicable Withholding Taxes are to be collected are set forth in Paragraph 6 of this Agreement.

Notwithstanding the foregoing, or anything contained herein to the contrary, the Committee has the discretion to provide for the payment of vested Shares in cash, rather than Shares. In the event the Committee exercises such discretion, all references herein to payment in Shares or the right to receive Shares shall be replaced with references to payment in cash and/or the right to receive payment in cash equal to the Fair Market Value of the Shares on the date the Committee certifies the attainment of the Performance Objective.

2. Limited Transferability. Prior to the actual issuance of the Shares which vest hereunder, Participant may not transfer any interest in the Award or the underlying Shares; provided, however, any Shares which vest hereunder but which otherwise remain unissued at the time of Participant's death may be transferred pursuant to the provisions of Participant's will or the laws of inheritance or to Participant's designated beneficiary or beneficiaries of this Award. Participant may make a beneficiary designation for this Award at any time by filing the appropriate form with the Plan Administrator or its designee.

3. Cessation of Service. Except as otherwise provided in Paragraph 5 below, should Participant cease Service for any reason prior to vesting in one or more Shares subject to this Award, then the Award will be immediately cancelled with respect to those unvested Shares. Participant shall thereupon cease to have any right or entitlement to receive any Shares under those cancelled units.

4. Stockholder Rights and Dividend Equivalents

(a) The holder of this Award shall not have any stockholder rights, including voting or dividend rights, with respect to the Shares subject to the Award until Participant becomes the record holder of those Shares following their actual issuance upon the Company's collection of the applicable Withholding Taxes.

(b) Notwithstanding the foregoing, should any cash dividend, whether regular or extraordinary, be declared and paid on the outstanding Common Stock while one or more Shares remain subject to this Award (i.e., those Shares are not otherwise issued and outstanding for purposes of entitlement to the dividend or distribution), then a special book account shall be established for Participant and credited with a dollar amount equal to the amount of that dividend paid per share multiplied by the number of Restricted Stock Units at the time subject to this Award (plus the number of additional shares previously credited to Participant pursuant to the dividend equivalent right provisions of this Paragraph 4) as of the record date for the dividend. As of the first business day in January each year, the cash dividend amounts credited to the special book account during the immediately preceding calendar year shall be converted into a book entry of an additional number of Restricted Stock Units determined by dividing (i) those cash dividend equivalent amounts by (ii) the average of the Fair Market Value per share of Common Stock on each of the dates in the immediately preceding calendar year on which those dividends on the outstanding Common Stock were paid. The additional Restricted Stock Units so credited shall vest at the same time as the Shares to which they relate and shall be distributed to Participant concurrently with the issuance of those Shares on the applicable Issue Date. However, each such distribution shall be subject to the Company's collection of the Withholding Taxes applicable to that distribution.

5. Special Vesting/Change in Control.

(a) Should Participant's Service terminate by reason of his or her Retirement, death or Permanent Disability prior to [], then on [], Participant shall vest in a number of Shares equal to the number of Shares (if any) in which Participant would have been vested at [], had Participant continued in the Company's Service through [], *multiplied by a fraction*, the numerator of which is the number of days of Service Participant completed between the Award Date and the termination of Participant's Service, and the denominator of which is the number of days from the Award Date to []. In the event of the termination of Participant's Service due to Participant's Retirement, such vesting shall be conditioned upon Participant's compliance with the conditions of Paragraph 8 through [].

(b) Any Restricted Stock Units subject to this Award at the time of a Change in Control may be assumed by the successor entity or otherwise continued in full force and effect or may be replaced with a cash retention program of the successor entity which preserves the Fair Market Value of the unvested shares of Common Stock subject to the Award at the time of the Change in Control and provides for subsequent payout of that value in accordance with the same (or more favorable) vesting schedule in effect for the Award at the time of such Change in Control. In the event of such assumption or continuation of the Award or such replacement of the Award with a cash retention program, no accelerated vesting of the Restricted Stock Units shall occur at the time of the Change in Control. However, in the event that the Change in Control occurs prior to the end of the Measurement Period, the vesting provisions in effect for the Award following the Change in Control shall no longer be tied to the attainment of the full Performance Objective set forth in Schedule I and shall instead be converted into the following vesting schedule: The Award (whether in its assumed or continued form or as converted into a cash retention program) shall vest with respect to the number of Shares (or the amount of cash) determined under Paragraph 5(c) below upon Participant's continuation in Service through []. Following the completion of such Service vesting period, the securities, cash or other property underlying the vested Award shall be issued on the applicable Issue Date. The Award

may also vest in accordance with the special vesting provisions of Paragraphs 5(a) and (e) of this Agreement.

(c) In the event the Award is assumed or otherwise continued in effect, the Restricted Stock Units subject to the Award shall be adjusted immediately after the consummation of the Change in Control so as to apply to the number and class of securities into which the Shares subject to those units immediately prior to the Change in Control would have been converted in consummation of that Change in Control had those Shares actually been issued and outstanding at that time. However, in the event that the Change in Control occurs within the first eighteen (18) months of the Measurement Period, the Award shall remain outstanding and eligible for Service vesting under the terms of this Agreement with respect only to the number of Shares (as so adjusted) that would have been earned pursuant to the Performance Objective identified in Schedule I if the Company's performance at the end of the Measurement Period was at the Target level. In the event that the Change in Control occurs on or after the first day of the nineteenth (19th) month of the Measurement Period and prior to the end of the Measurement Period, the Award shall remain outstanding and eligible for Service vesting under the terms of this Agreement only with respect to the number of Shares (as so adjusted) that would have been earned pursuant to the Performance Objective identified in Schedule I (pro-rated through the date of the Change in Control) based on the Company's actual performance through the effective date of the Change in Control. To the extent the actual holders of the outstanding Common Stock receive cash consideration for their Common Stock in consummation of the Change in Control, the successor corporation (or parent entity) may, in connection with the assumption or continuation of the Restricted Stock Units subject to the Award at that time, substitute one or more shares of its own common stock with a fair market value equivalent to the cash consideration paid per share of Common Stock in the Change in Control transaction, provided such common stock is readily tradable on an established U.S. securities exchange or market. In the event the Award is converted into a cash retention program, the amount of cash subject to the Award under such program shall be equal to the value of the number of Shares determined in accordance with the foregoing provisions of this Paragraph 5(c) as of the effective date of the Change in Control (based on the per-share value of the consideration received by holders of the outstanding Common Stock in connection with the Change in Control), plus credited interest or earnings through the Issue Date as determined under the terms of such cash retention program.

(d) If (i) the Change in Control occurs on or after the end of the Measurement Period but prior to [], or (ii) if the Change in Control occurs prior to the end of the Measurement Period but the Restricted Stock Units subject to this Award at the time of the Change in Control are not assumed or otherwise continued in effect or replaced with a cash retention program in accordance with Paragraph 5(b), then (i) if the Change in Control occurs within the first eighteen (18) months of the Measurement Period, a number of units equal to the number of Shares that would have been earned pursuant to the Performance Objective identified in Schedule I if the Company's performance at the end of the Measurement Period was at the Target level (less any Shares in which Participant is at the time vested) will vest immediately prior to the closing of the Change in Control and (ii) if the Change in Control occurs on or after the first day of the nineteenth (19th) month of the Measurement Period, a number of units equal to the number of Shares that have been earned pursuant to the Performance Objective identified in Schedule I (pro-rated through the date of the Change in Control if it occurs prior to the end of the Measurement Period) based on the Company's actual performance through the earlier of the effective date of the Change in Control or the end of the Measurement Period will vest immediately

prior to the closing of the Change in Control. The Shares that vest under this subparagraph (d) will be issued on the Issue Date triggered by the Change in Control (or otherwise converted into the right to receive the same consideration per share of Common Stock payable to the other stockholders of the Company in consummation of that Change in Control and distributed at the same time as such stockholder payments), subject to the Company's collection of the applicable Withholding Taxes pursuant to the provisions of Paragraph 6. For purposes of this Paragraph 5(d), the Issue Date shall be the effective date of the Change in Control so long as it qualifies as a "change in the ownership or effective control" of the Company within the meaning of Section 409A(a)(2)(A)(v) of the Code and regulations thereunder. If it does not so qualify, the Issue Date shall be [].

(e) Upon an involuntary termination of Participant's Service for reasons other than Misconduct within twenty-four (24) months following a Change in Control transaction which does not otherwise result in the accelerated vesting of the Restricted Stock Units pursuant to the provisions of subparagraph (d) of this Paragraph 5 and prior to [], a number of units equal to the number of Shares that would have been earned pursuant to Paragraph 5(c) shall vest on such date of termination. Any unvested cash account maintained on Participant's behalf pursuant to the cash retention program established in accordance with subparagraph (b) of this Paragraph 5 shall also vest at the time of such involuntary termination. The Issue Date for such vested Shares or cash shall be the date of such termination of Service (subject to any six-month payment delay to the extent required to comply with Section 409A of the Code), so long as the Change in Control qualifies as a "change in the ownership or effective control" of the Company within the meaning of Section 409A(a)(2)(A)(v) of the Code. If it does not so qualify, to the extent necessary to comply with the requirements of Section 409A of the Code, the Issue Date shall be [].

(f) This Agreement shall not in any way affect the right of the Company to adjust, reclassify, reorganize or otherwise change its capital or business structure or to merge, consolidate, dissolve, liquidate or sell or transfer all or any part of its business or assets.

6. Collection of Withholding Taxes.

(a) Upon the applicable Issue Date, the Company shall issue to or on behalf of Participant a certificate (which may be in electronic form) for the applicable number of underlying shares of Common Stock, subject, however, to the Company's collection of the applicable Withholding Taxes.

