

Form 5500 Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	Annual Return/Report of Employee Benefit Plan This form is required to be filed for employee benefit plans under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and sections 6057(b) and 6058(a) of the Internal Revenue Code (the Code). ▶ Complete all entries in accordance with the instructions to the Form 5500.	OMB Nos. 1210-0110 1210-0089 2018 This Form is Open to Public Inspection
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Part I	Annual Report Identification Information For calendar plan year 2018 or fiscal plan year beginning <u>01/01/2018</u> and ending <u>12/31/2018</u>
A This return/report is for: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> ☐ a multiemployer plan </div> <div> ☐ a multiple-employer plan (Filers checking this box must attach a list of participating employer information in accordance with the form instructions.) </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> ☒ a single-employer plan </div> <div> ☐ a DFE (specify) ____ </div> </div>	
B This return/report is: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> ☐ the first return/report </div> <div> ☐ the final return/report </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> ☐ an amended return/report </div> <div> ☐ a short plan year return/report (less than 12 months) </div> </div>	
C If the plan is a collectively-bargained plan, check here. ☒	
D Check box if filing under: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> ☒ Form 5558 </div> <div> ☐ automatic extension </div> <div> ☐ the DFVC program </div> </div> <div style="margin-top: 5px;"> ☐ special extension (enter description) </div>	

Part II	Basic Plan Information—enter all requested information				
1a Name of plan <u>ALERIS RETIREMENT PLAN FOR BARGAINED EMPLOYEES</u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">1b Three-digit plan number (PN) ▶</td> <td style="width: 20%; text-align: center;"><u>003</u></td> </tr> <tr> <td colspan="2">1c Effective date of plan <u>05/23/2003</u></td> </tr> </table>	1b Three-digit plan number (PN) ▶	<u>003</u>	1c Effective date of plan <u>05/23/2003</u>	
1b Three-digit plan number (PN) ▶	<u>003</u>				
1c Effective date of plan <u>05/23/2003</u>					
2a Plan sponsor's name (employer, if for a single-employer plan) Mailing address (include room, apt., suite no. and street, or P.O. Box) City or town, state or province, country, and ZIP or foreign postal code (if foreign, see instructions) <u>ALERIS ROLLED PRODUCTS, INC.</u> <u>25825 SCIENCE PARK DR STE 400</u> <u>BEACHWOOD, OH 44122-7392</u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>2b Employer Identification Number (EIN) <u>27-1539745</u></td> </tr> <tr> <td>2c Plan Sponsor's telephone number <u>216-910-3400</u></td> </tr> <tr> <td>2d Business code (see instructions) <u>238300</u></td> </tr> </table>	2b Employer Identification Number (EIN) <u>27-1539745</u>	2c Plan Sponsor's telephone number <u>216-910-3400</u>	2d Business code (see instructions) <u>238300</u>	
2b Employer Identification Number (EIN) <u>27-1539745</u>					
2c Plan Sponsor's telephone number <u>216-910-3400</u>					
2d Business code (see instructions) <u>238300</u>					

Caution: A penalty for the late or incomplete filing of this return/report will be assessed unless reasonable cause is established.

Under penalties of perjury and other penalties set forth in the instructions, I declare that I have examined this return/report, including accompanying schedules, statements and attachments, as well as the electronic version of this return/report, and to the best of my knowledge and belief, it is true, correct, and complete.

SIGN HERE	Filed with authorized/valid electronic signature.	10/11/2019	ELLEN V. MATISKO
	Signature of plan administrator	Date	Enter name of individual signing as plan administrator
SIGN HERE			
	Signature of employer/plan sponsor	Date	Enter name of individual signing as employer or plan sponsor
SIGN HERE			
	Signature of DFE	Date	Enter name of individual signing as DFE

For Paperwork Reduction Act Notice, see the Instructions for Form 5500.

Form 5500 (2018)
v. 171027

3a Plan administrator's name and address ☒ Same as Plan Sponsor	3b Administrator's EIN 3c Administrator's telephone number <div style="background-color: #cccccc; height: 40px; width: 100%;"></div>
4 If the name and/or EIN of the plan sponsor or the plan name has changed since the last return/report filed for this plan, enter the plan sponsor's name, EIN, the plan name and the plan number from the last return/report: a Sponsor's name c Plan Name	4b EIN 4d PN
5 Total number of participants at the beginning of the plan year	5 181
6 Number of participants as of the end of the plan year unless otherwise stated (welfare plans complete only lines 6a(1) , 6a(2) , 6b , 6c , and 6d). a(1) Total number of active participants at the beginning of the plan year a(2) Total number of active participants at the end of the plan year b Retired or separated participants receiving benefits..... c Other retired or separated participants entitled to future benefits d Subtotal. Add lines 6a(2) , 6b , and 6c e Deceased participants whose beneficiaries are receiving or are entitled to receive benefits. f Total. Add lines 6d and 6e g Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item) h Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested	6a(1) 37 6a(2) 34 6b 80 6c 54 6d 168 6e 14 6f 182 6g 6h 0
7 Enter the total number of employers obligated to contribute to the plan (only multiemployer plans complete this item)	7

8a If the plan provides pension benefits, enter the applicable pension feature codes from the List of Plan Characteristics Codes in the instructions:

1B 1I 3D 3H

b If the plan provides welfare benefits, enter the applicable welfare feature codes from the List of Plan Characteristics Codes in the instructions:

9a Plan funding arrangement (check all that apply) (1) ☐ Insurance (2) ☐ Code section 412(e)(3) insurance contracts (3) ☒ Trust (4) ☐ General assets of the sponsor	9b Plan benefit arrangement (check all that apply) (1) ☐ Insurance (2) ☐ Code section 412(e)(3) insurance contracts (3) ☒ Trust (4) ☐ General assets of the sponsor
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10 Check all applicable boxes in 10a and 10b to indicate which schedules are attached, and, where indicated, enter the number attached. (See instructions)

a Pension Schedules

- (1)** ☒ **R** (Retirement Plan Information)
- (2)** ☐ **MB** (Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information) - signed by the plan actuary
- (3)** ☒ **SB** (Single-Employer Defined Benefit Plan Actuarial Information) - signed by the plan actuary

b General Schedules

- (1)** ☒ **H** (Financial Information)
- (2)** ☐ **I** (Financial Information – Small Plan)
- (3)** ☐ 0 **A** (Insurance Information)
- (4)** ☒ **C** (Service Provider Information)
- (5)** ☒ **D** (DFE/Participating Plan Information)
- (6)** ☐ **G** (Financial Transaction Schedules)

Part III Form M-1 Compliance Information (to be completed by welfare benefit plans)

11a If the plan provides welfare benefits, was the plan subject to the Form M-1 filing requirements during the plan year? (See instructions and 29 CFR 2520.101-2.) ☐ Yes ☐ No

If "Yes" is checked, complete lines 11b and 11c.

11b Is the plan currently in compliance with the Form M-1 filing requirements? (See instructions and 29 CFR 2520.101-2.) ☐ Yes ☐ No

11c Enter the Receipt Confirmation Code for the 2018 Form M-1 annual report. If the plan was not required to file the 2018 Form M-1 annual report, enter the Receipt Confirmation Code for the most recent Form M-1 that was required to be filed under the Form M-1 filing requirements. (Failure to enter a valid Receipt Confirmation Code will subject the Form 5500 filing to rejection as incomplete.)

Receipt Confirmation Code _____

SCHEDULE SB (Form 5500) Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	Single-Employer Defined Benefit Plan Actuarial Information This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6059 of the Internal Revenue Code (the Code). ▶ File as an attachment to Form 5500 or 5500-SF.	OMB No. 1210-0110 2018 This Form is Open to Public Inspection
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For calendar plan year 2018 or fiscal plan year beginning <u>01/01/2018</u> and ending <u>12/31/2018</u>	
▶ Round off amounts to nearest dollar.	
▶ Caution: A penalty of \$1,000 will be assessed for late filing of this report unless reasonable cause is established.	
A Name of plan <u>ALERIS RETIREMENT PLAN FOR BARGAINED EMPLOYEES</u>	B Three-digit plan number (PN) ▶ <u>003</u>
C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF <u>ALERIS ROLLED PRODUCTS, INC.</u>	D Employer Identification Number (EIN) <u>27-1539745</u>
E Type of plan: ☒ Single ☐ Multiple-A ☐ Multiple-B	F Prior year plan size: ☐ 100 or fewer ☐ 101-500 ☒ More than 500

Part I	Basic Information
1 Enter the valuation date: Month <u>01</u> Day <u>01</u> Year <u>2018</u>	
2 Assets:	
a Market value.....	2a <u>4084012</u>
b Actuarial value	2b <u>3873701</u>
3 Funding target/participant count breakdown	
a For retired participants and beneficiaries receiving payment	(1) Number of participants (2) Vested Funding Target (3) Total Funding Target
b For terminated vested participants	<u>88</u> <u>1925956</u> <u>1925956</u>
c For active participants	<u>56</u> <u>1017183</u> <u>1017183</u>
d Total	<u>37</u> <u>875224</u> <u>1004806</u>
	<u>181</u> <u>3818363</u> <u>3947945</u>
4 If the plan is in at-risk status, check the box and complete lines (a) and (b)..... ☐	
a Funding target disregarding prescribed at-risk assumptions	4a
b Funding target reflecting at-risk assumptions, but disregarding transition rule for plans that have been in at-risk status for fewer than five consecutive years and disregarding loading factor	4b
5 Effective interest rate	5 <u>5.78 %</u>
6 Target normal cost	6 <u>118640</u>

Statement by Enrolled Actuary To the best of my knowledge, the information supplied in this schedule and accompanying schedules, statements and attachments, if any, is complete and accurate. Each prescribed assumption was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.	
SIGN HERE	
Signature of actuary	<u>09/24/2019</u>
<u>NICHOLAS FRIES</u>	Date
Type or print name of actuary	<u>17-07926</u>
<u>MERCER</u>	Most recent enrollment number
Firm name	<u>216-830-8031</u>
<u>200 PUBLIC SQUARE, SUITE 3760</u> <u>CLEVELAND, OH 44114</u>	Telephone number (including area code)
Address of the firm	

Part II Beginning of Year Carryover and Prefunding Balances

	(a) Carryover balance	(b) Prefunding balance
7 Balance at beginning of prior year after applicable adjustments (line 13 from prior year)	0	0
8 Portion elected for use to offset prior year's funding requirement (line 35 from prior year)	0	0
9 Amount remaining (line 7 minus line 8)	0	0
10 Interest on line 9 using prior year's actual return of <u>15.21</u> %	0	0
11 Prior year's excess contributions to be added to prefunding balance:		
a Present value of excess contributions (line 38a from prior year)		448
b(1) Interest on the excess, if any, of line 38a over line 38b from prior year Schedule SB, using prior year's effective interest rate of <u>5.98</u> %		27
b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return		0
c Total available at beginning of current plan year to add to prefunding balance		475
d Portion of (c) to be added to prefunding balance		0
12 Other reductions in balances due to elections or deemed elections	0	0
13 Balance at beginning of current year (line 9 + line 10 + line 11d – line 12)	0	0