(b) Regardless of any action the Company or the Affiliate that employs the Participant (the "Employer") takes with respect to any or all income tax, social insurance, payroll tax, fringe benefits tax, payment on account, or other tax-related items related to the Participant's participation in the Plan and legally applicable to the Participant ("Tax-Related Items"), the Participant acknowledges that the ultimate liability for all Tax-Related Items owed by the Participant is and remains the Participant's responsibility and that such amount may exceed the amount actually withheld by the Company and/or the Employer. The Participant further acknowledges that the Company and/or the Employer (i) makes no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Award, including the grant or vesting of the Restricted Stock Units, the issuance of Shares upon settlement of the Restricted Stock Units, the subsequent sale of Shares, and the receipt of any dividends or dividend equivalents; and (ii) does not commit and is under no obligation to structure the terms of the grant or any aspect of the Award to reduce or eliminate the Participant's

liability for Tax-Related Items or achieve any particular tax result. Further, if the Participant becomes subject to tax in more than one jurisdiction, the Participant acknowledges that the Company and/or the Employer (or former Employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(c) Until such time as the Company provides Participant with written or electronic notice to the contrary, the Company shall collect Withholding Taxes required to be withheld with respect to the vesting or issuance of the vested Shares hereunder (including shares attributable to the dividend equivalent rights provided under Paragraph 4) through an automatic share withholding procedure pursuant to which the Company will withhold, at the time of such vesting or issuance, a portion of the Shares with a Fair Market Value (measured as of the vesting or issuance date, as applicable) equal to the amount of those taxes (including taxes resulting from such withholding) (the "Share Withholding Method"); provided, however, that the amount of any Shares so withheld shall not exceed the amount necessary to satisfy the Company's required tax withholding obligations using the minimum statutory withholding rates for federal and state tax purposes that are applicable to supplemental taxable income, or as otherwise approved by the Plan Administrator. Participant shall be notified in writing or electronically in the event such Share Withholding Method is no longer available.

(d) Should any Shares (including shares attributable to the dividend equivalent rights provided under Paragraph 4) vest or be issued at a time when the Share Withholding Method is not available, then the Withholding Taxes required to be withheld with respect to those Shares shall be collected from Participant through either of the following alternatives:

- Participant's delivery of his or her separate check payable to the Company in the amount of such taxes, or
- the use of the proceeds from a next-day sale of the Shares issued to Participant, provided and only if (i) such a sale is permissible under the Company's trading policies governing the sale of Common Stock, (ii) Participant makes an irrevocable commitment, on or before the Issue Date for those Shares, to effect such sale of the Shares and (iii) the transaction is not otherwise deemed to constitute a prohibited loan under Section 402 of the Sarbanes-Oxley Act of 2002.

(e) Except as otherwise provided in Paragraph 5 and Paragraph 4, the settlement of all Restricted Stock Units which vest under the Award shall be made solely in shares of Common Stock. In no event, however, shall any fractional shares be issued. Accordingly, the total number of shares of Common Stock to be issued pursuant to the Award shall, to the extent necessary, be rounded down to the next whole share in order to avoid the issuance of a fractional share.

7. Compliance with Laws and Regulations. The issuance of shares of Common Stock pursuant to the Award shall be subject to compliance by the Company and Participant with all applicable requirements of law relating thereto and with all applicable regulations of any stock exchange on which the Common Stock may be listed for trading at the time of such issuance.

8. Additional Conditions.

(a) The Company may cancel this Award, and Participant shall cease to have any further right to the underlying shares at any time Participant is not in compliance with this Agreement, the Plan and the following conditions:

(i) Participant shall not render services for any organization or engage, directly or indirectly, in any business which, in the judgment of the Plan Administrator or, if delegated by the Plan Administrator to the Chief Executive Officer, in the judgment of such officer, is or becomes competitive with the Company or any Affiliate, or which is or becomes otherwise prejudicial to or in conflict with the interests of the Company or any Affiliate. Such judgment shall be based on Participant's positions and responsibilities while employed by the Company or an Affiliate, Participant's post-Service responsibilities and position with the other organization or business, the extent of past, current and potential competition or conflict between the Company or an Affiliate and the other organization or business, the effect on customers, suppliers and competitors of Participant's assuming the post-Service position and such other considerations as are deemed relevant given the applicable facts and circumstances. Participant shall be free, however, to purchase as an investment or otherwise, stock or other securities of such organization or business so long as they are listed upon a recognized securities exchange or traded over the counter, and such investment does not represent a substantial investment to Participant or a greater than one percent (1%) equity interest in the organization or business.

(ii) Participant shall not, without prior written authorization from the Company, disclose to anyone outside the Company, or use in other than the Company's business, any secret or confidential information, knowledge or data, relating to the business of the Company or an Affiliate in violation of his or her agreement with the Company or the Affiliate.

(iii) Participant shall disclose promptly and assign to the Company or the Affiliate all right, title and interest in any invention or idea, patentable or not, made or conceived by Participant during employment by the Company or the Affiliate, relating in any manner to the actual or anticipated business, research or development work of the Company or the Affiliate and shall do anything reasonably necessary to enable the Company or the Affiliate to secure a patent where appropriate in the United States and in foreign countries.

(iv) Participant shall not in any way, directly or indirectly (a) induce or attempt to induce any employee of the Company to quit employment with the Company; (b) otherwise interfere with or disrupt the Company's relationship with its employees; (c) solicit, entice, or hire away any employee of the Company; or (d) hire or engage any employee of the Company or any former employee of the Company whose employment with the Company ceased less than one (1) year before the date of such hiring or engagement.

(v) Participant will not divert or attempt to divert from the Company any business the Company had enjoyed or solicited from its customers during the two (2) years prior to the diversion or attempted diversion of such business.

(vi) Participant shall not make any disparaging statements about the Company to any of the Company's past, present, or future customers, employees, clients, contractors, vendors, or to the media or to any other person either orally or by any other medium of communication, including internet communication. As used herein, the term "disparaging statement" means any communication, oral or written, which would cause or tend to

cause humiliation or embarrassment or to cause a recipient of such communication to question the business condition, integrity, product, service, quality, confidence, or good character of the Company.

(b) Notwithstanding any other provision of the Plan or this Agreement, the Plan Administrator in its sole discretion may cancel this Award at any time prior to the issuance of the Shares, if the employment of Participant shall be terminated, other than by reason of death, unless the conditions in this Paragraph 8 are met.

(c) Failure to comply with the conditions of this Paragraph 8 prior to, or during the six months after, any payment or delivery pursuant to this Award shall cause the issuance of the Shares to be rescinded. The Company shall notify Participant in writing of any such rescission within two (2) years after such delivery of the Shares and within ten (10) days after receiving such notice, Participant shall either return the delivered Shares to the Company or pay to the Company the amount of the proceeds recognized upon any sale or other disposition of those Shares.

(d) Upon delivery of the Shares pursuant to this Award, the Plan Administrator may require Participant to certify on a form acceptable to the Plan Administrator, that Participant is in compliance with the terms and conditions of the Plan and this Agreement.

(e) In accordance with Section 6(e)(xx) of the Plan, this Award, and the right to receive and retain any Shares or cash payments covered by this Award, shall be subject to rescission, cancellation or recoupment, in whole or part, if and to the extent so provided under any "clawback" or similar policy of the Company in effect on the Award Date or that may be established thereafter, including any modification or amendment thereto, or as required by the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or other applicable law.

(f) By accepting this Award under the Plan, Participant agrees and acknowledges that Participant is obligated to cooperate with, and provide any and all assistance necessary to, the Company to recover or recoup any Award or amounts paid under the Plan subject to claw-back pursuant to such law or policy. Such cooperation and assistance shall include, but is not limited to, executing, completing and submitting any documentation necessary to recover or recoup any Award or amounts paid pursuant to this Award.

9. Notices. Any notice required to be given or delivered to the Secretary of the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate office at 436 Seventh Avenue, Pittsburgh, PA 15219. Except to the extent electronic notice is expressly authorized hereunder, any notice required to be given or delivered to Participant shall be in writing and addressed to Participant at the address indicated below Participant's signature line on this Agreement. All notices shall be deemed effective upon personal delivery (or electronic delivery to the extent authorized hereunder) or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

10. Successors and Assigns. Except to the extent otherwise provided in this Agreement, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the Company and its successors and assigns and Participant, Participant's assigns, the legal representatives, heirs and legatees of Participant's estate and any beneficiaries of the Award designated by Participant.

11. Construction. This Agreement and the Award evidenced hereby are made and granted pursuant to the Plan and are in all respects limited by and subject to the terms of the Plan. All decisions of the Plan Administrator with respect to any question or issue arising under the Plan or this Agreement shall be conclusive and binding on all persons having an interest in the Award. The provisions of the Plan are incorporated in this Agreement in their entirety. In the event of any conflict between the provisions of this Agreement and the Plan, the provisions of the Plan shall control. A Prospectus describing the Plan has been delivered to the Participant. The Plan itself is available upon request.

12. Governing Law. The interpretation, performance and enforcement of this Agreement shall be governed by the laws of the Commonwealth of Pennsylvania without resort to Pennsylvania's conflict-of-laws rules. Any arbitration, legal or equitable action, or any proceeding arising directly, indirectly, or otherwise in connection with, out of, related to, or from the Agreement, or any provision hereof, shall exclusively be filed and adjudicated in Allegheny County, Pennsylvania and no other venue.

13. Employment at Will. Nothing in this Agreement or in the Plan shall confer upon Participant any right to continue in Service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company (or any Parent or Subsidiary employing or retaining Participant) or of Participant, which rights are hereby expressly reserved by each, to terminate Participant's Service at any time for any reason, with or without cause, unless such rights are otherwise limited pursuant to a separate agreement between the Company (or any Parent or Subsidiary) and Participant.

14. Section 409A. This Award is intended to be excepted from coverage under, or compliant with the provisions of, Section 409 of the Code and the regulations promulgated thereunder ("Section 409A") and shall be construed accordingly. Notwithstanding the foregoing or any provision of the Plan to the contrary, if the Award is subject to the provisions of Section 409A (and not excepted therefrom), the provisions of the Plan and this Agreement shall be administered, interpreted and construed in a manner necessary to comply with Section 409A (or disregarded to the extent such provision cannot be so administered, interpreted, or construed). If any payments or benefits hereunder may be deemed to constitute nonconforming deferred compensation subject to taxation under the provisions of Section 409A, Participant agrees that the Company may, without the consent of Participant, modify the Agreement and the Award to the extent and in the manner the Company deems necessary or advisable or take such other action or actions, including an amendment or action with retroactive effect, that the Company deems appropriate in order either to preclude any such payments or benefits from being deemed "deferred compensation" within the meaning of Section 409A or to provide such payments or benefits in a manner that complies with the provisions of Section 409A such that they will not be taxable thereunder. Notwithstanding, the Company makes no representations and/or warranties with respect to compliance with Section 409A, and Participant recognizes and acknowledges that Section 409A could potentially impose upon Participant certain taxes or interest charges for which Participant is and shall remain solely responsible.

15. Further Assurances. The Participant agrees, upon demand of the Company or the Plan Administrator, to do all acts and execute, deliver and perform all additional documents, instruments, and agreements that may be reasonably required by the Company or the Plan Administrator, as the case may be, to implement the provisions and purposes of this Agreement and the Plan.