Part III Funding Percentages

14 Funding target attainment percentage	14	98.11%
15 Adjusted funding target attainment percentage	15	98.11%
16 Prior year's funding percentage for purposes of determining whether carryover/prefunding balances may be used to reduce current year's funding requirement	16	96.83%
17 If the current value of the assets of the plan is less than 70 percent of the funding target, enter such percentage.	17	%

Part IV Contributions and Liquidity Shortfalls**18** Contributions made to the plan for the plan year by employer(s) and employees:

(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees	(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees
04/11/2018	37000	0			
07/11/2018	37000	0			
10/11/2018	16000	0			
01/10/2019	30000	0			
09/13/2019	19000	0			
Totals ▶			18(b)	139000	18(c) 0

19 Discounted employer contributions – see instructions for small plan with a valuation date after the beginning of the year:

a Contributions allocated toward unpaid minimum required contributions from prior years	19a	0
b Contributions made to avoid restrictions adjusted to valuation date	19b	0
c Contributions allocated toward minimum required contribution for current year adjusted to valuation date	19c	133272

20 Quarterly contributions and liquidity shortfalls:

- a** Did the plan have a "funding shortfall" for the prior year? ☒ Yes ☐ No
- b** If line 20a is "Yes," were required quarterly installments for the current year made in a timely manner? ☒ Yes ☐ No
- c** If line 20a is "Yes," see instructions and complete the following table as applicable:

Liquidity shortfall as of end of quarter of this plan year			
(1) 1st	(2) 2nd	(3) 3rd	(4) 4th
0	0	0	0

Part V Assumptions Used to Determine Funding Target and Target Normal Cost

21 Discount rate:				
a Segment rates:	1st segment: 3.92%	2nd segment: 5.52%	3rd segment: 6.29%	☐ N/A, full yield curve used
b Applicable month (enter code)				21b 0
22 Weighted average retirement age				22 63
23 Mortality table(s) (see instructions)	Prior regulation:	☐ Prescribed - combined	☒ Prescribed - separate	☐ Substitute
	Current regulation:	☐ Prescribed - combined	☐ Prescribed - separate	☐ Substitute

Part VI Miscellaneous Items

24 Has a change been made in the non-prescribed actuarial assumptions for the current plan year? If "Yes," see instructions regarding required attachment.	☒ Yes	☐ No
25 Has a method change been made for the current plan year? If "Yes," see instructions regarding required attachment.	☐ Yes	☒ No
26 Is the plan required to provide a Schedule of Active Participants? If "Yes," see instructions regarding required attachment.	☒ Yes	☐ No
27 If the plan is subject to alternative funding rules, enter applicable code and see instructions regarding attachment	27	

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years	28	0
29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a)	29	0
30 Remaining amount of unpaid minimum required contributions (line 28 minus line 29)	30	0

Part VIII Minimum Required Contribution For Current Year

31 Target normal cost and excess assets (see instructions):			
a Target normal cost (line 6)	31a	118640	
b Excess assets, if applicable, but not greater than line 31a	31b	0	
32 Amortization installments:	Outstanding Balance		Installment
a Net shortfall amortization installment	74244		14500
b Waiver amortization installment	0		0
33 If a waiver has been approved for this plan year, enter the date of the ruling letter granting the approval (Month _____ Day _____ Year _____) and the waived amount	33		
34 Total funding requirement before reflecting carryover/prefunding balances (lines 31a - 31b + 32a + 32b - 33)	34	133140	
	Carryover balance	Prefunding balance	Total balance
35 Balances elected for use to offset funding requirement	0	0	0
36 Additional cash requirement (line 34 minus line 35)	36	133140	
37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c)	37	133272	
38 Present value of excess contributions for current year (see instructions)			
a Total (excess, if any, of line 37 over line 36)	38a	132	
b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances	38b	0	
39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37)	39	0	
40 Unpaid minimum required contributions for all years	40	0	

Part IX Pension Funding Relief Under Pension Relief Act of 2010 (See Instructions)

41 If an election was made to use PRA 2010 funding relief for this plan:				
a Schedule elected	☐ 2 plus 7 years	☐ 15 years		
b Eligible plan year(s) for which the election in line 41a was made	☐ 2008	☐ 2009	☐ 2010	☐ 2011

SCHEDULE C (Form 5500) Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	Service Provider Information This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA). ► File as an attachment to Form 5500.	OMB No. 1210-0110
		2018
		This Form is Open to Public Inspection.

For calendar plan year 2018 or fiscal plan year beginning **01/01/2018** and ending **12/31/2018**

A Name of plan ALERIS RETIREMENT PLAN FOR BARGAINED EMPLOYEES	B Three-digit plan number (PN) ►	003
C Plan sponsor's name as shown on line 2a of Form 5500 ALERIS ROLLED PRODUCTS, INC.	D Employer Identification Number (EIN) 27-1539745	

Part I	Service Provider Information (see instructions)
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You must complete this Part, in accordance with the instructions, to report the information required for **each person** who received, directly or indirectly, \$5,000 or more in total compensation (i.e., money or anything else of monetary value) in connection with services rendered to the plan or the person's position with the plan during the plan year. If a person received **only** eligible indirect compensation for which the plan received the required disclosures, you are required to answer line 1 but are not required to include that person when completing the remainder of this Part.

1 Information on Persons Receiving Only Eligible Indirect Compensation

a Check "Yes" or "No" to indicate whether you are excluding a person from the remainder of this Part because they received only eligible indirect compensation for which the plan received the required disclosures (see instructions for definitions and conditions)..... ☒ Yes ☐ No

b If you answered line 1a "Yes," enter the name and EIN or address of each person providing the required disclosures for the service providers who received only eligible indirect compensation. Complete as many entries as needed (see instructions).

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation	
NEUBERGER BERMAN	1290 AVENUE OF THE AMERICAS NEW YORK, NY 10104

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation	
FRANKLIN TEMPLETON INVESTMENTS	P.O. BOX 33030 ST PETERSBURG, FL 33733-8030

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation	
VANGUARD	
23-2376849	

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation	
WILLIAM BLAIR FUNDS	222 WEST ADAMS STREET 12TH FLOOR CHICAGO, IL 60606

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

AMERICAN FUNDS SERVICE COMPANY

P.O. BOX 6007
INDIANAPOLIS, IN 46206

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

WELLS FARGO

94-2948313

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

DIMENSIONAL FUND ADVISORS

6300 BEE CAVE ROAD
BUILDING ONE
AUSTIN, TN 78746

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, \$5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

MERCER

13-2834414

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
16 50	NONE	62508	Yes ☐ No ☒	Yes ☐ No ☐		Yes ☐ No ☐

(a) Enter name and EIN or address (see instructions)

JP MORGAN CHASE AND CO.

270 PARK AVE.
NEW YORK, NY 10017

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
17 28 50 51	NONE	23742	Yes ☒ No ☐	Yes ☒ No ☐	0	Yes ☐ No ☒

(a) Enter name and EIN or address (see instructions)

BDO USA LLP

13-5381590

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
10 50	NONE	9729	Yes ☐ No ☒	Yes ☐ No ☐		Yes ☐ No ☐

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, \$5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
			Yes ☐ No ☐	Yes ☐ No ☐		Yes ☐ No ☐

(a) Enter name and EIN or address (see instructions)

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
			Yes ☐ No ☐	Yes ☐ No ☐		Yes ☐ No ☐

(a) Enter name and EIN or address (see instructions)

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
			Yes ☐ No ☐	Yes ☐ No ☐		Yes ☐ No ☐

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received \$1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	(b) Service Codes (see instructions)	(c) Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	(e) Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	
(a) Enter service provider name as it appears on line 2	(b) Service Codes (see instructions)	(c) Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	(e) Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	
(a) Enter service provider name as it appears on line 2	(b) Service Codes (see instructions)	(c) Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	(e) Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	

Part II Service Providers Who Fail or Refuse to Provide Information

4 Provide, to the extent possible, the following information for each service provider who failed or refused to provide the information necessary to complete this Schedule.

(a) Enter name and EIN or address of service provider (see instructions)	(b) Nature of Service Code(s)	(c) Describe the information that the service provider failed or refused to provide
(a) Enter name and EIN or address of service provider (see instructions)	(b) Nature of Service Code(s)	(c) Describe the information that the service provider failed or refused to provide
(a) Enter name and EIN or address of service provider (see instructions)	(b) Nature of Service Code(s)	(c) Describe the information that the service provider failed or refused to provide
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(a) Enter name and EIN or address of service provider (see instructions)	(b) Nature of Service Code(s)	(c) Describe the information that the service provider failed or refused to provide
(a) Enter name and EIN or address of service provider (see instructions)	(b) Nature of Service Code(s)	(c) Describe the information that the service provider failed or refused to provide

Part III Termination Information on Accountants and Enrolled Actuaries (see instructions)
(complete as many entries as needed)

a Name:	b EIN:
c Position:	
d Address:	e Telephone:

Explanation:

a Name:	b EIN:
c Position:	
d Address:	e Telephone:

Explanation:

a Name:	b EIN:
c Position:	
d Address:	e Telephone:

Explanation:

a Name:	b EIN:
c Position:	
d Address:	e Telephone:

Explanation:

a Name:	b EIN:
c Position:	
d Address:	e Telephone:

Explanation:

SCHEDULE D (Form 5500) <small>Department of the Treasury Internal Revenue Service</small> <small>Department of Labor Employee Benefits Security Administration</small>	DFE/Participating Plan Information This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA). ► File as an attachment to Form 5500.	OMB No. 1210-0110 <div style="text-align: center; font-size: 1.2em; font-weight: bold;">2018</div> This Form is Open to Public Inspection.
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For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan <u>ALERIS RETIREMENT PLAN FOR BARGAINED EMPLOYEES</u>	B Three-digit plan number (PN) ►	<u>003</u>
C Plan or DFE sponsor's name as shown on line 2a of Form 5500 <u>ALERIS ROLLED PRODUCTS, INC.</u>	D Employer Identification Number (EIN) <u>27-1539745</u>	

Part I	Information on interests in MTIAs, CCTs, PSAs, and 103-12 IEs (to be completed by plans and DFEs) (Complete as many entries as needed to report all interests in DFEs)
--------	--

a Name of MTIA, CCT, PSA, or 103-12 IE: JPM STRAT PROP IRT DECENT MIR HLD

b Name of sponsor of entity listed in (a): JPMORGAN CHASE BANK N.A.

c EIN-PN <u>13-6038770-001</u>	d Entity code <u>C</u>	e Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) <u>481189</u>
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a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	d Entity code	e Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
-----------------	----------------------	---

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	d Entity code	e Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
-----------------	----------------------	---

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	d Entity code	e Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
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a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	d Entity code	e Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
-----------------	----------------------	---

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	d Entity code	e Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
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a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	d Entity code	e Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
-----------------	----------------------	---

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

a Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity
code**e** Dollar value of interest in MTIA, CCT, PSA, or
103-12 IE at end of year (see instructions)