16. Additional Acknowledgments; Appendix B. By accepting this Award, the Participant acknowledges and agrees that this Award is subject to the general terms applicable to Awards granted to employees outside the U.S. set forth in Appendix B hereto. Appendix B constitutes part of this Agreement. The Participant acknowledges that he or she should review the provisions of Appendix B carefully, as this Award will be null and void absent the Participant's acceptance of such provisions. The Company reserves the right to impose other requirements on the Award to the extent that the Company determines it is necessary or advisable for legal or administrative reasons, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year first indicated above.

KOPPERS HOLDINGS INC.

By: _____

Title: President and CEO

Participant _____

Signature: _____

Address: _____

APPENDIX A

DEFINITIONS

When used in this Agreement, the terms which are defined in the Plan shall have the meanings given to them in the Plan, as modified herein (if applicable). The following definitions shall be in effect under the Agreement:

- A. Agreement shall mean this Restricted Stock Unit Issuance Agreement.
- B. Award shall mean the award of restricted stock units made to Participant pursuant to the terms of this Agreement.
- C. Award Date shall mean the date the restricted stock units are awarded to Participant pursuant to the Agreement and shall be the date indicated in Paragraph 1 of the Agreement.
- D. Common Stock shall mean shares of the Company's common stock.
- E. Company shall mean Koppers Holdings Inc., a Pennsylvania corporation, and any successor corporation to all or substantially all of the assets or voting stock of Koppers Holdings Inc. which shall by appropriate action adopt the Plan.
- F. Measurement Period shall mean the period over which the Performance Objective is to be measured. That period shall be from [] to [].
- G. Misconduct shall mean the commission of any act of fraud, embezzlement or dishonesty by Participant, any unauthorized use or disclosure by Participant of confidential information or trade secrets of the Company (or any Parent or Subsidiary), or any other intentional misconduct by Participant adversely affecting the business or affairs of the Company (or any Parent or Subsidiary) in a material manner. The foregoing definition shall not in any way preclude or restrict the right of the Company (or any Parent or Subsidiary) to discharge or dismiss Participant or any other person in the Service of the Company (or any Parent or Subsidiary) for any other acts or omissions, but such other acts or omissions shall not be deemed, for purposes of the Plan or this Agreement, to constitute grounds for termination for Misconduct.
- H. Participant shall mean the person to whom the Award is made pursuant to the Agreement.
- I. Parent shall mean any corporation (other than the Company) in an unbroken chain of corporations ending with the Company, provided each corporation in the unbroken chain (other than the Company) owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.
- J. Plan shall mean the Company's 2018 Long Term Incentive Plan.
- K. Plan Administrator shall mean the committee(s) designated by the Board to administer the Plan.

L. Retirement shall mean Participant's voluntary termination from Service (i) on or after his attainment of age sixty five (65), or (ii) on or after his attainment of age 55 with at least ten (10) years of service, or involuntary termination from Service with at least thirty (30) years of service other than in connection with a termination for Misconduct. "Years of service" means Participant's total number of years of "accumulated service" as such term is defined with respect to salaried employees under the Retirement Plan for Koppers Inc. (regardless of whether Participant is eligible to receive a benefit under such plan).

M. Service shall mean Participant's performance of services for the Company (or any Parent or Subsidiary) in the capacity of an Employee, a non-employee member of the board of directors or a consultant or independent advisor. For purposes of this Agreement, Participant shall be deemed to cease Service immediately upon the occurrence of either of the following events: (i) Participant no longer performs services in any of the foregoing capacities for the Company (or any Parent or Subsidiary) or (ii) the entity for which Participant performs such services ceases to remain a Parent or Subsidiary of the Company, even though Participant may subsequently continue to perform services for that entity. Service shall not be deemed to cease during a period of military leave, sick leave or other personal leave approved by the Company; provided, however, that except to the extent otherwise required by law or expressly authorized by the Plan Administrator or by the Company's written policy on leaves of absence, no Service credit shall be given for vesting purposes for any period the Participant is on a leave of absence.

N. Subsidiary shall mean any corporation (other than the Company) in an unbroken chain of corporations beginning with the Company, provided each corporation (other than the last corporation) in the unbroken chain owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.

O. Withholding Taxes shall mean the income (federal, state, local or other jurisdiction), payroll, employment or other taxes required to be withheld by the Company in connection with the Award (at vesting or otherwise), including any additional shares resulting from the dividend equivalent right provisions of the Award.

APPENDIX B

GENERAL TERMS APPLICABLE TO AWARDS
GRANTED TO EMPLOYEES OUTSIDE THE U.S.

This Appendix B includes additional or different terms and conditions that govern the Award if the Participant resides and/or works outside the U.S.

A. Data Privacy. *By accepting this Award, the Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Participant's personal data as described in this document and any other grant materials by and among, as applicable, the Company, the Employer, and any other Affiliate for the exclusive purpose of implementing, administering, and managing the Participant's participation in the Plan.*

*The Participant understands that the Company and the Employer hold certain personal information about the Participant, including, but not limited to, the Participant's name, home address, email address, telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company or any Affiliates, and details of any entitlement to shares of stock or equivalent benefits awarded, canceled, vested, unvested, or outstanding in the Participant's favor ("**Data**"), for the purpose of implementing, administering, and managing the Participant's participation in the Plan.*

The Participant understands that the Company, the Employer, or other Affiliates will transfer Data among themselves as necessary, and may each further transfer Data to any third party that is assisting the Company (or may assist the Company in the future) with the implementation, administration, and management of the Plan. The Participant understands that these recipients may be located in the United States, and that the United States may have different data privacy laws and protections from the Participant's country. The Participant understands that the Participant may request a list with the names and addresses of any potential recipients of Data by contacting the Participant's local human resources representative. The Participant authorizes the recipients to receive, possess, use, retain, and transfer Data, in electronic or other form, for the exclusive purposes of implementing, administering, and managing the Participant's participation in the Plan. The Participant understands that Data will be held only as long as is necessary to implement, administer, and manage the Participant's participation in the Plan.

The Participant understands that the Participant may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data, or refuse or withdraw the consents herein, in any case without cost, by contacting in writing the Participant's local human resources representative. Further, the Participant understands that the Participant is providing the consents herein on a purely voluntary basis. If the Participant does not consent, or if the Participant later seeks to revoke the Participant's consent, the status of Participant's employment or service with the Employer will not be affected; the only consequence of refusing or withdrawing the Participant's consent is that the Company would not be able to grant to the Participant Units or other awards or to administer or maintain such awards. Therefore, the Participant understands that refusing or withdrawing the Participant's consent may affect the Participant's ability to benefit from the Units. For more information on the consequences of the Participant's refusal to consent or withdrawal of consent,

the Participant understands that the Participant may contact the Participant's local human resources representative.

Further, upon request of the Company or the Employer, the Participant agrees to provide a separate executed data privacy consent form (or any other agreements or consents that may be required by the Company and/or the Employer) that the Company and/or the Employer may deem necessary to obtain from the Participant for the purpose of administering the Participant's participation in the Plan in compliance with the data privacy laws in the Participant's country, either now or in the future. The Participant understands and agrees that the Participant will not be able to participate in the Plan if the Participant fails to provide any such consent or agreement requested by the Company and/or the Employer.

B. Additional Acknowledgements. By entering into this Agreement and accepting the grant of Restricted Stock Units evidenced hereby, the Participant acknowledges, understands, and agrees that:

i. the Plan is established voluntarily by the Company, is discretionary in nature, and may be terminated by the Company at any time, except as otherwise set forth in the Plan;

ii. the grant of Restricted Stock Units is voluntary and occasional and does not create any contractual or other right to receive future awards of Restricted Stock Units or benefits in lieu of Restricted Stock Units, even if such awards have been awarded in the past;

iii. all decisions with respect to future awards, if any, will be at the sole discretion of the Company;

iv. this Award and the underlying Shares, and the income from and value of same, are not intended to replace any pension rights or compensation;

v. this Award and the underlying Shares, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, but not limited to, calculating any severance, resignation, termination, redundancy, dismissal, or end-of-service payments; bonuses; long-service awards; pension, retirement, or welfare benefits; or similar payments;

vi. unless otherwise agreed with the Company, this Award and the underlying Shares, and the income from and value of same, are not granted as consideration for, or in connection with, any service the Participant may provide as a director of any Affiliate;

vii. this Award is made solely by the Company, with principal offices at 436 Seventh Avenue, Pittsburgh, PA, U.S.A., and the Company is solely responsible for the administration of the Plan and the Participant's participation in the Plan;

viii. the future value of the Shares that may be delivered in settlement of the Restricted Stock Units (to the extent earned) is unknown, indeterminable, and cannot be predicted with certainty;

ix. no claim or entitlement to compensation or damages in favor of the Participant (or any person claiming through the Participant) shall arise from forfeiture of the Restricted Stock Units resulting from a termination of Service (for any reason whatsoever, whether or not such termination of Service is later found to be invalid or in breach of the employment laws in the jurisdiction where the Participant is employed or providing services or the terms of the Participant's employment or service agreement, if any) or recoupment of all or any portion of any payment made pursuant to the Restricted Stock Units as provided by any Company policy on recoupment of incentive compensation;

x. for purposes of the Restricted Stock Units, the Participant's termination of Service occurs as of the date the Participant is no longer actively employed and providing services to the Company or one of its Affiliates (for any reason whatsoever, whether or not such termination of Service is later found to be invalid or in breach of the employment laws in the jurisdiction where the Participant is employed or providing services or the terms of the Participant's employment or service agreement, if any), and unless otherwise expressly provided in this Agreement or otherwise determined by the Company, the Participant's right to vest in any portion of the Award under the Plan, if any, will terminate as of such date and will not be extended by any notice period (e.g., the Participant's active employment or period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under the employment laws in the jurisdiction where the Participant is employed or providing services or the terms of the Participant's employment or service agreement, if any); the Company, in its sole discretion, shall determine when the Participant is no longer actively employed or providing services for purposes of the Award (including whether the Participant may still be considered to be actively employed or providing services while on a leave of absence);

xi. unless otherwise provided in the Plan or by the Company in its discretion, the Restricted Stock Units and the benefits evidenced by this Agreement do not create any entitlement to have the Units or any such benefits transferred to, or assumed by, another company nor to be exchanged, cashed out, or substituted, in connection with any corporate transaction affecting the Shares; and

xii. neither the Company, the Employer, nor any other Affiliate shall be liable for any foreign exchange rate fluctuation between the Participant's local currency and the United States Dollar that may affect the value of the Restricted Stock Units, any payment made pursuant to the Restricted Stock Units, or the subsequent sale of any Shares acquired under the Plan.

C.No Advice Regarding Grant. The Company is not providing any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Participant's participation in the Plan, acquisition of any Shares under the Plan, or subsequent sale of such Shares. The Participant should consult with the Participant's personal tax, legal, and financial advisors regarding the Participant's participation in the Plan before taking any action in relation thereto.

D. Language. The Participant acknowledges that he or she is proficient in the English language and understands the content of this Agreement and other Plan-related materials. If the Participant has received this Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version differs from the English version, the English version shall control.

E. Electronic Delivery and Acceptance. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. The Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

F. Foreign Asset/Account Reporting Requirements. The Participant acknowledges that there may be certain foreign asset and/or account reporting requirements that may affect the Participant's ability to acquire or hold Shares acquired under the Plan (or cash received from participating in the Plan) in a brokerage or bank account outside of the Participant's country. The Participant may be required to report such accounts, assets, or transactions to the tax or other authorities in his or her country. The Participant may also be required to repatriate sale proceeds or other funds received as a result of participating in the Plan to the Participant's country through a designated bank or broker within a certain time after receipt. The Participant acknowledges that it is his or her responsibility to be compliant with such regulations and the Participant should speak to his or her personal advisor on this matter.

SCHEDULE I

PERFORMANCE OBJECTIVE

One hundred percent (100%) of the Restricted Stock Units shall vest on [____], provided (i) the Participant continues in Service until [____], and (ii) the realization of "Relative TSR" at the 50th percentile of the Peer Group over the period measured from [____] to [____] (the "Measurement Period").

The actual number of Restricted Stock Units to vest on [____] (provided Participant continues in Service until [____]), shall be determined in accordance with the following chart:

Performance Level	Relative TSR	% of Restricted Stock Units Vesting
Outstanding	80th percentile Or above	200%
	70th percentile	150%
Target	50th percentile	100%
	35th percentile	50%
Threshold	25th percentile Or below	0%

If the Company's performance falls within the range of the Threshold and Target or the Target and Outstanding achievement levels, then the number of Restricted Stock Units will be calculated based on a linear interpolation between the 0% and 50% levels, or the 50% and 100% levels, or the 100% and 150% levels, or the 150% and 200% levels, respectively. However, if the Company's TSR is negative for the performance period, any potential payout will be capped at 100% (or target).

The term, "Relative TSR" shall mean total stockholder return relative to the peer group (listed below). The performance period will be [____], to [____], and TSR results will be calculated in early January at the end of the performance period defined above. TSR for the Company and each company in the peer group will be determined as follows: TSR equals (Ending Stock Price plus Value of Reinvested Dividends during performance period) divided by Starting Stock Price). Starting and Ending Stock Price will be the average closing price for the two months preceding the first and last days of the Measurement Period, respectively, and the Company will be "included" in the peer group for performance calculations and rankings.

The Company's performance shall be compared to the peer group which consists of the companies from the S&P SmallCap 600 Materials Index. In the event any of the foregoing companies, as of [____], either (a) is no longer publicly traded or (b) has publicly announced

that a majority of its shares or substantially all of its assets are being acquired or that it is being merged into another company and will not be the surviving entity, but where the acquisition or merger has not yet closed as of such date despite the public announcement, then such company will be excluded from the Relative TSR calculation; provided, however, that if any of the above companies liquidates or files for bankruptcy, it will automatically be deemed in last place for purposes of the Relative TSR calculation.

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Revised 5/1/18

KOPPERS HOLDINGS INC.

RESTRICTED STOCK UNIT ISSUANCE AGREEMENT
NON-EMPLOYEE DIRECTOR - TIME VESTING

RECITALS

- A. The Board has adopted the Plan for the purpose of retaining the services of selected employees, non-employee members of the Board (or the board of directors of any Parent or Subsidiary) and consultants and other independent advisors who provide services to the Company (or any Parent or Subsidiary).
- B. Participant is to render valuable services to the Company, and this Agreement is executed pursuant to, and is intended to carry out the purposes of, the Plan in connection with the Company's issuance of shares of Common Stock to Participant under the Plan.
- C. All capitalized terms in this Agreement shall have the meaning assigned to them in this Agreement or the attached Appendix A.

NOW, THEREFORE, it is hereby agreed as follows:

1. Grant of Restricted Stock Units. The Company hereby awards Restricted Stock Units to the Participant under the Plan. The number of shares of Common Stock subject to the awarded Restricted Stock Units, the vesting provisions for those shares, the date on which the vested shares shall become issuable to Participant and the remaining terms and conditions governing the Award shall be as set forth in this Agreement.

AWARD SUMMARY

Award Date: []

Number of Shares Subject to Award: [] shares of Common Stock (the "Shares").

Vesting Schedule: The Shares shall vest on the earlier to occur of (i) the date which is 365 days after the Award Date or (ii) the date of the next annual meeting of the Company's shareholders immediately following the Award Date, provided that the Participant remains in continuous Service as a director of the Company during such period (the "Vesting Date"). However, some or all of the Shares may vest earlier in accordance with the special vesting provisions of Paragraph 4.

Issuance Schedule: The Shares in which Participant vests in accordance with the foregoing Vesting Schedule shall become issuable on the Vesting Date (or upon the date of earlier vesting pursuant to a Change in Control or termination of Service, if so provided herein) (the "Issue Date"). The actual issuance of the Shares shall be effected on the applicable Issue Date or as soon as administratively practicable thereafter, but in no event later than the close

of the calendar year in which such Issue Date occurs or (if later) the fifteenth day of the third calendar month following such Issue Date.

2. Limited Transferability. Prior to the actual issuance of the Shares which vest hereunder, Participant may not transfer any interest in the Award or the underlying Shares; provided, however, any Shares which vest hereunder but which otherwise remain unissued at the time of Participant's death may be transferred pursuant to the provisions of Participant's will or the laws of inheritance or to Participant's designated beneficiary or beneficiaries of this Award. Participant may make a beneficiary designation for this Award at any time by filing the appropriate form with the Plan Administrator or its designee.

3. Stockholder Rights and Dividend Equivalents

(a) The holder of this Award shall not have any stockholder rights, including voting or dividend rights, with respect to the Shares subject to the Award until Participant becomes the record holder of those Shares following their actual issuance.

(b) Notwithstanding the foregoing, should any cash dividend, whether regular or extraordinary, be declared and paid on the outstanding Common Stock while one or more Shares remain subject to this Award (i.e., those Shares are not otherwise issued and outstanding for purposes of entitlement to the dividend or distribution), then a special book account shall be established for Participant and credited with a dollar amount equal to the amount of that dividend paid per share multiplied by the number of Restricted Stock Units at the time subject to this Award (plus the number of additional shares previously credited to Participant pursuant to the dividend equivalent right provisions of this Paragraph 3) as of the record date for the dividend. As of the fifteenth business day in April each year, the cash dividend amounts credited to the special book account since the Award Date shall be converted into a book entry of an additional number of Restricted Stock Units determined by dividing (i) those cash dividend equivalent amounts by (ii) the average of the Fair Market Value per share of Common Stock on each of the dates since the Award Date on which those dividends on the outstanding Common Stock were paid. The additional Restricted Stock Units so credited shall vest at the same time as the Shares to which they relate and shall be distributed to Participant concurrently with the issuance of those Shares on the applicable Issue Date.

4. Special Vesting/Change in Control.

(a) Should Participant's Service terminate for any reason prior to the Vesting Date, then, on the date of such termination, Participant shall vest in a number of Shares equal to the number of Shares in which Participant would have been vested on the Vesting Date had Participant continued in the Company's Service through the Vesting Date *multiplied by a fraction*, the numerator of which is the number of days of Service Participant completed between the Award Date and the termination of Participant's Service, and the denominator of which is three hundred sixty-five (365).

(b) Immediately prior to the closing of a Change in Control, Participant shall vest in a number of Shares equal to the number of Shares in which Participant would have vested on the Vesting Date. The Shares that vest under this subparagraph (b) will be issued on the Issue Date triggered by the Change in Control (or otherwise converted into the right to receive the same consideration per share of Common Stock payable to the other stockholders of the Company in consummation of that Change in Control and distributed at the same time as such

stockholder payments). For purposes of this Paragraph 4(b), the Issue Date shall be the effective date of the Change in Control so long as it qualifies as a "change in the ownership or effective control" of the Company within the meaning of Section 409A(a)(2)(A)(v) of the Code and regulations thereunder. If it does not so qualify, the Issue Date shall be the Vesting Date.

(c) This Agreement shall not in any way affect the right of the Company to adjust, reclassify, reorganize or otherwise change its capital or business structure or to merge, consolidate, dissolve, liquidate or sell or transfer all or any part of its business or assets.

5. Compliance with Laws and Regulations. The issuance of shares of Common Stock pursuant to the Award shall be subject to compliance by the Company and Participant with all applicable requirements of law relating thereto and with all applicable regulations of any stock exchange on which the Common Stock may be listed for trading at the time of such issuance.

6. Notices. Any notice required to be given or delivered to the Secretary of the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate office at 436 Seventh Avenue, Pittsburgh, PA 15219. Except to the extent electronic notice is expressly authorized hereunder, any notice required to be given or delivered to Participant shall be in writing and addressed to Participant at the address indicated below Participant's signature line on this Agreement. All notices shall be deemed effective upon personal delivery (or electronic delivery to the extent authorized hereunder) or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

7. Successors and Assigns. Except to the extent otherwise provided in this Agreement, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the Company and its successors and assigns and Participant, Participant's assigns, the legal representatives, heirs and legatees of Participant's estate and any beneficiaries of the Award designated by Participant.

8. Construction. This Agreement and the Award evidenced hereby are made and granted pursuant to the Plan and are in all respects limited by and subject to the terms of the Plan. All decisions of the Plan Administrator with respect to any question or issue arising under the Plan or this Agreement shall be conclusive and binding on all persons having an interest in the Award. The provisions of the Plan are incorporated in this Agreement in their entirety. In the event of any conflict between the provisions of this Agreement and the Plan, the provisions of the Plan shall control. A Prospectus describing the Plan has been delivered to the Participant. The Plan itself is available upon request.

9. Governing Law. The interpretation, performance and enforcement of this Agreement shall be governed by the laws of the Commonwealth of Pennsylvania without resort to Pennsylvania's conflict-of-laws rules. Any arbitration, legal or equitable action, or any proceeding arising directly, indirectly, or otherwise in connection with, out of, related to, or from the Agreement, or any provision hereof, shall exclusively be filed and adjudicated in Allegheny County, Pennsylvania and no other venue.