Part II Information on Participating Plans (to be completed by DFEs)

(Complete as many entries as needed to report all participating plans)

a Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN**a** Plan name**b** Name of
plan sponsor**c** EIN-PN

SCHEDULE H (Form 5500) <small>Department of the Treasury Internal Revenue Service</small> <small>Department of Labor Employee Benefits Security Administration</small> <small>Pension Benefit Guaranty Corporation</small>	Financial Information This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA), and section 6058(a) of the Internal Revenue Code (the Code). ► File as an attachment to Form 5500.	<small>OMB No. 1210-0110</small> 2018 This Form is Open to Public Inspection
For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018		
A Name of plan ALERIS RETIREMENT PLAN FOR BARGAINED EMPLOYEES	B Three-digit plan number (PN) ►	003
C Plan sponsor's name as shown on line 2a of Form 5500 ALERIS ROLLED PRODUCTS, INC.	D Employer Identification Number (EIN) 27-1539745	

Part I Asset and Liability Statement			
1 Current value of plan assets and liabilities at the beginning and end of the plan year. Combine the value of plan assets held in more than one trust. Report the value of the plan's interest in a commingled fund containing the assets of more than one plan on a line-by-line basis unless the value is reportable on lines 1c(9) through 1c(14). Do not enter the value of that portion of an insurance contract which guarantees, during this plan year, to pay a specific dollar benefit at a future date. Round off amounts to the nearest dollar. MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 1b(1), 1b(2), 1c(8), 1g, 1h, and 1i. CCTs, PSAs, and 103-12 IEs also do not complete lines 1d and 1e. See instructions.			
Assets		(a) Beginning of Year	(b) End of Year
a Total noninterest-bearing cash	1a		
b Receivables (less allowance for doubtful accounts):			
(1) Employer contributions.....	1b(1)	163000	49000
(2) Participant contributions	1b(2)		
(3) Other.....	1b(3)		
c General investments:			
(1) Interest-bearing cash (include money market accounts & certificates of deposit).....	1c(1)	52176	25618
(2) U.S. Government securities	1c(2)		
(3) Corporate debt instruments (other than employer securities):			
(A) Preferred	1c(3)(A)		
(B) All other.....	1c(3)(B)		
(4) Corporate stocks (other than employer securities):			
(A) Preferred	1c(4)(A)		
(B) Common.....	1c(4)(B)		
(5) Partnership/joint venture interests	1c(5)	1372200	1961922
(6) Real estate (other than employer real property).....	1c(6)		
(7) Loans (other than to participants)	1c(7)		
(8) Participant loans.....	1c(8)		
(9) Value of interest in common/collective trusts	1c(9)	525112	481189
(10) Value of interest in pooled separate accounts	1c(10)		
(11) Value of interest in master trust investment accounts	1c(11)		
(12) Value of interest in 103-12 investment entities.....	1c(12)		
(13) Value of interest in registered investment companies (e.g., mutual funds).....	1c(13)	1977981	1157237
(14) Value of funds held in insurance company general account (unallocated contracts).....	1c(14)		
(15) Other	1c(15)		

1d Employer-related investments:

		(a) Beginning of Year	(b) End of Year
(1) Employer securities	1d(1)		
(2) Employer real property	1d(2)		
e Buildings and other property used in plan operation	1e		
f Total assets (add all amounts in lines 1a through 1e)	1f	4090469	3674966

Liabilities

g Benefit claims payable	1g		
h Operating payables	1h		
i Acquisition indebtedness	1i		
j Other liabilities	1j		
k Total liabilities (add all amounts in lines 1g through 1j)	1k	0	0

Net Assets

l Net assets (subtract line 1k from line 1f)	1l	4090469	3674966
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Part II Income and Expense Statement

2 Plan income, expenses, and changes in net assets for the year. Include all income and expenses of the plan, including any trust(s) or separately maintained fund(s) and any payments/receipts to/from insurance carriers. Round off amounts to the nearest dollar. MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 2a, 2b(1)(E), 2e, 2f, and 2g.

Income

		(a) Amount	(b) Total
a Contributions:			
(1) Received or receivable in cash from: (A) Employers	2a(1)(A)	139000	
(B) Participants	2a(1)(B)		
(C) Others (including rollovers)	2a(1)(C)		
(2) Noncash contributions	2a(2)		
(3) Total contributions. Add lines 2a(1)(A) , (B) , (C) , and line 2a(2)	2a(3)		139000
b Earnings on investments:			
(1) Interest:			
(A) Interest-bearing cash (including money market accounts and certificates of deposit)	2b(1)(A)	297	
(B) U.S. Government securities	2b(1)(B)		
(C) Corporate debt instruments	2b(1)(C)		
(D) Loans (other than to participants)	2b(1)(D)		
(E) Participant loans	2b(1)(E)		
(F) Other	2b(1)(F)		
(G) Total interest. Add lines 2b(1)(A) through (F)	2b(1)(G)		297
(2) Dividends: (A) Preferred stock	2b(2)(A)		
(B) Common stock	2b(2)(B)		
(C) Registered investment company shares (e.g. mutual funds)	2b(2)(C)	22266	
(D) Total dividends. Add lines 2b(2)(A) , (B) , and (C)	2b(2)(D)		22266
(3) Rents	2b(3)		
(4) Net gain (loss) on sale of assets: (A) Aggregate proceeds	2b(4)(A)		
(B) Aggregate carrying amount (see instructions)	2b(4)(B)		
(C) Subtract line 2b(4)(B) from line 2b(4)(A) and enter result	2b(4)(C)		0
(5) Unrealized appreciation (depreciation) of assets: (A) Real estate	2b(5)(A)		
(B) Other	2b(5)(B)	-137637	
(C) Total unrealized appreciation of assets. Add lines 2b(5)(A) and (B)	2b(5)(C)		-137637

		(a) Amount	(b) Total
(6) Net investment gain (loss) from common/collective trusts	2b(6)		35934
(7) Net investment gain (loss) from pooled separate accounts	2b(7)		
(8) Net investment gain (loss) from master trust investment accounts	2b(8)		
(9) Net investment gain (loss) from 103-12 investment entities	2b(9)		
(10) Net investment gain (loss) from registered investment companies (e.g., mutual funds).....	2b(10)		-150800
c Other income.....	2c		
d Total income. Add all income amounts in column (b) and enter total	2d		-90940

Expenses

e Benefit payment and payments to provide benefits:			
(1) Directly to participants or beneficiaries, including direct rollovers	2e(1)	176754	
(2) To insurance carriers for the provision of benefits	2e(2)		
(3) Other	2e(3)		
(4) Total benefit payments. Add lines 2e(1) through (3).....	2e(4)		176754
f Corrective distributions (see instructions)	2f		
g Certain deemed distributions of participant loans (see instructions)	2g		
h Interest expense	2h		
i Administrative expenses: (1) Professional fees.....	2i(1)	93523	
(2) Contract administrator fees.....	2i(2)		
(3) Investment advisory and management fees.....	2i(3)	7296	
(4) Other	2i(4)	46990	
(5) Total administrative expenses. Add lines 2i(1) through (4).....	2i(5)		147809
j Total expenses. Add all expense amounts in column (b) and enter total	2j		324563

Net Income and Reconciliation

k Net income (loss). Subtract line 2j from line 2d	2k		-415503
l Transfers of assets:			
(1) To this plan.....	2l(1)		
(2) From this plan.....	2l(2)		

Part III Accountant's Opinion

3 Complete lines 3a through 3c if the opinion of an independent qualified public accountant is attached to this Form 5500. Complete line 3d if an opinion is not attached.

a The attached opinion of an independent qualified public accountant for this plan is (see instructions):

(1) ☐ Unqualified (2) ☐ Qualified (3) ☒ Disclaimer (4) ☐ Adverse

b Did the accountant perform a limited scope audit pursuant to 29 CFR 2520.103-8 and/or 103-12(d)?

☒ Yes ☐ No

c Enter the name and EIN of the accountant (or accounting firm) below:

(1) Name: BDO USA, LLP

(2) EIN: 13-5381590

d The opinion of an independent qualified public accountant is **not attached** because:

(1) ☐ This form is filed for a CCT, PSA, or MTIA. (2) ☐ It will be attached to the next Form 5500 pursuant to 29 CFR 2520.104-50.

Part IV Compliance Questions

4 CCTs and PSAs do not complete Part IV. MTIAs, 103-12 IEs, and GIAs do not complete lines 4a, 4e, 4f, 4g, 4h, 4k, 4m, 4n, or 5. 103-12 IEs also do not complete lines 4j and 4l. MTIAs also do not complete line 4l.

During the plan year:

a Was there a failure to transmit to the plan any participant contributions within the time period described in 29 CFR 2510.3-102? Continue to answer "Yes" for any prior year failures until fully corrected. (See instructions and DOL's Voluntary Fiduciary Correction Program.).....

b Were any loans by the plan or fixed income obligations due the plan in default as of the close of the plan year or classified during the year as uncollectible? Disregard participant loans secured by participant's account balance. (Attach Schedule G (Form 5500) Part I if "Yes" is checked.)

	Yes	No	Amount
4a		X	
4b		X	

		Yes	No	Amount
c Were any leases to which the plan was a party in default or classified during the year as uncollectible? (Attach Schedule G (Form 5500) Part II if "Yes" is checked.)	4c		X	
d Were there any nonexempt transactions with any party-in-interest? (Do not include transactions reported on line 4a. Attach Schedule G (Form 5500) Part III if "Yes" is checked.)	4d		X	
e Was this plan covered by a fidelity bond?	4e	X		10000000
f Did the plan have a loss, whether or not reimbursed by the plan's fidelity bond, that was caused by fraud or dishonesty?	4f		X	
g Did the plan hold any assets whose current value was neither readily determinable on an established market nor set by an independent third party appraiser?	4g		X	
h Did the plan receive any noncash contributions whose value was neither readily determinable on an established market nor set by an independent third party appraiser?	4h		X	
i Did the plan have assets held for investment? (Attach schedule(s) of assets if "Yes" is checked, and see instructions for format requirements.)	4i	X		
j Were any plan transactions or series of transactions in excess of 5% of the current value of plan assets? (Attach schedule of transactions if "Yes" is checked, and see instructions for format requirements.)	4j	X		
k Were all the plan assets either distributed to participants or beneficiaries, transferred to another plan, or brought under the control of the PBGC?	4k		X	
l Has the plan failed to provide any benefit when due under the plan?	4l		X	
m If this is an individual account plan, was there a blackout period? (See instructions and 29 CFR 2520.101-3.)	4m			
n If 4m was answered "Yes," check the "Yes" box if you either provided the required notice or one of the exceptions to providing the notice applied under 29 CFR 2520.101-3.	4n			

5a Has a resolution to terminate the plan been adopted during the plan year or any prior plan year? ☐ Yes ☒ No
 If "Yes," enter the amount of any plan assets that reverted to the employer this year _____.

5b If, during this plan year, any assets or liabilities were transferred from this plan to another plan(s), identify the plan(s) to which assets or liabilities were transferred. (See instructions.)

5b(1) Name of plan(s)	5b(2) EIN(s)	5b(3) PN(s)

5c If the plan is a defined benefit plan, is it covered under the PBGC insurance program (See ERISA section 4021.)? ☒ Yes ☐ No ☐ Not determined
 If "Yes" is checked, enter the My PAA confirmation number from the PBGC premium filing for this plan year 4161959. (See instructions.)

SCHEDULE R (Form 5500) Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	Retirement Plan Information This schedule is required to be filed under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6058(a) of the Internal Revenue Code (the Code). ▶ File as an attachment to Form 5500.	OMB No. 1210-0110 2018 This Form is Open to Public Inspection.
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For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan <u>ALERIS RETIREMENT PLAN FOR BARGAINED EMPLOYEES</u>	B Three-digit plan number (PN) ▶ <u>003</u>
C Plan sponsor's name as shown on line 2a of Form 5500 <u>ALERIS ROLLED PRODUCTS, INC.</u>	D Employer Identification Number (EIN) <u>27-1539745</u>

Part I	Distributions
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All references to distributions relate only to payments of benefits during the plan year.

1 Total value of distributions paid in property other than in cash or the forms of property specified in the instructions	1	<u>0</u>
2 Enter the EIN(s) of payor(s) who paid benefits on behalf of the plan to participants or beneficiaries during the year (if more than two, enter EINs of the two payors who paid the greatest dollar amounts of benefits): EIN(s): <u>41-2657133</u>		
Profit-sharing plans, ESOPs, and stock bonus plans, skip line 3.		
3 Number of participants (living or deceased) whose benefits were distributed in a single sum, during the plan year	3	<u>0</u>

Part II	Funding Information (If the plan is not subject to the minimum funding requirements of section 412 of the Internal Revenue Code or ERISA section 302, skip this Part.)
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4 Is the plan administrator making an election under Code section 412(d)(2) or ERISA section 302(d)(2)?	☐ Yes	☐ No	☒ N/A
If the plan is a defined benefit plan, go to line 8.			
5 If a waiver of the minimum funding standard for a prior year is being amortized in this plan year, see instructions and enter the date of the ruling letter granting the waiver. Date: Month _____ Day _____ Year _____ If you completed line 5, complete lines 3, 9, and 10 of Schedule MB and do not complete the remainder of this schedule.			
6 a Enter the minimum required contribution for this plan year (include any prior year accumulated funding deficiency not waived)	6a		
b Enter the amount contributed by the employer to the plan for this plan year	6b		
c Subtract the amount in line 6b from the amount in line 6a. Enter the result (enter a minus sign to the left of a negative amount)	6c		
If you completed line 6c, skip lines 8 and 9.			
7 Will the minimum funding amount reported on line 6c be met by the funding deadline?	☐ Yes	☐ No	☐ N/A
8 If a change in actuarial cost method was made for this plan year pursuant to a revenue procedure or other authority providing automatic approval for the change or a class ruling letter, does the plan sponsor or plan administrator agree with the change?	☐ Yes	☐ No	☒ N/A

Part III	Amendments
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9 If this is a defined benefit pension plan, were any amendments adopted during this plan year that increased or decreased the value of benefits? If yes, check the appropriate box. If no, check the "No" box.....	☐ Increase	☐ Decrease	☐ Both	☒ No
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Part IV	ESOPs (see instructions). If this is not a plan described under section 409(a) or 4975(e)(7) of the Internal Revenue Code, skip this Part.
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10 Were unallocated employer securities or proceeds from the sale of unallocated securities used to repay any exempt loan?	☐ Yes	☐ No
11 a Does the ESOP hold any preferred stock?	☐ Yes	☐ No
b If the ESOP has an outstanding exempt loan with the employer as lender, is such loan part of a "back-to-back" loan? (See instructions for definition of "back-to-back" loan.)	☐ Yes	☐ No
12 Does the ESOP hold any stock that is not readily tradable on an established securities market?	☐ Yes	☐ No

For Paperwork Reduction Act Notice, see the Instructions for Form 5500.

Schedule R (Form 5500) 2018
v. 171027

Part V Additional Information for Multiemployer Defined Benefit Pension Plans

13 Enter the following information for each employer that contributed more than 5% of total contributions to the plan during the plan year (measured in dollars). See instructions. *Complete as many entries as needed to report all applicable employers.*

a Name of contributing employer

b EIN

c Dollar amount contributed by employer

d Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month _____ Day _____ Year _____

e Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) _____

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

a Name of contributing employer

b EIN

c Dollar amount contributed by employer

d Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month _____ Day _____ Year _____

e Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) _____

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

a Name of contributing employer

b EIN

c Dollar amount contributed by employer

d Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month _____ Day _____ Year _____

e Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) _____

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

a Name of contributing employer

b EIN

c Dollar amount contributed by employer

d Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month _____ Day _____ Year _____

e Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) _____

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

a Name of contributing employer

b EIN

c Dollar amount contributed by employer

d Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month _____ Day _____ Year _____

e Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) _____

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

a Name of contributing employer

b EIN

c Dollar amount contributed by employer

d Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month _____ Day _____ Year _____

e Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) _____

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

- 14** Enter the number of participants on whose behalf no contributions were made by an employer as an employer of the participant for:

a The current year

b The plan year immediately preceding the current plan year

c The second preceding plan year

14a**14b****14c**

- 15** Enter the ratio of the number of participants under the plan on whose behalf no employer had an obligation to make an employer contribution during the current plan year to:

a The corresponding number for the plan year immediately preceding the current plan year

b The corresponding number for the second preceding plan year

15a**15b**

- 16** Information with respect to any employers who withdrew from the plan during the preceding plan year:

a Enter the number of employers who withdrew during the preceding plan year

b If line 16a is greater than 0, enter the aggregate amount of withdrawal liability assessed or estimated to be assessed against such withdrawn employers

16a**16b**

- 17** If assets and liabilities from another plan have been transferred to or merged with this plan during the plan year, check box and see instructions regarding supplemental information to be included as an attachment. ☐

Part VI Additional Information for Single-Employer and Multiemployer Defined Benefit Pension Plans

- 18** If any liabilities to participants or their beneficiaries under the plan as of the end of the plan year consist (in whole or in part) of liabilities to such participants and beneficiaries under two or more pension plans as of immediately before such plan year, check box and see instructions regarding supplemental information to be included as an attachment ☐

- 19** If the total number of participants is 1,000 or more, complete lines (a) through (c)

- a** Enter the percentage of plan assets held as:

Stock: _____ % Investment-Grade Debt: _____ % High-Yield Debt: _____ % Real Estate: _____ % Other: _____ %

- b** Provide the average duration of the combined investment-grade and high-yield debt:

☐ 0-3 years ☐ 3-6 years ☐ 6-9 years ☐ 9-12 years ☐ 12-15 years ☐ 15-18 years ☐ 18-21 years ☐ 21 years or more

- c** What duration measure was used to calculate line 19(b)?

☐ Effective duration ☐ Macaulay duration ☐ Modified duration ☐ Other (specify):



Aleris Retirement Plan for Bargained Employees

Financial Statements
And Supplemental Schedules
Years Ended December 31, 2018 and 2017

Aleris Retirement Plan for Bargained Employees

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Independent Auditor's Report

To the Benefits Committee
Aleris Retirement Plan for Bargained Employees
Beachwood, Ohio

Report on the Financial Statements

We were engaged to audit the accompanying financial statements of the Aleris Retirement Plan for Bargained Employees (the Plan), which comprise the statements of net assets available for benefits as of December 31, 2018 and 2017, and the related statements of changes in net assets available for benefits for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on conducting the audits in accordance with auditing standards generally accepted in the United States of America. Because of the matter described in the *Basis for Disclaimer of Opinion* paragraph, however, we were not able to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion.

Basis for Disclaimer of Opinion

As permitted by 29 CFR 2520.103-8 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974, the plan administrator instructed us not to perform, and we did not perform, any auditing procedures with respect to the information summarized in Note 5, which was certified by Wells Fargo Bank, N.A., the trustee of the Plan, except for comparing such information with the related information included in the financial statements. We have been informed by the plan administrator that the trustee holds the Plan's investment assets and executes investment transactions. The plan administrator has obtained a certification from the trustee as of and for the years ended December 31, 2018 and 2017, that the information provided to the plan administrator by the trustee is complete and accurate.

BDO USA, LLP, a Delaware limited liability partnership, is the U.S. member of BDO International Limited, a UK company limited by guarantee, and forms part of the international BDO network of independent member firms.

BDO is the brand name for the BDO network and for each of the BDO Member Firms.

Disclaimer of Opinion

Because of the significance of the matter described in the *Basis for Disclaimer of Opinion* paragraph, we have not been able to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion. Accordingly, we do not express an opinion on these financial statements.

Other Matter - Supplemental Schedules

The supplemental schedules of Assets (Held at End of Year) and Reportable Transactions as of and for the year ended December 31, 2018 are required by the Department of Labor's (DOL) Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974 and are presented for the purpose of additional analysis and are not a required part of the financial statements. Because of the significance of the matter described in the *Basis for Disclaimer of Opinion* paragraph, we do not express an opinion on the supplemental schedules referred to above.

Report on Form and Content in Compliance With DOL Rules and Regulations

The form and content of the information included in the financial statements and supplemental schedules, other than that derived from the information certified by the trustee, have been audited by us in accordance with auditing standards generally accepted in the United States of America and, in our opinion, are presented in compliance with the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974.

BDO USA, LLP

Cleveland, Ohio
October 9, 2019

Aleris Retirement Plan for Bargained Employees

Statements of Net Assets Available for Benefits

	December 31,	
	2018	2017
Assets		
Investments, at fair value as determined by quoted market prices:		
Interest-bearing cash	\$ 25,618	\$ 52,176
Mutual funds	1,157,237	1,977,981
Investments, at estimated fair value:		
Commingled funds	481,189	525,112
Limited partnership interests	1,961,922	1,372,200
Total investments	3,625,966	3,927,469
Employer contributions receivable	49,000	163,000
Net assets available for benefits	<u>\$ 3,674,966</u>	<u>\$ 4,090,469</u>

See accompanying notes to financial statements.

Aleris Retirement Plan for Bargained Employees
Statements of Changes in Net Assets Available for Benefits

	For the Year Ended December 31,	
	2018	2017
Additions:		
Investment income:		
Net (depreciation) appreciation in fair value of investments	\$ (252,504)	\$ 515,774
Interest, dividends, and other	22,564	22,150
	<u>(229,940)</u>	<u>537,924</u>
Employer contributions	<u>139,000</u>	<u>163,000</u>
	(90,940)	700,924
Deductions:		
Benefits paid to participants	176,754	178,312
Administrative expenses	<u>147,809</u>	<u>123,803</u>
	<u>324,563</u>	<u>302,115</u>
Net (decrease) increase	(415,503)	398,809
Net assets available for benefits:		
Beginning of year	4,090,469	3,691,660
End of year	<u><u>\$ 3,674,966</u></u>	<u><u>\$ 4,090,469</u></u>

See accompanying notes to financial statements.