10. Service at Will. Nothing in this Agreement or in the Plan shall confer upon Participant any right to continue in Service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company (or any Parent or Subsidiary employing or retaining Participant) or of Participant, which rights are hereby expressly reserved by each, to terminate Participant's Service at any time for any reason, with or without cause, unless such

APPENDIX A

DEFINITIONS

When used in this Agreement, the terms which are defined in the Plan shall have the meanings given to them in the Plan, as modified herein (if applicable). The following definitions shall be in effect under the Agreement:

- A. Agreement shall mean this Restricted Stock Unit Issuance Agreement.
- B. Award shall mean the award of restricted stock units made to Participant pursuant to the terms of this Agreement.
- C. Award Date shall mean the date the restricted stock units are awarded to Participant pursuant to the Agreement and shall be the date indicated in Paragraph 1 of the Agreement.
- D. Common Stock shall mean shares of the Company's common stock.
- E. Company shall mean Koppers Holdings Inc., a Pennsylvania corporation, and any successor corporation to all or substantially all of the assets or voting stock of Koppers Holdings Inc. which shall by appropriate action adopt the Plan.
- F. Participant shall mean the person to whom the Award is made pursuant to the Agreement.
- G. Parent shall mean any corporation (other than the Company) in an unbroken chain of corporations ending with the Company, provided each corporation in the unbroken chain (other than the Company) owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.
- H. Plan shall mean the Company's 2018 Long Term Incentive Plan.
- I. Plan Administrator shall mean the committee(s) designated by the Board to administer the Plan.
- J. Service shall mean Participant's performance of services for the Company (or any Parent or Subsidiary) in the capacity of an employee, a non-employee member of the board of directors or a consultant or independent advisor. For purposes of this Agreement, Participant shall be deemed to cease Service immediately upon the occurrence of either of the following events: (i) Participant no longer performs services in any of the foregoing capacities for the Company (or any Parent or Subsidiary) or (ii) the entity for which Participant performs such services ceases to remain a Parent or Subsidiary of the Company, even though Participant may subsequently continue to perform services for that entity. Service shall not be deemed to cease during a period of military leave, sick leave or other personal leave approved by the Company; provided, however, that except to the extent otherwise required by law or expressly authorized by the Plan Administrator or by the Company's written policy on leaves of absence, no Service credit shall be given for vesting purposes for any period the Participant is on a leave of absence.

K. Subsidiary shall mean any corporation (other than the Company) in an unbroken chain of corporations beginning with the Company, provided each corporation (other than the last corporation) in the unbroken chain owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.

KOPPERS HOLDINGS INC.

NOTICE OF GRANT OF STOCK OPTION

Notice is hereby given of the following option grant (the "Option") to purchase shares of the Common Stock of Koppers Holdings Inc. (the "Company"):

Optionee:

Grant Date: [_____]

Vesting Commencement Date: [_____]

Exercise Price:

Number of Option Shares:

Expiration Date: [_____]

Type of Option: _____ Incentive Stock Option

_____ X _____ Non-Qualified Stock Option

Vesting Schedule: The Option shall become exercisable for 25% of the Option Shares upon Optionee's completion of a consecutive twelve (12)-month period of Service measured from the Vesting Commencement Date. The Option shall become exercisable for 25% of the Option Shares upon Optionee's completion of a consecutive twenty-four (24)-month period of Service measured from the Vesting Commencement Date. The Option shall become exercisable for 25% of the Option Shares upon Optionee's completion of a consecutive thirty-six (36)-month period of Service measured from the Vesting Commencement Date. The Option shall become exercisable for 25% of the Option Shares upon Optionee's completion of a consecutive forty-eight (48)-month period of Service measured from the Vesting Commencement Date. However, one or more Option Shares may be subject to accelerated vesting in accordance with Section 6 of the Stock Option Agreement. In no event shall the Option become exercisable for any additional Option Shares after Optionee's cessation of Service. Only a whole number of Option Shares will become vested and exercisable as of any given date. If the number of Option Shares that become vested and exercisable determined as of a date is a fractional number, the number vesting will be rounded down to the nearest whole number with any fractional portion carried forward.

Optionee understands and agrees that the Option is granted subject to and in accordance with the terms of the Koppers Holdings Inc. 2018 Long Term Incentive Plan (the "Plan"). Optionee further agrees to be bound by the terms of the Plan and the terms of the Option as set forth in the Stock Option Agreement attached hereto as Exhibit A. Optionee hereby acknowledges the receipt of a copy of the official prospectus for the Plan in the form

Revised 5/1/2018

attached hereto as Exhibit B. A copy of the Plan is available upon request made to the Corporate Secretary at the Company's principal offices.

Employment at Will. Nothing in this Notice or in the attached Stock Option Agreement or in the Plan shall confer upon Optionee any right to continue in Service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company (or any Parent or Subsidiary employing or retaining Optionee) or of Optionee, which rights are hereby expressly reserved by each, to terminate Optionee's Service at any time for any reason, with or without cause, unless such rights have otherwise been limited pursuant to a separate agreement between the Company (or any Parent or Subsidiary) and the Participant.

Definitions. All capitalized terms in this Notice shall have the meaning assigned to them in this Notice or in the attached Stock Option Agreement.

DATED: _____

KOPPERS HOLDINGS INC.

By: _____

Title: President and CEO

Participant:

Signature: _____

Address: _____

ATTACHMENTS

Exhibit A - Stock Option Agreement

Exhibit B - Plan Prospectus

STOCK OPTION AGREEMENT

RECITALS

A. The Board has adopted the Plan for the purpose of retaining the services of selected Employees, non-employee members of the Board (or the board of directors of any Parent or Subsidiary) and consultants and other independent advisors who provide services to the Company (or any Parent or Subsidiary).

B. Optionee is to render valuable services to the Company (or a Parent or Subsidiary), and this Agreement is executed pursuant to, and is intended to carry out the purposes of, the Plan in connection with the Company's grant of an option to Optionee.

C. All capitalized terms in this Agreement shall have the meaning assigned to them in the attached Appendix A.

NOW, THEREFORE, it is hereby agreed as follows:

Grant of Option. The Company hereby grants to Optionee, as of the Grant Date, an option to purchase up to the number of Option Shares specified in the Grant Notice. The Option Shares shall be purchasable from time to time during the option term specified in Paragraph 2 at the Exercise Price.

Option Term. This option shall have a maximum term of ten (10) years measured from the Grant Date and shall accordingly expire at the close of business on the Expiration Date, unless sooner terminated in accordance with Paragraph 5, 6 or 10.

Limited Transferability.

This option shall be neither transferable nor assignable by Optionee other than by will or the laws of inheritance following Optionee's death and may be exercised, during Optionee's lifetime, only by Optionee. However, Optionee may designate one or more persons as the beneficiary or beneficiaries of this option, and this option shall, in accordance with such designation, automatically be transferred to such beneficiary or beneficiaries upon the Optionee's death while holding this option. Such beneficiary or beneficiaries shall take the transferred option subject to all the terms and conditions of this Agreement, including (without limitation) the limited time period during which this option may, pursuant to Paragraph 5, be exercised following Optionee's death.

If this option is designated a Non-Qualified Stock Option in the Grant Notice, then this option may be assigned in whole or in part during Optionee's lifetime to one or more of the Optionee's Family Members or to a trust established for the exclusive benefit of Optionee and/or one or more such Family Members, to the extent such assignment is in connection with the Optionee's estate plan or pursuant to a domestic relations order. The assigned portion shall be exercisable only by the person or persons who acquire a proprietary interest in the option pursuant to such assignment. The terms applicable to the assigned portion shall be the same as those in effect for this option immediately prior to such assignment.

Dates of Vesting. This option shall become exercisable for the Option Shares in one or more installments in accordance with the Vesting Schedule set forth in the Grant Notice. As the option becomes exercisable for such installments, those installments shall accumulate, and the option shall remain exercisable for the accumulated installments until the Expiration Date or sooner termination of the option term under Paragraph 5, 6 or 10.

Cessation of Service. The option term specified in Paragraph 2 shall terminate (and this option shall cease to be outstanding) prior to the Expiration Date should any of the following provisions become applicable:

Except as otherwise provided in subparagraphs (b), (c), (d), (e) and (h) of this Paragraph 5, should Optionee cease to remain in Service for any reason while this option is outstanding, then Optionee (or any person or persons to whom this option is transferred pursuant to a permitted transfer under Paragraph 3) shall have a ninety (90)-day period measured from the date of such cessation of Service during which to exercise this option, but in no event shall this option be exercisable at any time after the Expiration Date.

Should Optionee cease to remain in Service due to Optionee's voluntary resignation while this option is outstanding, then Optionee (or any person or persons to whom this option is transferred pursuant to a permitted transfer under Paragraph 3) shall have a thirty (30)-day period measured from the date of such cessation of Service during which to exercise this option, but in no event shall this option be exercisable at any time after the Expiration Date.

Should Optionee die while this option is outstanding, then this option may be exercised by (i) the personal representative of Optionee's estate or (ii) the person or persons to whom the option is transferred pursuant to Optionee's will or the laws of inheritance following Optionee's death or to whom the option is transferred during Optionee's lifetime pursuant to a permitted transfer under Paragraph 3, as the case may be. However, if Optionee dies while holding this option and has an effective beneficiary designation in effect for this option at the time of his or her death, then the designated beneficiary or beneficiaries shall have the exclusive right to exercise this option following Optionee's death. Any such right to exercise this option shall lapse, and this option shall cease to be outstanding, upon the earlier of (i) the expiration of the twelve (12)-month period measured from the date of Optionee's death or (ii) the Expiration Date.

Should Optionee cease Service by reason of Permanent Disability while this option is outstanding, then Optionee (or any person or persons to whom this option is transferred pursuant to a permitted transfer under Paragraph 3) shall have a twelve (12)-month period measured from the date of such cessation of Service during which to exercise this option. In no event shall this option be exercisable at any time after the Expiration Date.

Should Optionee cease Service by reason of Retirement while this option is outstanding, then Optionee (or any person or persons to whom this option is transferred pursuant to a permitted transfer under Paragraph 3) shall have a three (3)-year period measured from the date of Optionee's Retirement during which to exercise this option. In no event shall this option be exercisable at any time after the Expiration Date.

The applicable period of post-Service exercisability in effect pursuant to the foregoing provisions of this Paragraph 5 shall automatically be extended by an additional period of time equal in duration to any interval within such post-Service exercise period during which the exercise of this option or the immediate sale of the Option Shares acquired under this option cannot be effected in compliance with applicable federal and state securities laws, but in no event shall such an extension result in the extension of this option beyond the Expiration Date.

During the limited period of post-Service exercisability, this option may not be exercised in the aggregate for more than the number of Option Shares for which this option is, at the time of Optionee's cessation of Service, vested and exercisable pursuant to the Exercise Schedule specified in the Grant Notice or the special vesting acceleration provisions of Paragraph 6. This option shall not vest or become exercisable for any additional Option Shares, whether pursuant to the normal Exercise Schedule specified in the Grant Notice or the special vesting acceleration provisions of Paragraph 6, following the Optionee's cessation of Service, except to the extent (if any) specifically authorized by the Plan Administrator pursuant to an express written agreement with the Optionee. Upon the expiration of such limited exercise period or (if earlier) upon the Expiration Date, this option shall terminate and cease to be outstanding for any exercisable Option Shares for which the option has not otherwise been exercised.

Should Optionee's Service be terminated for Misconduct or should Optionee otherwise engage in any Misconduct while this option is outstanding, then this option shall terminate immediately and cease to remain outstanding.

Special Acceleration of Option.

Should the Optionee's Service terminate by reason of his or her Retirement, death or Permanent Disability prior to the final vesting date for the Option, then the Option shall immediately vest in the additional number of Option Shares (if any) in which the Optionee would have been vested at the time of such termination had 25% of the Option Shares that were scheduled to be vested on the next anniversary of the Vesting Commencement Date instead vested in a series of twelve (12) successive equal monthly installments over the duration of the twelve (12) month period preceding such anniversary.

This option, to the extent outstanding at the time of a Change in Control but not otherwise fully exercisable, shall automatically accelerate so that this option shall, immediately prior to the effective date of such Change in Control, become exercisable for all of the Option Shares at the time subject to this option and may be exercised for any or all of those Option Shares as fully vested shares of Common Stock. However, this option shall *not* become exercisable on such an accelerated basis, if and to the extent: (i) this option is to be assumed by the successor corporation (or parent thereof) or is otherwise to be continued in full force and effect pursuant to the terms of the Change in Control transaction or (ii) this option is to be replaced with a cash retention program of the successor corporation which preserves the spread existing at the time of the Change in Control on any Option Shares for which this option is not otherwise at that time exercisable (the excess of the Fair Market Value of those Option Shares over the aggregate Exercise Price payable for such shares) and provides for subsequent payout of that spread in accordance with the same Vesting Schedule for those Option Shares as set forth in the Grant Notice.

Immediately following the Change in Control, this option shall terminate and cease to be outstanding, except to the extent assumed by the Successor Company (or parent thereof) or otherwise continued in effect pursuant to the terms of the Change in Control transaction.

If this option is assumed in connection with a Change in Control or otherwise continued in effect, then this option shall be appropriately adjusted, immediately after such Change in Control, to apply to the number and class of securities into which the shares of Common Stock subject to this option would have been converted in consummation of such Change in Control had those shares actually been outstanding at the time. Appropriate adjustments shall also be made to the Exercise Price, provided the aggregate Exercise Price shall remain the same. To the extent the actual holders of the Company's outstanding Common Stock receive cash consideration for their Common Stock in consummation of the Change in Control, the successor corporation may, in connection with the assumption or continuation of this option, substitute one or more shares of its own common stock with a fair market value equivalent to the cash consideration paid per share of Common Stock in such Change in Control, provided such common stock is readily tradable on an established U.S. securities exchange or market.

In the event the Optionee's Service is involuntarily terminated for reasons other than Misconduct within twenty-four (24) months following a Change in Control transaction which does not result in the accelerated vesting of this option pursuant to the provisions of subparagraph (b) of this Paragraph 6, then the option (as assumed or continued in effect) shall automatically vest in full on an accelerated basis so that such option shall immediately become exercisable for all the Option Shares as fully-vested shares and may be exercised for any or all of those Option Shares as vested shares.

This Agreement shall not in any way affect the right of the Company to adjust, reclassify, reorganize or otherwise change its capital or business structure or to merge, consolidate, dissolve, liquidate or sell or transfer all or any part of its business or assets.

Stockholder Rights. The holder of this option shall not have any stockholder rights with respect to the Option Shares until such person shall have exercised the option, paid the Exercise Price and become a holder of record of the purchased shares.

Manner of Exercising Option.

In order to exercise this option with respect to all or any part of the Option Shares for which this option is at the time exercisable, Optionee (or any other person or persons exercising the option) must take the following actions:

Execute and deliver to the Company a Notice of Exercise for the Option Shares for which the option is exercised or comply with such other procedures as the Company may establish for notifying the Company of the exercise of this option for one or more Option Shares.

Pay the aggregate Exercise Price for the purchased shares in one or more of the following forms:

cash or check made payable to the Company;

shares of Common Stock valued at Fair Market Value on the Exercise Date and held by Optionee (or any other person or persons exercising the option) for any required period necessary to avoid a charge to the Company's earnings for financial reporting purposes; or

through a special sale and remittance procedure pursuant to which Optionee (or any other person or persons exercising the option) shall concurrently provide irrevocable instructions (i) to a brokerage firm (reasonably satisfactory to the Company for purposes of administering such procedure in accordance with the Company's pre-clearance/pre-notification policies) to effect the immediate sale of the purchased shares and remit to the Company, out of the sale proceeds available on the settlement date, sufficient funds to cover the aggregate Exercise Price payable for the purchased shares plus all applicable income and employment taxes required to be withheld by the Company by reason of such exercise and (ii) to the Company to deliver the certificates (which may be in electronic form) for the purchased shares directly to such brokerage firm on such settlement date in order to complete the sale.

Except to the extent the sale and remittance procedure is utilized in connection with the option exercise, payment of the Exercise Price must accompany the Notice of Exercise (or other notification procedure) delivered to the Company in connection with the option exercise.

Furnish to the Company appropriate documentation that the person or persons exercising the option (if other than Optionee) have the right to exercise this option.

Make appropriate arrangements with the Company (or Parent or Subsidiary employing or retaining Optionee) for the satisfaction of all applicable income and employment tax withholding requirements applicable to the option exercise. In that regard, regardless of any action the Company or the Affiliate that employs the Optionee (the "Employer") takes with respect to any or all income tax, social insurance, payroll tax, fringe benefits tax, payment on account, or other tax-related items related to the Optionee's participation in the Plan and legally applicable to the Optionee ("Tax-Related Items"), the Optionee acknowledges that the ultimate liability for all Tax-Related Items owed by the Optionee is and remains the Optionee's responsibility and that such amount may exceed the amount actually withheld by the Company and/or the Employer. The Optionee further acknowledges that the Company and/or the Employer (i) makes no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Award, including the grant, vesting or exercise of the option, the issuance of Shares upon exercise of the option, the subsequent sale of Shares; and (ii) does not commit and is under no obligation to structure the terms of the grant or any aspect of the Award to reduce or eliminate the Optionee's liability for Tax-Related Items or achieve any particular tax result. Further, if the Optionee becomes subject to tax in more than one jurisdiction, the Optionee acknowledges that the Company and/or the Employer (or former Employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

As soon as practical after the Exercise Date, the Company shall issue to or on behalf of Optionee (or any other person or persons exercising this option) a certificate (which may be in electronic form) for the purchased Option Shares, with the appropriate legends affixed thereto.

In no event may this option be exercised for any fractional shares.

Compliance with Laws and Regulations.

The exercise of this option and the issuance of the Option Shares upon such exercise shall be subject to compliance by the Company and Optionee with all applicable requirements of law relating thereto and with all applicable regulations of any stock exchange on which the Common Stock may be listed for trading at the time of such exercise and issuance.

The inability of the Company to obtain approval from any regulatory body having authority deemed by the Company to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Company of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Company, however, shall use commercially reasonable efforts to obtain all such approvals.

Additional Conditions.

(a) The Company may cancel this option, and the Optionee shall thereupon cease to have any further right to acquire any shares of Common Stock under such cancelled option, at any time the Optionee is not in compliance with this Agreement, the Plan and the following conditions:

(i) Participant shall not render services for any organization or engage, directly or indirectly, in any business which, in the judgment of the Plan Administrator or, if delegated by the Plan Administrator to the Chief Executive Officer, in the judgment of such officer, is or becomes competitive with the Company or any Affiliate, or which is or becomes otherwise prejudicial to or in conflict with the interests of the Company or any Affiliate. Such judgment shall be based on Participant's positions and responsibilities while employed by the Company or an Affiliate, Participant's post-Service responsibilities and position with the other organization or business, the extent of past, current and potential competition or conflict between the Company or an Affiliate and the other organization or business, the effect on customers, suppliers and competitors of Participant's assuming the post-Service position and such other considerations as are deemed relevant given the applicable facts and circumstances. Participant shall be free, however, to purchase as an investment or otherwise, stock or other securities of such organization or business so long as they are listed upon a recognized securities exchange or traded over the counter, and such investment does not represent a substantial investment to Participant or a greater than one percent (1%) equity interest in the organization or business.

(ii) Participant shall not, without prior written authorization from the Company, disclose to anyone outside the Company, or use in other than the Company's business, any secret or confidential information, knowledge or data, relating to the business of the Company or an Affiliate in violation of his or her agreement with the Company or the Affiliate.

(iii) Participant shall disclose promptly and assign to the Company or the Affiliate all right, title and interest in any invention or idea, patentable or not, made or conceived by Participant during employment by the Company or the Affiliate, relating in any manner to the actual or anticipated business, research or development work of the Company or

the Affiliate and shall do anything reasonably necessary to enable the Company or the Affiliate to secure a patent where appropriate in the United States and in foreign countries.

(iv) Participant shall not in any way, directly or indirectly (a) induce or attempt to induce any employee of the Company to quit employment with the Company; (b) otherwise interfere with or disrupt the Company's relationship with its employees; (c) solicit, entice, or hire away any employee of the Company; or (d) hire or engage any employee of the Company or any former employee of the Company whose employment with the Company ceased less than one (1) year before the date of such hiring or engagement.

(v) Participant will not divert or attempt to divert from the Company any business the Company had enjoyed or solicited from its customers during the two (2) years prior to the diversion or attempted diversion of such business.

(b) Notwithstanding any other provision of the Plan or this Agreement, the Plan Administrator in its sole discretion may cancel this option at any time prior to the exercise thereof, if the employment of the Optionee shall be terminated, other than by reason of death, unless the conditions in this Paragraph 10 are met.