Aleris Retirement Plan for Bargained Employees

Notes to Financial Statements

December 31, 2018 and 2017

1. Description of the Plan

The following description of the Aleris Retirement Plan for Bargained Employees (the “Plan”) is provided for general information only. Complete information regarding the Plan’s provisions may be found in the Plan document, which is available to all participants upon request.

General

The Plan is a noncontributory defined benefit plan that provides pension, disability and death benefits to certain collectively-bargained employees of Aleris Rolled Products, Inc. (the “Plan Sponsor”), a subsidiary of Aleris International, Inc. (the “Company”). The Plan is designed to conform to the provisions of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”).

On July 26, 2018, Aleris Corporation, the Company’s parent, announced that a definitive agreement was finalized for the Aleris Corporation to be acquired by Novelis Inc., a subsidiary of Hindalco Industries Limited. The transaction is expected to close within fifteen months from the date of the definitive agreement. There can be no assurance that the transaction will be consummated within the expected timing or at all. Management believes that this transaction should have no impact on the Plan.

Effective January 1, 2008 and February 1, 2008, the Plan was amended such that participants employed at the Richmond, Virginia plant and the Ashville, Ohio plant, respectively, will no longer earn additional benefit credits, any increase in accrued benefits, or additional credited service, as defined in the Plan. However, hours of service shall continue to accrue for the purpose of determining years of vesting under the Plan.

Information about the Plan, the vesting and benefit provisions and the Pension Benefit Guaranty Corporation’s (“PBGC”) benefit guarantee is contained in the Plan’s *Summary Plan Description*. Copies of the *Summary Plan Description* are available from the Company’s employee benefits department.

Plan Administration

Overall responsibility for administering the Plan rests with the Company’s Benefits Committee, which is appointed by the Board of Directors of the Company. The Company’s Benefits Committee has appointed Wells Fargo Bank, N.A. as the trustee of the Plan (the “Trustee”). Wells Fargo Bank, N.A. is responsible for management and control of the Plan’s assets.

Eligibility

The Plan provides benefits to eligible employees of Aleris Rolled Products, Inc. who are at least 21 years of age and have completed four calendar quarters of service and are employed at either (i) the Ashville, Ohio plant and their employment commencement date occurred prior to February 1, 2001, or (ii) the Richmond, Virginia plant and their employment commencement date occurred prior to September 1, 2001.

Effective January 1, 2008, no hourly bargaining class employee employed at the Richmond, Virginia plant shall become an eligible employee. Effective February 1, 2008, no hourly bargaining class employee employed at the Ashville, Ohio plant shall become an eligible employee.

Funding Policy

The Company has agreed to voluntarily contribute such amounts as are necessary to provide assets sufficient to meet the benefits to be paid to Plan participants. The Company’s intention is to make contributions in amounts sufficient to fund the Plan’s normal costs on a current basis and any increases in the past service liability due to subsequent amendments to the Plan. The Plan has met the minimum funding requirements of ERISA for 2018 and 2017.

Aleris Retirement Plan for Bargained Employees

Notes to Financial Statements (continued)

Benefit and Vesting Provisions

The Plan generally provides for normal retirement at age 65. The Plan allows for early retirement with a 0.5% reduction in an employee's accrued benefit for each month that the employee's early retirement date precedes age 65 and age 62 for employees located at the Ashville, Ohio plant and the Richmond, Virginia plant, respectively. If an employee has completed 30 years of vesting service, regardless of age, the reduction percentages do not apply. Employees vest entirely after five years of service.

The Plan provides for payments of retirement, disability and death benefits to participants or their beneficiaries under various payment options, including a monthly retirement benefit, straight-life annuity and joint-survivor annuity. The determination of benefit payments depends primarily on the years of service as outlined in the Plan.

Plan Termination

The Company reserves the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. Upon termination, the net assets of the Plan will be allocated for payment to the participants in an order of priority as prescribed by ERISA and its related regulations and the Plan document.

Whether all participants receive their benefits should the Plan terminate at some future time will be dependent on the sufficiency, at that time, of the Plan's net assets to provide for accumulated plan benefits and may also depend on the financial condition of the Company and the level of benefits guaranteed by the PBGC as well as the priority of those benefits. Some benefits may be fully or partially provided for by the then-existing net assets of the Plan and the PBGC guarantee, while other benefits may not be provided for at all.

2. Summary of Significant Accounting Policies

Basis of Accounting

The accompanying financial statements of the Plan have been prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and the accompanying notes and supplemental schedules. Actual results could differ from those estimates.

Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks, such as interest rate, market volatility and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near-term and that such changes could materially affect the amounts reported in the Statements of Net Assets Available for Benefits.

Plan contributions are made and the actuarial present value of accumulated plan benefits are reported based on certain assumptions pertaining to interest rates, inflation rates and employee demographics, all of which are subject to change. Due to uncertainties inherent in the estimations and assumptions process, it is at least reasonably possible that changes in these estimates and assumptions in the near term could be material to the financial statements.

Aleris Retirement Plan for Bargained Employees

Notes to Financial Statements (continued)

Investment Valuation and Income Recognition

The Plan's investments are stated at fair value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. See Note 4 for further discussion and disclosures related to fair value measurements.

In conformity with Accounting Standards Codification ("ASC") 820, *Fair Value Measurement*, assets and liabilities measured at fair value are categorized into the following fair value hierarchy:

Level 1 – Fair value is based on unadjusted quoted prices for identical assets or liabilities in an active market that the Plan has the ability to access at the measurement date.

Level 2 – Fair value is based on quoted prices in markets that are not active, quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the asset or liability.

Level 3 – Fair value is based on prices or valuation techniques that require inputs that are both significant to the fair value measurements and unobservable. These inputs reflect management's judgment about the assumptions that a market participant would use in pricing the investment and are based on the best available information, some of which may be internally developed.

Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded as earned. Dividends are recorded on the ex-dividend date. Net (depreciation) appreciation includes the Plan's gains and losses on investments bought and sold as well as held during the year.

Benefit Payments

Benefits are recorded when paid.

Administrative Expenses

Administrative expenses are paid by the Plan.

Actuarial Present Value of Accumulated Plan Benefits

Accumulated plan benefits (see Note 3) represent the actuarial present value of estimated future periodic payments, including lump-sum distributions, that are attributable under the Plan's provisions to services rendered by employees through January 1, 2008 for the Richmond, Virginia plant (February 1, 2008 for the Ashville, Ohio plant). Accumulated plan benefits include benefits expected to be paid to (a) retired or terminated employees or their beneficiaries (b) beneficiaries of deceased employees and (c) present employees or their beneficiaries. Benefits for retired or terminated employees or their beneficiaries and active employees are based on employees' highest job grade worked during the last ten years of credited service and the total number of years of credited service. Benefits payable under all circumstances (retirement, death, disability, and termination of employment) are included, only to the extent they are deemed attributable to employee services rendered through January 1, 2008 for the Richmond, Virginia plant (February 1, 2008 for the Ashville, Ohio plant).

Aleris Retirement Plan for Bargained Employees

Notes to Financial Statements (continued)

Evaluation of Subsequent Events

Plan management has evaluated subsequent events through October 9, 2019, which is the date the financial statements were available to be issued, and has determined that there were no subsequent events that have occurred through that date that have not already been reflected in the financial statements and / or disclosed in the notes.

3. Actuarial Present Value of Accumulated Plan Benefits

Mercer (U.S.) Inc., the Plan's actuary, estimated the actuarial present value of accumulated plan benefits, which is the amount that resulted from applying actuarial assumptions to adjust the accumulated plan benefits earned by the participants to reflect the time value of money (through discounts for interest) and the probability of payment (by means of decrements for death, disability, withdrawal or retirement) between the valuation date and the expected date of payment.

The actuarial present value of accumulated plan benefits is as follows:

	<u>January 1,</u>	
	<u>2018</u>	<u>2017</u>
Actuarial present value of accumulated plan benefits:		
Vested benefits:		
Participants currently receiving benefits	\$ 1,634,059	\$ 1,690,637
Other participants	1,468,396	1,368,916
Total vested benefits	3,102,455	3,059,553
Non-vested benefits	108,491	116,744
Total actuarial present value of accumulated plan benefits	<u>\$ 3,210,946</u>	<u>\$ 3,176,297</u>

The changes in accumulated plan benefits as of January 1, 2018, are as follows:

Actuarial present value of accumulated plan benefits at beginning of year	\$ 3,176,297
(Decrease) increase during the year attributed to:	
Benefits accumulated and gains/losses	(61,966)
Increase for interest due to the decrease in the discount period	238,678
Benefits paid	(178,312)
Change in actuarial assumptions	36,249
Net increase	<u>34,649</u>
Actuarial present value of accumulated plan benefits at end of year	<u>\$ 3,210,946</u>

Aleris Retirement Plan for Bargained Employees

Notes to Financial Statements (continued)

Significant assumptions underlying the actuarial valuation include:

Assumed rate of return on investments	7.60%
Mortality basis	Adjusted RP-2014, which backs out the post-2006 mortality improvements, blue collar, separate annuitant & non-annuitant, sex distinct base tables, projected generationally using the MP-2017 projection scale (The RP-2014 generational projected with scale MP-2016 and blue collar mortality, separate for annuitant/non-annuitants for the year beginning January 1, 2017.)
Normal retirement	Age 65 or thirty years of vesting service

The actuarial assumptions are based on the presumption that the Plan will continue. Were the Plan to terminate, different actuarial assumptions and other factors might be applicable in determining the actuarial present value of accumulated plan benefits. The actuary estimated the accumulated plan benefits as of January 1, 2018.

4. Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy distinguishes between (1) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (2) an entity's own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy in ASC 820 are described in Note 2.

The level in the fair value hierarchy within which the fair value measurement is classified is determined based on the lowest level input that is significant to the fair value measure in its entirety. Following is a description of the valuation techniques and inputs used for each major class of assets measured at fair value.

Interest-bearing cash: Valued at carrying value (which approximates fair value due to the short-term nature of the asset).

Registered investment companies (mutual funds): Valued at quoted prices from an active market which represents the net asset value ("NAV") of shares held by the Plan at year-end.

Commingled funds: Include pooled separate accounts, common and collective funds. Commingled private funds include multiple kinds of assets from several accounts combined to mitigate risk through investment diversification. Pooled separate accounts are valued at the NAV of units held by the Plan, which is determined by dividing the fair value of the fund's net assets by its units outstanding at the valuation date. Common collective funds are valued based on net asset value per share.

Limited partnership interests: Valued at estimated NAV at the valuation date.

While the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Aleris Retirement Plan for Bargained Employees

Notes to Financial Statements (continued)

The following tables set forth by level, within the fair value hierarchy, the Plan's assets carried at fair value as of December 31, 2018 and 2017:

Assets at Fair Value as of December 31, 2018				
	Total	Level 1	Level 2	Level 3
Interest-bearing cash	\$ 25,618	\$ 25,618	\$ -	\$ -
Mutual funds:				
Small/Mid U.S. equity	138,061	138,061	-	-
Large U.S. equity	376,476	376,476	-	-
International equity	642,700	642,700	-	-
Total assets in the fair value hierarchy	1,182,855	1,182,855	-	-
Investments measured at NAV (a)	2,443,111			
Total assets	<u>\$ 3,625,966</u>	<u>\$ 1,182,855</u>	<u>\$ -</u>	<u>\$ -</u>

Assets at Fair Value as of December 31, 2017				
	Total	Level 1	Level 2	Level 3
Interest-bearing cash	\$ 52,176	\$ 52,176	\$ -	\$ -
Mutual funds:				
Small/Mid U.S. equity	204,510	204,510	-	-
Large U.S. equity	989,138	989,138	-	-
International equity	784,333	784,333	-	-
Total assets in the fair value hierarchy	2,030,157	2,030,157	-	-
Investments measured at NAV (a)	1,897,312			
Total assets	<u>\$ 3,927,469</u>	<u>\$ 2,030,157</u>	<u>\$ -</u>	<u>\$ -</u>

- (a) In accordance with ASC 820-10, certain investments that were measured at NAV (or its equivalent) have not been classified in the fair value hierarchy. The fair value amounts presented in the tables are intended to permit reconciliation of the fair value hierarchy to the line items presented in the Statements of Net Assets Available for Benefits.

The following table summarizes investments measured at fair value based on NAV per share as of December 31, 2018 and 2017:

As of December 31,		
	2018	2017
Commingled funds:		
Core real estate (a)	\$ 481,189	\$ 525,112
Limited partnership interests:		
Core fixed income (b)	1,122,249	986,169
Hedged equity (c)	537,998	-
Small cap value equity (d)	301,675	386,031
Total assets measured at fair value based on NAV	<u>\$ 2,443,111</u>	<u>\$ 1,897,312</u>

Aleris Retirement Plan for Bargained Employees
Notes to Financial Statements (continued)

A description of the significant investment strategies is as follows:

- a) **Core real estate:** Core real estate fund is composed primarily of real estate investments owned through a commingled pension trust fund. The investment objective of the fund is to provide a high, stable income stream with the potential for moderate capital appreciation over the long term. The core real estate fund invests in high-quality stabilized office, retail, residential and industrial assets in primary markets throughout the United States. Management of the core real estate fund has the ability to rebalance and refine the composition of the overall portfolio and remove assets of lesser quality and/or growth prospects, and where appropriate, trade up for asset quality and geographic location. As a result of how the fund is managed and priced, an extended notice period of six months is required for redemption requests. The Plan has the ability to redeem the investment at the NAV (or its equivalent) in the near term.
- b) **Core fixed income:** Core fixed income fund invests primarily in fixed income securities. The investment objective is to seek total return consistent with the preservation of capital by investing in U.S. dollar-denominated fixed income securities, particularly U.S. government, agency, corporate and mortgage-backed issues. Investments may also include highly liquid AAA-rated mortgage paper, investment grade corporate and Yankee securities. Core fixed income is valued based on the Plan's ownership interest in the net asset value of the investment, which is used as a practical expedient to fair value per the underlying investment funds, which are based upon the Plan's own assumptions about the assumptions a market participant would use in pricing the assets and liabilities of the fund. The Plan has the ability to redeem the investment at the NAV (or its equivalent) on the measurement date.
- c) **Hedged equity:** Hedged equity fund is comprised primarily of shares or units in other investment companies or trusts. The fund invests the assets of its portfolios in other private investment funds. The investment objective of the fund is to generate absolute returns while maintaining a moderate level of risk. Its portfolio assets are allocated to the other private investment funds targeting absolute returns throughout the global financial markets with an emphasis on developed markets. In addition to its investments in other private investment funds, the fund may also make short-term investments for liquidity or defensive purposes, including but not limited to, interest-earning money market accounts, government obligations, commercial paper and short-term certificates of deposit. The fund may also maintain positions in a variety of derivative and non-derivative financial instruments in order to manage the various types of risks that are associated with the financial instruments and markets in which it invests. Hedged equity fund is valued based on the Plan's ownership interest in the net asset value of the investment funds, which are based upon the Plan's own assumptions about the assumptions a market participant would use in pricing the assets and liabilities of the fund. The fund's investments can only be redeemed on the first business day of each calendar quarter or each calendar month, but only after such redemption request has been made at least 45 days prior to the last business day of each quarter. The Plan has the ability to redeem the investment at the NAV (or its equivalent) in the near term.
- d) **Small cap value equity:** Limited partnership interests invested primarily in equity securities of domestic and international small capitalization companies. Small cap value equity is valued based on the Plan's ownership interest in the net asset value of the investment, which is used as a practical expedient to fair value per the underlying investment funds, which are based upon the Plan's own assumptions about the assumptions a market participant would use in pricing the assets and liabilities of the fund. Redemptions may be made on the last day of any month, subject to approval and certain other limitations. The Plan has the ability to redeem the investment at the NAV (or its equivalent) at the reporting date.

There were no unfunded commitments at December 31, 2018 and 2017 for any of the commingled funds or limited partnership interests.

Aleris Retirement Plan for Bargained Employees

Notes to Financial Statements (continued)

The Company's Benefits Committee is responsible for determining the Plan's valuation policies and analyzing information provided by the investment Trustee and funds' general managers or partners that is used to determine the fair value of the Plan's investments. The Company's Benefits Committee is comprised of various members of the Company's management (including the Company's Chief Financial Officer, General Counsel and Executive Vice President, and Chief Human Resources Officer) and reports to the Company's Board of Directors. The Company also has established policies and procedures that relate to the approval of all new Level 3 assets in which the Plan is permitted to invest.

5. Investments (unaudited)

Other than the fair values of commingled funds and limited partnership interests and the related interest and net appreciation or depreciation, all investment information for the Plan disclosed in the accompanying financial statements and supplemental schedules, including investments held at December 31, 2018 and 2017, and net (depreciation) appreciation in fair value of investments and interest and dividends for the years ended December 31, 2018 and 2017, was obtained or derived from information provided to the plan administrator and certified as complete and accurate by the Trustee.

The following investment information was not certified by the Trustee:

	December 31,	
	2018	2017
IR&M Long Government Credit Fund LLC	\$ 1,122,249	\$ 986,169
Strategic Property Trust Fund of JPMC	481,189	525,112
Frontier Small Cap Value Fund, L.P.	301,675	386,031
Neuberger Berman US Equity Index Putwrite Fund LLC	537,998	-

	For the Year Ended	
	December 31,	
	2018	2017
Net (depreciation) appreciation in fair value of:		
IR&M Long Government Credit Fund LLC	\$ (40,965)	\$ 85,623
Strategic Property Trust Fund of JPMC	5,540	35,277
Frontier Small Cap Value Fund, L.P.	(16,431)	95,105
Neuberger Berman US Equity Index Putwrite Fund LLC	(37,002)	-

6. Transactions with Parties-in-Interest

Fees paid during the year for services rendered by parties-in-interest were based on customary and reasonable rates for such services. Certain of the Plan's investments are managed by the Trustee. These transactions qualify as party-in-interest transactions; however, they are exempt from the prohibited transactions rules under ERISA.

Aleris Retirement Plan for Bargained Employees
Notes to Financial Statements (continued)

7. Tax Status

The Plan received a determination letter from the Internal Revenue Service (the “IRS”) dated December 10, 2011, stating that the Plan is qualified under Section 401(a) of the Internal Revenue Code (the “Code”) and, therefore, the related trust is exempt from taxation. Subsequent to this determination by the IRS, the Plan was amended. Once qualified, the Plan is required to operate in conformity with the Code to maintain its qualification. The plan administrator and the Plan’s tax counsel believe the Plan is being operated in compliance with the applicable requirements of the Code and, therefore, believe that the Plan, as amended, is qualified and the related trust is tax-exempt.

Accounting principles generally accepted in the United States of America require Plan management to evaluate uncertain tax positions taken by the Plan. The financial statement effects of a tax position are recognized when the position is more likely than not, based on the technical merits, to not be sustained upon examination by the IRS. The plan administrator has analyzed the tax positions taken by the Plan, and has concluded that as of December 31, 2018 and 2017, there are no uncertain tax positions taken or expected to be taken. The Plan has recognized no interest or penalties related to uncertain tax positions. The Plan is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

Aleris Retirement Plan for Bargained Employees

EIN # 27-1539745 Plan # 003

Schedule H, Line 4i – Schedule of Assets (Held at End of Year)

December 31, 2018

(a)	(b) Identity of Issue, Borrower, Lessor, or Similar Party	(c) Description of Investment, Including Maturity Date, Rate of Interest, Collateral, Par, or Maturity Value	(d) Cost	(e) Current Value
	Interest-Bearing Cash			
*	Wells Fargo Bank Collateralized Instl Bank Deposit		\$ 25,618	\$ 25,618
	Registered Investment Companies			
	Vanguard Institutional Index Fund	1,654 shares	370,404	376,476
	American Funds Europacific Growth Fund	7,168 shares	397,555	322,494
	Templeton Instl Foreign Small Company Fund	9,694 shares	233,948	174,108
	DFA Emerging Markets Core Equity Fund	7,590 shares	160,745	146,098
	Vanguard Mid-Cap Growth Index Fund	2,682 shares	147,460	138,061
			<u>1,310,112</u>	<u>1,157,237</u>
	Commingled Funds			
	Strategic Property Trust Fund of JPMC	138 shares	475,648	481,189
	Limited Partnership Interests			
	IR&M Long Government Credit Fund LLC	100,397 shares	1,163,213	1,122,249
	Neuberger Berman US Equity Index Putwrite Fund LLC	575,000 shares	575,000	537,998
	Frontier Small Cap Value Fund, L.P.	140,500 shares	318,108	301,675
			<u>2,056,321</u>	<u>1,961,922</u>
			<u>\$ 3,867,699</u>	<u>\$ 3,625,966</u>

* Denotes a party-in-interest to the Plan.