(c) Failure to comply with the conditions of this Paragraph 10 prior to, or during the six months after, any exercise of this option shall cause the exercise to be rescinded. The Company shall notify the Optionee in writing of any such rescission within two (2) years after such exercise and within ten (10) days after receiving such notice, the Optionee shall pay to the Company the amount of any gain realized or payment received as a result of the exercise rescinded. Such payment shall be made either in cash or by returning to the Company the number of shares that the Optionee received in connection with the rescinded exercise.

(d) Upon exercise of this option, the Plan Administrator may require the Optionee to certify on a form acceptable to the Plan Administrator, that the Optionee is in compliance with the terms and conditions of the Plan and this Agreement.

(e) This option, and the right to receive and retain any Option Shares or cash payments covered by this option, shall be subject to rescission, cancellation or recoupment, in whole or part, if and to the extent so provided under any "clawback" or similar policy of the Company in effect on the Grant Date or that may be established thereafter, including any modification or amendment thereto, or as required by the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or other applicable law.

(f) By accepting this Award under the Plan, Participant agrees and acknowledges that Participant is obligated to cooperate with, and provide any and all assistance necessary to, the Company to recover or recoup any Award or amounts paid under the Plan subject to claw-back pursuant to such law or policy. Such cooperation and assistance shall include, but is not limited to, executing, completing and submitting any documentation necessary to recover or recoup any Award or amounts paid pursuant to this Award.

Successors and Assigns. Except to the extent otherwise provided in Paragraphs 3 and 6, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the Company and its successors and assigns and Optionee, Optionee's assigns, the legal representatives, heirs and legatees of Optionee's estate and any beneficiaries of this option designated by Optionee.

Notices. Any notice required to be given or delivered to the Secretary of the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate office at 436 Seventh Avenue, Pittsburgh, PA 15219. Any notice required to be given or delivered to Optionee shall be in writing and addressed to Optionee at the address indicated below Optionee's signature line on the Grant Notice. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

Construction. This Agreement and the option evidenced hereby are made and granted pursuant to the Plan and are in all respects limited by and subject to the terms of the Plan. All decisions of the Plan Administrator with respect to any question or issue arising under the Plan or this Agreement shall be conclusive and binding on all persons having an interest in this option. The provisions of the Plan are incorporated in this Agreement in their entirety. In the event of any conflict between the provisions of this Agreement and the Plan, the provisions of the Plan shall control.

Governing Law. The interpretation, performance and enforcement of this Agreement shall be governed by the laws of the Commonwealth of Pennsylvania without resort to Pennsylvania's conflict-of-laws rules. Any arbitration, legal or equitable action, or any proceeding arising directly, indirectly, or otherwise in connection with, out of, related to, or from the Agreement, or any provision hereof, shall exclusively be filed and adjudicated in Allegheny County, Pennsylvania and no other venue.

Excess Shares. If the Option Shares covered by this Agreement exceed, as of the Grant Date, the number of shares of Common Stock which may without stockholder approval be issued under the Plan, then this option shall be void with respect to those excess shares, unless stockholder approval of an amendment sufficiently increasing the number of shares of Common Stock issuable under the Plan is obtained in accordance with the provisions of the Plan. In no event shall the Option be exercisable with respect to any of the excess Option Shares unless and until such stockholder approval is obtained.

Additional Terms Applicable to an Incentive Stock Option. In the event this option is designated an Incentive Stock Option in the Grant Notice, the following terms and conditions shall also apply to the grant:

This option shall cease to qualify for favorable tax treatment as an Incentive Stock Option if (and to the extent) this option is exercised for one or more Option Shares: (A) more than three (3) months after the date Optionee ceases to be an Employee for any reason other than death or Permanent Disability or (B) more than twelve (12) months after the date Optionee ceases to be an Employee by reason of Permanent Disability.

No installment under this option shall qualify for favorable tax treatment as an Incentive Stock Option if (and to the extent) the aggregate Fair Market Value (determined at the Grant Date) of the Common Stock for which such installment first becomes exercisable hereunder would, when added to the aggregate value (determined as of the respective date or dates of grant) of the Common Stock or other securities for which this option or any other Incentive Stock Options granted to Optionee prior to the Grant Date (whether under the Plan or any other option plan of the Company or any Parent or Subsidiary) first become exercisable during the same calendar year, exceed One Hundred Thousand Dollars (\$100,000) in the aggregate. Should such One Hundred Thousand Dollar (\$100,000) limitation be exceeded in any calendar year, this option

shall nevertheless become exercisable for the excess shares in such calendar year as a Non-Qualified Stock Option.

Should the exercisability of this option be accelerated upon a Change in Control, then this option shall qualify for favorable tax treatment as an Incentive Stock Option only to the extent the aggregate Fair Market Value (determined at the Grant Date) of the Common Stock for which this option first becomes exercisable in the calendar year in which the Change in Control transaction occurs does not, when added to the aggregate value (determined as of the respective date or dates of grant) of the Common Stock or other securities for which this option or one or more other Incentive Stock Options granted to Optionee prior to the Grant Date (whether under the Plan or any other option plan of the Company or any Parent or Subsidiary) first become exercisable during the same calendar year, exceed One Hundred Thousand Dollars (\$100,000) in the aggregate. Should the applicable One Hundred Thousand Dollar (\$100,000) limitation be exceeded in the calendar year of such Change in Control, the option may nevertheless be exercised for the excess shares in such calendar year as a Non-Qualified Stock Option.

Should Optionee hold, in addition to this option, one or more other options to purchase Common Stock which become exercisable for the first time in the same calendar year as this option, then for purposes of the foregoing limitations on the exercisability of such options as Incentive Stock Options, this option and each of those other options shall be deemed to become first exercisable in that calendar year, on the basis of the chronological order in which such options were granted, except to the extent otherwise provided under applicable law or regulation.

Further Assurances. The Optionee agrees, upon demand of the Company or the Plan Administrator, to do all acts and execute, deliver and perform all additional documents, instruments, and agreements that may be reasonably required by the Company or the Plan Administrator, as the case may be, to implement the provisions and purposes of this Agreement and the Plan.

Additional Acknowledgments; Appendix B. By accepting this Award, the Optionee acknowledges and agrees that this Award is subject to the general terms applicable to Awards granted to employees outside the U.S. set forth in Appendix B hereto. Appendix B constitutes part of this Agreement. The Optionee acknowledges that he or she should review the provisions of Appendix B carefully, as this Award will be null and void absent the Optionee's acceptance of such provisions. The Company reserves the right to impose other requirements on the Award to the extent that the Company determines it is necessary or advisable for legal or administrative reasons, and to require the Optionee to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

APPENDIX A

When used in this Agreement, the terms which are defined in the Plan shall have the meanings given to them in the Plan, as modified herein (if applicable). The following definitions shall be in effect under the Agreement:

Agreement shall mean this Stock Option Agreement.

Common Stock shall mean shares of the Company's common stock.

Company shall mean Koppers Holdings Inc., a Pennsylvania corporation, and any successor corporation to all or substantially all of the assets or voting stock of Koppers Holdings Inc. which shall by appropriate action adopt the Plan.

Exercise Date shall mean the date on which the option shall have been exercised in accordance with Paragraph 8 of the Agreement.

Exercise Price shall mean the exercise price per Option Share as specified in the Grant Notice.

Expiration Date shall mean the date on which the option expires as specified in the Grant Notice.

Family Member shall mean any of the following members of the Optionee's family: any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law or sister-in-law.

Grant Date shall mean the date of grant of the option as specified in the Grant Notice.

Grant Notice shall mean the Notice of Grant of Stock Option accompanying the Agreement, pursuant to which Optionee has been informed of the basic terms of the option evidenced hereby.

Misconduct shall mean the commission of any act of fraud, embezzlement or dishonesty by Optionee, any unauthorized use or disclosure by Optionee of confidential information or trade secrets of the Company (or any Parent or Subsidiary), or any other intentional misconduct by Optionee adversely affecting the business or affairs of the Company (or any Parent or Subsidiary) in a material manner. The foregoing definition shall not in any way preclude or restrict the right of the Company (or any Parent or Subsidiary) to discharge or dismiss Optionee or any other person in the Service of the Company (or any Parent or Subsidiary) for any other acts or omissions, but such other acts or omissions shall not be deemed, for purposes of the Plan or this Agreement, to constitute grounds for termination for Misconduct.

Notice of Exercise shall mean the notice of option exercise in the form prescribed by the Company.

Option Shares shall mean the number of shares of Common Stock subject to the option as specified in the Grant Notice.

Optionee shall mean the person to whom the option is granted as specified in the Grant Notice.

Parent shall mean any corporation (other than the Company) in an unbroken chain of corporations ending with the Company, provided each corporation in the unbroken chain (other than the Company) owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.

Plan shall mean the Company's 2018 Long Term Incentive Plan.

Plan Administrator shall mean the committee(s) designated by the Board to administer the Plan.

Retirement shall mean the Participant's voluntary termination from Service (i) on or after his attainment of age sixty-five (65), or (ii) on or after his attainment of age 55 with at least ten (10) years of service, or involuntary termination from Service with at least thirty (30) years of service other than in connection with a termination for Misconduct. "Years of service" means the Participant's total number of years of "accumulated service" as such term is defined with respect to salaried employees under the Retirement Plan for Koppers Inc. (regardless of whether the Participant is eligible to receive a benefit under such plan).

Service shall mean the Optionee's performance of services for the Company (or any Parent or Subsidiary, whether now existing or subsequently established) by a person in the capacity of an Employee, a non-employee member of the board of directors or a consultant or independent advisor. However, the Optionee shall be deemed to cease Service immediately upon the occurrence of either of the following events: (i) the Optionee no longer performs services in any of the foregoing capacities for the Company or any Parent or Subsidiary or (ii) the entity for which the Optionee is performing such services ceases to remain a Parent or Subsidiary of the Company, even though the Optionee may subsequently continue to perform services for that entity. Service shall not be deemed to cease during a period of military leave, sick leave or other personal leave approved by the Company; provided, however, that should such leave of absence exceed three (3) months, then for purposes of determining the period within which the option may be exercised as an Incentive Stock Option under the federal tax laws (if the option is designated as such in the Grant Notice), the Optionee's Service shall be deemed to cease on the first day immediately following the expiration of such three (3)-month period, unless the Optionee is provided, either by statute or by written contract, with the right to return to Service following such leave. Except to the extent otherwise required by law or expressly authorized by the Plan Administrator or by the Company's written policy on leaves of absence, no Service credit shall be given for vesting purposes for any period the Optionee is on a leave of absence.