Aleris Retirement Plan for Bargained Employees

EIN # 27-1539745 Plan # 003

Schedule H, Line 4j – Schedule of Reportable Transactions

Year Ended December 31, 2018

(a) Identity of Party Involved/ (b) Description of Asset	(c) Purchase Price	(d) Selling Price	(e) Cost of Asset	(f) Current Value of Asset on Transaction Date	(g) Net Gain (Loss)
Category 1 – Single transactions in excess of 5% of plan assets					
Neuberger Berman US Equity Index Putwrite Fund LLC	\$ 575,000	\$ -	\$ 575,000	\$ 575,000	\$ -
Neuberger Berman US Equity Index Putwrite Fund LLC	-	487,044	500,515	487,044	(13,471)
Vanguard Institutional Index Fund	370,404	-	370,404	370,404	-
Vanguard 500 Index Fund	-	370,404	225,700	370,404	144,704
Wells Fargo Bank Collateralized Instl Bank Deposit	572,044	-	572,044	572,044	-
Wells Fargo Bank Collateralized Instl Bank Deposit	-	575,000	575,000	575,000	-
Category 2-Series of transactions					
JP Morgan Strategic Property Fund	-	75,000	55,440	75,000	\$ 19,560
JP Morgan Strategic Property Fund	-	1,267	936	1,267	331
JP Morgan Strategic Property Fund	-	1,292	946	1,292	346
JP Morgan Strategic Property Fund	-	1,140	831	1,140	309
JP Morgan Strategic Property Fund	-	1,159	839	1,159	320
IR&M Long Government Credit Fund LLC	75,000	-	75,000	75,000	-
IR&M Long Government Credit Fund LLC	-	567	510	567	57
IR&M Long Government Credit Fund LLC	-	633	589	633	44
IR&M Long Government Credit Fund LLC	-	35,000	32,107	35,000	2,893
IR&M Long Government Credit Fund LLC	-	626	579	626	47
IR&M Long Government Credit Fund LLC	25,000	-	25,000	25,000	-
IR&M Long Government Credit Fund LLC	-	30,000	28,575	30,000	1,425
IR&M Long Government Credit Fund LLC	-	613	589	613	24
IR&M Long Government Credit Fund LLC	-	10,000	9,579	10,000	421
IR&M Long Government Credit Fund LLC	180,000	-	180,000	180,000	-
IR&M Long Government Credit Fund LLC	-	20,000	18,703	20,000	1,297
Neuberger Berman US Equity Index Putwrite Fund LLC	575,000	-	575,000	575,000	-
Cash held at ABS Alpha Global Equity Fund	-	25,311	25,110	25,311	201
Frontier Small Cap Value Fund, L.P.	-	30,000	30,000	30,000	-
Category 3 – Series of transactions in excess of 5% of plan assets					
Neuberger Berman US Equity Index Putwrite Fund LLC	575,000	-	575,000	575,000	-
Neuberger Berman US Equity Index Putwrite Fund LLC	-	487,044	500,515	487,044	(13,471)
DFA Emerging Markets Core Equity Fund	205,253	-	205,253	205,253	-
DFA Emerging Markets Core Equity Fund	-	45,000	47,975	45,000	(2,975)
IR&M Long Government Credit Fund LLC	280,000	-	280,000	280,000	-
IR&M Long Government Credit Fund LLC	-	97,439	91,231	97,439	6,208
Vanguard Institutional Index Fund	370,404	-	370,404	370,404	-
Vanguard 500 Index	15,000	-	15,000	15,000	-
Vanguard 500 Index	-	505,404	297,062	505,404	208,342
Wells Fargo Bank Collateralized Instl Bank Deposit	1,322,466	-	1,322,466	1,322,466	-
Wells Fargo Bank Collateralized Instl Bank Deposit	-	1,323,905	1,323,905	1,323,905	-
Category 4-Single transaction by Broker					
JP Morgan Strategic Property Fund	-	75,000	55,440	75,000	19,560
JP Morgan Strategic Property Fund	-	1,267	936	1,267	331
JP Morgan Strategic Property Fund	-	1,292	946	1,292	346
JP Morgan Strategic Property Fund	-	1,140	831	1,140	309
JP Morgan Strategic Property Fund	-	1,159	839	1,159	320
IR&M Long Government Credit Fund LLC	75,000	-	75,000	75,000	-
IR&M Long Government Credit Fund LLC	-	567	510	567	57
IR&M Long Government Credit Fund LLC	-	633	589	633	44
IR&M Long Government Credit Fund LLC	-	35,000	32,107	35,000	2,893
IR&M Long Government Credit Fund LLC	-	626	579	626	47
IR&M Long Government Credit Fund LLC	25,000	-	25,000	25,000	-
IR&M Long Government Credit Fund LLC	-	30,000	28,575	30,000	1,425
IR&M Long Government Credit Fund LLC	-	613	589	613	24
IR&M Long Government Credit Fund LLC	-	10,000	9,579	10,000	421
IR&M Long Government Credit Fund LLC	180,000	-	180,000	180,000	-
IR&M Long Government Credit Fund LLC	-	20,000	18,703	20,000	1,297
Neuberger Berman US Equity Index Putwrite Fund LLC	575,000	-	575,000	575,000	-
Cash held at ABS Alpha Global Equity Fund	-	25,311	25,110	25,311	201
Frontier Small Cap Value Fund	-	30,000	30,000	30,000	-

Schedule SB, line 26 — Schedule of Active Participant Data

ATTAINED AGE	YEARS OF CREDITED SERVICE										TOTAL
	UNDER 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	
Under 25											
25-29											
30-34											
35-39											
40-44			3	2							5
45-49			2								2
50-54			4		2	2					8
55-59			1	4		2					7
60-64			1	3			1	2	1		8
65-69			2			2		2	1		7
70 & up											
Total			13	9	2	6	1	4	2		37

In each cell, the top number is the count of active participants for each age/service combination. Credit service was frozen effective January 1, 2008 for all participants with the exception of Ashville union participants who were frozen effective February 1, 2008.

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

ACTUARIAL ASSUMPTIONS

DISCOUNT RATE SPONSOR ELECTIONS

• Segment rates or full yield curve	Segment		
• Look-back months	0		
	<u>Stabilized</u>	<u>Nonstabilized</u>	
• First 5 years	3.92%	1.81%	
• Next 15 years	5.52%	3.68%	
• Over 20 years	6.29%	4.53%	
Mortality sponsor elections			
• Healthy participants	Section 430(h)(3) prescribed separate static annuitant and nonannuitant mortality tables in accordance with the regulations in effect prior to the 2018 plan year. These tables are based on the RP-2000 mortality tables projected with mortality improvement to the valuation year plus 7 and 15 years based on Scale AA.		
• Pre-1995 disabilities			
• Post-1994 disabilities			
Other economic assumptions			
• Expected investment return	7.10% for year 2018 and 7.75% for years 2016 and 2017. (limited to 3rd segment rate)		
• Expenses	\$116,806 added to current year normal cost		

RATIONALE FOR ECONOMIC ASSUMPTIONS

- **Discount Rate** – As prescribed by IRS.
- **Expected investment return** – The expected rate of return on plan assets is based on a blend of the hypothetical past performance of the plan's target asset mix, adjusted for current market conditions, and the median simulated investment return using capital market assumptions published in Mercer Investment Consulting's Capital Markets Outlook for the plan's target asset mix. The expected return on assets assumption is net of an adjustment for investment expenses assumed to be paid from plan assets.
- **Expenses** – Expenses are based on year-by-year experience for actual administrative expenses paid from plan assets and adjusted for the difference in expected PBGC premiums.

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

DEMOGRAPHIC ASSUMPTIONS

• Withdrawal	See table of sample rates.																																																						
• Disability incidence	See table of sample rates that based on the 1985 Pension Disability Class 3 tables.																																																						
• Retirement age	<table><tr><th rowspan="2">Attained age</th><th colspan="3">Percentage</th></tr><tr><th>Less than 30 years of service for Ashville location</th><th>Less than 30 years of service for Richmond location</th><th>More than 30 years of service</th></tr><tr><td>55</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>56</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>57</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>58</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>59</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>60</td><td>15%</td><td>15%</td><td>10%</td></tr><tr><td>61</td><td>10%</td><td>10%</td><td>10%</td></tr><tr><td>62</td><td>25%</td><td>40%</td><td>40%</td></tr><tr><td>63</td><td>10%</td><td>10%</td><td>10%</td></tr><tr><td>64</td><td>10%</td><td>10%</td><td>10%</td></tr><tr><td>65</td><td>100%</td><td>100%</td><td>100%</td></tr></table>				Attained age	Percentage			Less than 30 years of service for Ashville location	Less than 30 years of service for Richmond location	More than 30 years of service	55	0%	0%	5%	56	0%	0%	5%	57	0%	0%	5%	58	0%	0%	5%	59	0%	0%	5%	60	15%	15%	10%	61	10%	10%	10%	62	25%	40%	40%	63	10%	10%	10%	64	10%	10%	10%	65	100%	100%	100%
Attained age	Percentage																																																						
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61	10%	10%	10%																																																				
62	25%	40%	40%																																																				
63	10%	10%	10%																																																				
64	10%	10%	10%																																																				
65	100%	100%	100%																																																				

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

• Benefit commencement age for		
– Future and current vested deferred	<u>Richmond participants</u> 62 with 10 years of service or 65. <u>Ashville participants</u> 65	
• Spouse assumptions	<u>Male participants</u>	<u>Female participants</u>
– Percentage married	75%	75%
– Spouse age difference	3 years younger	3 years older
Form of payment	<u>Life Annuity</u>	<u>50% J&S w/ PopUp</u>
• Active retirements	25%	75%
• Future vested deferred	25%	75%
• Future disabilities	25%	75%
• Future deaths	0%	100% (no pop-up)
• Current vested deferred	25%	75%
Unpredictable contingent event assumptions	Likelihood of event is de minimis.	

*Schedule SB, Part V — Statement of Actuarial Assumptions/Methods***Table of Sample Rates**

ATTAINED AGE	PERCENTAGE		
	WITHDRAWAL	DISABILITY INCIDENCE	
		MALE	FEMALE
20	4.86%	0.15%	0.09%
25	3.90%	0.22%	0.15%
30	3.10%	0.31%	0.25%
35	2.42%	0.43%	0.39%
40	1.88%	0.60%	0.55%
45	1.46%	0.83%	0.78%
50	1.12%	1.22%	1.20%
55	0.84%	2.12%	1.96%
60	0.60%	3.24%	2.33%
65	0.38%	4.37%	2.72%

RATIONALE FOR DEMOGRAPHIC ASSUMPTIONS

- **Mortality** – Mortality table prescribed by the IRS. IRS released the new prescribed funding mortality tables to determine minimum contributions for 2018 plan year and onwards. The regulation permits the use of old methodology funding tables (except lump sum tables) until the 2019 plan year. This election does not require IRS approval. The Plan Sponsor chose to use the PPA tables based on old methodology for the 2018 plan year.
- **Withdrawal** – The termination table is based on the Society of Actuaries 2003 small plan, age-based turnover table with adjustments. Annual review of the experience has shown that this table produced a reasonable approximation of the rates of termination experienced by the plan.
- **Retirement age** – Retirement rates have been based on the actuary's experience with similar plans, taking into consideration retirement subsidies the plan offers at various ages and the age social insurance programs are first available. Annual review of the plan experience has shown that these rates provide similar results to the actual rates of retirement experienced under the plan.

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

ACTUARIAL METHODS

Asset Methods

The asset valuation method is an average of the adjusted market value for each year during the last two years preceding the valuation date. The adjusted market value is the market value at each determination date adjusted to the valuation date based on actual cash flows and expected interest at the lesser of the expected rate of return and the third segment rate. This amount is adjusted to be no greater than 110% and no less than 90% of the fair market value, as defined in IRC Section 430.

A characteristic of this asset method is that, over time, it is slightly more likely to produce an actuarial value of assets that is less than the market value of assets than an actuarial value that is greater than the market value.