Subsidiary shall mean any corporation (other than the Company) in an unbroken chain of corporations beginning with the Company, provided each corporation (other than the last corporation) in the unbroken chain owns, at the time of the determination, stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain.

Vesting Schedule shall mean the schedule set forth in the Grant Notice pursuant to which the option is to become exercisable for the Option Shares in one or more installments over the Optionee's period of Service.

APPENDIX B

GENERAL TERMS APPLICABLE TO AWARDS
GRANTED TO EMPLOYEES OUTSIDE THE U.S.

This Appendix B includes additional or different terms and conditions that govern the Award if the Optionee resides and/or works outside the U.S.

A. Data Privacy. *By accepting this Award, the Optionee hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Optionee's personal data as described in this document and any other grant materials by and among, as applicable, the Company, the Employer, and any other Affiliate for the exclusive purpose of implementing, administering, and managing the Optionee's participation in the Plan.*

*The Optionee understands that the Company and the Employer hold certain personal information about the Optionee, including, but not limited to, the Optionee's name, home address, email address, telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company or any Affiliates, and details of any entitlement to shares of stock or equivalent benefits awarded, canceled, vested, unvested, or outstanding in the Optionee's favor ("**Data**"), for the purpose of implementing, administering, and managing the Optionee's participation in the Plan.*

The Optionee understands that the Company, the Employer, or other Affiliates will transfer Data among themselves as necessary, and may each further transfer Data to any third party that is assisting the Company (or may assist the Company in the future) with the implementation, administration, and management of the Plan. The Optionee understands that these recipients may be located in the United States, and that the United States may have different data privacy laws and protections from the Optionee's country. The Optionee understands that the Optionee may request a list with the names and addresses of any potential recipients of Data by contacting the Optionee's local human resources representative. The Optionee authorizes the recipients to receive, possess, use, retain, and transfer Data, in electronic or other form, for the exclusive purposes of implementing, administering, and managing the Optionee's participation in the Plan. The Optionee understands that Data will be held only as long as is necessary to implement, administer, and manage the Optionee's participation in the Plan.

The Optionee understands that the Optionee may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data, or refuse or withdraw the consents herein, in any case without cost, by contacting in writing the Optionee's local human resources representative. Further, the Optionee understands that the Optionee is providing the consents herein on a purely voluntary basis. If the Optionee does not consent, or if the Optionee later seeks to revoke the Optionee's consent, the status of Optionee's employment or service with the Employer will not be affected; the only consequence of refusing or withdrawing the Optionee's consent is that the Company would not be able to grant to the Optionee the option or other awards or to administer or maintain such awards. Therefore, the Optionee understands that refusing or withdrawing the Optionee's consent may affect the Optionee's ability to benefit from the option. For more information on the consequences of the Optionee's refusal to consent or withdrawal of consent, the Optionee understands that the Optionee may contact the Optionee's local human resources representative.

Further, upon request of the Company or the Employer, the Optionee agrees to provide a separate executed data privacy consent form (or any other agreements or consents that may be required by the Company and/or the Employer) that the Company and/or the Employer may deem necessary to obtain from the Optionee for the purpose of administering the Optionee's participation in the Plan in compliance with the data privacy laws in the Optionee's country, either now or in the future. The Optionee understands and agrees that the Optionee will not be able to participate in the Plan if the Optionee fails to provide any such consent or agreement requested by the Company and/or the Employer.

B. Additional Acknowledgements. By entering into this Agreement and accepting the grant of the option evidenced hereby, the Optionee acknowledges, understands, and agrees that:

i. the Plan is established voluntarily by the Company, is discretionary in nature, and may be terminated by the Company at any time, except as otherwise set forth in the Plan;

ii. the grant of the option is voluntary and occasional and does not create any contractual or other right to receive future awards of options or benefits in lieu of options, even if such awards have been awarded in the past;

iii. all decisions with respect to future awards, if any, will be at the sole discretion of the Company;

iv. this Award and the underlying Shares, and the income from and value of same, are not intended to replace any pension rights or compensation;

v. this Award and the underlying Shares, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, but not limited to, calculating any severance, resignation, termination, redundancy, dismissal, or end-of-service payments; bonuses; long-service awards; pension, retirement, or welfare benefits; or similar payments;

vi. unless otherwise agreed with the Company, this Award and the underlying Shares, and the income from and value of same, are not granted as consideration for, or in connection with, any service the Optionee may provide as a director of any Affiliate;

vii. this Award is made solely by the Company, with principal offices at 436 Seventh Avenue, Pittsburgh, PA, U.S.A., and the Company is solely responsible for the administration of the Plan and the Optionee's participation in the Plan;

viii. the future value of the Shares that may be delivered upon exercise of the option is unknown, indeterminable, and cannot be predicted with certainty;

ix. no claim or entitlement to compensation or damages in favor of the Optionee (or any person claiming through the Optionee) shall arise from forfeiture of the option resulting from a termination of Service (for any reason whatsoever, whether or not such termination of Service is later found to be invalid or in breach of the employment laws in the jurisdiction where the Optionee is employed or providing services or the terms of the Optionee's employment or service agreement, if any) or recoupment of all or any

portion of any payment made pursuant to the option as provided by any Company policy on recoupment of incentive compensation;

x. for purposes of the option, the Optionee's termination of Service occurs as of the date the Optionee is no longer actively employed and providing services to the Company or one of its Affiliates (for any reason whatsoever, whether or not such termination of Service is later found to be invalid or in breach of the employment laws in the jurisdiction where the Optionee is employed or providing services or the terms of the Optionee's employment or service agreement, if any), and unless otherwise expressly provided in this Agreement or otherwise determined by the Company, the Optionee's right to vest in any portion of the Award under the Plan, if any, will terminate as of such date and will not be extended by any notice period (e.g., the Optionee's active employment or period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under the employment laws in the jurisdiction where the Optionee is employed or providing services or the terms of the Optionee's employment or service agreement, if any); the Company, in its sole discretion, shall determine when the Optionee is no longer actively employed or providing services for purposes of the Award (including whether the Optionee may still be considered to be actively employed or providing services while on a leave of absence);

xi. unless otherwise provided in the Plan or by the Company in its discretion, the option and the benefits evidenced by this Agreement do not create any entitlement to have the option or any such benefits transferred to, or assumed by, another company nor to be exchanged, cashed out, or substituted, in connection with any corporate transaction affecting the Shares; and

xii. neither the Company, the Employer, nor any other Affiliate shall be liable for any foreign exchange rate fluctuation between the Optionee's local currency and the United States Dollar that may affect the value of the option, any payment made pursuant to the option, or the subsequent sale of any Shares acquired under the Plan.

C.No Advice Regarding Grant. The Company is not providing any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Optionee's participation in the Plan, acquisition of any Shares under the Plan, or subsequent sale of such Shares. The Optionee should consult with the Optionee's personal tax, legal, and financial advisors regarding the Optionee's participation in the Plan before taking any action in relation thereto.

D.Language. The Optionee acknowledges that he or she is proficient in the English language and understands the content of this Agreement and other Plan-related materials. If the Optionee has received this Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version differs from the English version, the English version shall control.

E.Electronic Delivery and Acceptance. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. The Optionee hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

F.Foreign Asset/Account Reporting Requirements. The Optionee acknowledges that there may be certain foreign asset and/or account reporting requirements that may affect the Optionee's ability to acquire or hold Shares acquired under the Plan (or cash received from participating in the Plan) in a brokerage or bank account outside of the Optionee's country. The Optionee may be required to report such accounts, assets, or transactions to the tax or other authorities in his or her country. The Optionee may also be required to repatriate sale proceeds or other funds received as a result of participating in the Plan to the Optionee's country through a designated bank or broker within a certain time after receipt. The Optionee acknowledges that it is his or her responsibility to be compliant with such regulations and the Optionee should speak to his or her personal advisor on this matter.

KOPPERS HOLDINGS INC.
RATIO OF EARNINGS (LOSS) TO FIXED CHARGES
(Dollars in millions, except ratios)

	2013	2014	2015	2016	2017	Six Months Ended June 30, 2018
Earnings (loss):						
Income (loss) from continuing operations before taxes	\$ 77.0	\$ (5.9)	\$ (80.1)	\$ 38.5	\$ 60.3	\$ 40.1
Deduct: Equity earnings net of dividends	0.8	(1.6)	(3.1)	(1.0)	0.0	0.0
Deduct: Pre-tax income of noncontrolling interests	0.0	0.0	0.0	0.0	1.4	6.3
Add: Fixed charges	39.4	51.8	64.6	66.4	58.1	32.5
Earnings (loss) as defined	\$ 115.6	\$ 47.5	\$ (12.4)	\$ 105.9	\$ 117.0	\$ 66.3
Fixed charges:						
Interest expensed	\$ 26.8	\$ 39.1	\$ 50.7	\$ 50.8	\$ 42.5	\$ 25.0
Other	0.4	1.3	0.0	0.0	0.0	0.0
Rents	39.4	36.7	44.7	50.3	50.4	24.2
Interest factor	31%	31%	31%	31%	31%	31%
Estimated interest component of rent	12.2	11.4	13.9	15.6	15.6	7.5
Total fixed charges	\$ 39.4	\$ 51.8	\$ 64.6	\$ 66.4	\$ 58.1	\$ 32.5
Ratio of earnings (loss) to fixed charges(1)	2.93	0.92	(0.19)	1.59	2.01	2.04

(1) In 2014 and 2015, earnings did not cover fixed charges by \$4.3 million and \$77.0 million, respectively.

CERTIFICATIONS

I, Leroy M. Ball, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Koppers Holdings Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-5(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 9, 2018

/s/ LEROY M. BALL, JR.
Leroy M. Ball, Jr.
President and Chief Executive Officer

CERTIFICATIONS

I, Michael J. Zugay, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Koppers Holdings Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-5(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 9, 2018

/s/ MICHAEL J. ZUGAY
Michael J. Zugay
Chief Financial Officer and Treasurer

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Koppers Holdings Inc. (the "Company") on Form 10-Q for the quarter ending June 30, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned hereby certifies in his capacity as an officer of the Company, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ LEROY M. BALL, JR.
Leroy M. Ball, Jr.
Chief Executive Officer
August 9, 2018

/s/ MICHAEL J. ZUGAY
Michael J. Zugay
Chief Financial Officer and Treasurer
August 9, 2018