Participant Methods

Participants or former participants are included or excluded from the valuation as described below:

- **Participants included:** The plan sponsor provides us with data on all employees as of the valuation date.
- **Participants excluded:** No actuarial liability is included for nonvested participants who terminated prior to the valuation date. For this purpose, participants with a break in service on the valuation date are treated as terminated participants.
- **Insurance contracts:** The plan does not have any insurance contracts.

Minimum Funding Methods

The funding target for minimum funding calculations is computed using the traditional unit credit method of funding. The objective under this method is to fund each participant's benefits under the plan as they accrue. Thus, the total pension to which each participant is expected to become entitled at retirement is broken down into units, each associated with a year of past or future credited service.

A detailed description of the calculation follows:

- The plan's valuation date is the beginning of the plan year.
- An individual's **funding target** is the present value of future benefits based on credited service and average pay as of the beginning of the plan year, and an individual's **target normal cost** is the present value of the benefit expected to accrue in the plan year. If multiple decrements are used, the funding target and the target normal cost for an individual is the sum of the component funding targets and target normal costs associated with the various anticipated separation dates.
- This plan provides benefits that are not a function of a participant's accrued benefit or years of service. This benefit is allocated to funding target based on the ratio of the participant's service at

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

the beginning of the plan year to their service at each decrement age and is allocated to target normal cost based on the proportionate benefit attributable to the increase in the participant's service and compensation during the plan year.

- The plan's **target normal cost** is the sum of the individual target normal costs, and the plan's **funding target** is the sum of the individual funding targets for all participants under the plan.

Form 5500 Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	Annual Return/Report of Employee Benefit Plan This form is required to be filed for employee benefit plans under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and sections 6057(b) and 6058(a) of the Internal Revenue Code (the Code). <p style="text-align: center;">▶ Complete all entries in accordance with the instructions to the Form 5500.</p>	OMB Nos. 1210-0110 1210-0089 2018 This Form is Open to Public Inspection
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Part I Annual Report Identification Information	
For calendar plan year 2018 or fiscal plan year beginning <u>01/01/2018</u> and ending <u>12/31/2018</u>	
A This return/report is for:	☐ a multiemployer plan ☐ a multiple-employer plan (Filers checking this box must attach a list of participating employer information in accordance with the form instructions.) ☒ a single-employer plan ☐ a DFE (specify) _____
B This return/report is:	☐ the first return/report ☐ the final return/report ☐ an amended return/report ☐ a short plan year return/report (less than 12 months)
C If the plan is a collectively-bargained plan, check here. ☒	
D Check box if filing under:	☒ Form 5558 ☐ automatic extension ☐ the DFVC program ☐ special extension (enter description)

Part II Basic Plan Information—enter all requested information					
1a Name of plan ALERIS RETIREMENT PLAN FOR BARGAINED EMPLOYEES	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">1b Three-digit plan number (PN) ▶</td> <td style="width: 20%; text-align: center;">003</td> </tr> <tr> <td colspan="2">1c Effective date of plan 05/23/2003</td> </tr> </table>	1b Three-digit plan number (PN) ▶	003	1c Effective date of plan 05/23/2003	
1b Three-digit plan number (PN) ▶	003				
1c Effective date of plan 05/23/2003					
2a Plan sponsor's name (employer, if for a single-employer plan) Mailing address (include room, apt., suite no. and street, or P.O. Box) City or town, state or province, country, and ZIP or foreign postal code (if foreign, see instructions) ALERIS ROLLED PRODUCTS, INC. 25825 SCIENCE PARK DR STE 400 BEACHWOOD OH 44122-7392	<table style="width: 100%; border-collapse: collapse;"> <tr> <td>2b Employer Identification Number (EIN) 27-1539745</td> </tr> <tr> <td>2c Plan Sponsor's telephone number 216-910-3400</td> </tr> <tr> <td>2d Business code (see instructions) 238300</td> </tr> </table>	2b Employer Identification Number (EIN) 27-1539745	2c Plan Sponsor's telephone number 216-910-3400	2d Business code (see instructions) 238300	
2b Employer Identification Number (EIN) 27-1539745					
2c Plan Sponsor's telephone number 216-910-3400					
2d Business code (see instructions) 238300					

Caution: A penalty for the late or incomplete filing of this return/report will be assessed unless reasonable cause is established.

Under penalties of perjury and other penalties set forth in the instructions, I declare that I have examined this return/report, including accompanying schedules, statements and attachments, as well as the electronic version of this return/report, and to the best of my knowledge and belief, it is true, correct, and complete.

SIGN HERE		10.11.19	ELLEN V. MATISKO
	Signature of plan administrator	Date	Enter name of individual signing as plan administrator
SIGN HERE			
	Signature of employer/plan sponsor	Date	Enter name of individual signing as employer or plan sponsor
SIGN HERE			
	Signature of DFE	Date	Enter name of individual signing as DFE

For Paperwork Reduction Act Notice, see the Instructions for Form 5500.

Form 5500 (2018)
v. 171027

3a Plan administrator's name and address ☒ Same as Plan Sponsor	3b Administrator's EIN 3c Administrator's telephone number
4 If the name and/or EIN of the plan sponsor or the plan name has changed since the last return/report filed for this plan, enter the plan sponsor's name, EIN, the plan name and the plan number from the last return/report: a Sponsor's name c Plan Name	4b EIN 4d PN
5 Total number of participants at the beginning of the plan year	5 181
6 Number of participants as of the end of the plan year unless otherwise stated (welfare plans complete only lines 6a(1) , 6a(2) , 6b , 6c , and 6d).	
a(1) Total number of active participants at the beginning of the plan year	6a(1) 37
a(2) Total number of active participants at the end of the plan year	6a(2) 34
b Retired or separated participants receiving benefits.....	6b 80
c Other retired or separated participants entitled to future benefits	6c 54
d Subtotal. Add lines 6a(2) , 6b , and 6c	6d 168
e Deceased participants whose beneficiaries are receiving or are entitled to receive benefits.	6e 14
f Total. Add lines 6d and 6e	6f 182
g Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item)	6g
h Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested	6h 0
7 Enter the total number of employers obligated to contribute to the plan (only multiemployer plans complete this item)	7
8a If the plan provides pension benefits, enter the applicable pension feature codes from the List of Plan Characteristics Codes in the instructions: 1B 1I 3D 3H	
b If the plan provides welfare benefits, enter the applicable welfare feature codes from the List of Plan Characteristics Codes in the instructions:	

9a Plan funding arrangement (check all that apply) (1) ☐ Insurance (2) ☐ Code section 412(e)(3) insurance contracts (3) ☒ Trust (4) ☐ General assets of the sponsor	9b Plan benefit arrangement (check all that apply) (1) ☐ Insurance (2) ☐ Code section 412(e)(3) insurance contracts (3) ☒ Trust (4) ☐ General assets of the sponsor
10 Check all applicable boxes in 10a and 10b to indicate which schedules are attached, and, where indicated, enter the number attached. (See instructions)	
a Pension Schedules (1) ☒ R (Retirement Plan Information) (2) ☐ MB (Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information) - signed by the plan actuary (3) ☒ SB (Single-Employer Defined Benefit Plan Actuarial Information) - signed by the plan actuary	b General Schedules (1) ☒ H (Financial Information) (2) ☐ I (Financial Information – Small Plan) (3) ☐ A (Insurance Information) (4) ☒ C (Service Provider Information) (5) ☒ D (DFE/Participating Plan Information) (6) ☐ G (Financial Transaction Schedules)

Part III Form M-1 Compliance Information (to be completed by welfare benefit plans)

11a If the plan provides welfare benefits, was the plan subject to the Form M-1 filing requirements during the plan year? (See instructions and 29 CFR 2520.101-2.) ☐ Yes ☐ No

If "Yes" is checked, complete lines 11b and 11c.

11b Is the plan currently in compliance with the Form M-1 filing requirements? (See instructions and 29 CFR 2520.101-2.) ☐ Yes ☐ No

11c Enter the Receipt Confirmation Code for the 2018 Form M-1 annual report. If the plan was not required to file the 2018 Form M-1 annual report, enter the Receipt Confirmation Code for the most recent Form M-1 that was required to be filed under the Form M-1 filing requirements. (Failure to enter a valid Receipt Confirmation Code will subject the Form 5500 filing to rejection as incomplete.)

Receipt Confirmation Code _____

Plan Name	Aleris Retirement Plan For Bargained Employees
Plan Sponsor EIN	27-1539745
ERISA Plan No.	003
Plan Year End	12/31/2018

The required attachment noted below is included within the Accountant's Opinion attachment to the Form 5500 Schedule H, Part III, which consists of the entire Audit report issued by the Plan's Independent Qualified Public Accountant (IQPA).

Form/Schedule	Line Item	Description
5500 Schedule H	Line 4j	Schedule of Reportable Transactions

SCHEDULE SB (Form 5500) <small>Department of the Treasury Internal Revenue Service</small> <small>Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation</small>	Single-Employer Defined Benefit Plan Actuarial Information This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6059 of the Internal Revenue Code (the Code). ► File as an attachment to Form 5500 or 5500-SF.	<small>OMB No. 1210-0110</small> 2018 This Form is Open to Public Inspection
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For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

► **Round off amounts to nearest dollar.**

► **Caution:** A penalty of \$1,000 will be assessed for late filing of this report unless reasonable cause is established.

A Name of plan ALERIS RETIREMENT PLAN FOR BARGAINED EMPLOYEES	B Three-digit plan number (PN) ►	003
C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF ALERIS ROLLED PRODUCTS, INC.	D Employer Identification Number (EIN) 27-1539745	
E Type of plan: ☒ Single ☐ Multiple-A ☐ Multiple-B ☐ Other		
F Prior year plan size: ☐ 100 or fewer ☐ 101-500 ☒ More than 500		

Part I Basic Information				
1 Enter the valuation date: Month <u>01</u> Day <u>01</u> Year <u>2018</u>				
2 Assets:				
a Market value.....	2a	4,084,012		
b Actuarial value	2b	3,873,701		
3 Funding target/participant count breakdown				
	(1) Number of participants	(2) Vested Funding Target	(3) Total Funding Target	
a For retired participants and beneficiaries receiving payment	88	1,925,956	1,925,956	
b For terminated vested participants	56	1,017,183	1,017,183	
c For active participants	37	875,224	1,004,806	
d Total	181	3,818,363	3,947,945	
4 If the plan is in at-risk status, check the box and complete lines (a) and (b) ☐				
a Funding target disregarding prescribed at-risk assumptions	4a			
b Funding target reflecting at-risk assumptions, but disregarding transition rule for plans that have been in at-risk status for fewer than five consecutive years and disregarding loading factor	4b			
5 Effective interest rate	5	5.78%		
6 Target normal cost	6	118,640		

Statement by Enrolled Actuary
 To the best of my knowledge, the information supplied in this schedule and accompanying schedules, statements and attachments, if any, is complete and accurate. Each prescribed assumption was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.

SIGN HERE	<u>NICHOLAS FRIES NGCF</u> Signature of actuary	<u>9/24/2019</u> Date
	<u>NICHOLAS FRIES</u> Type or print name of actuary	<u>1707926</u> Most recent enrollment number
	<u>MERCER</u> Firm name	<u>216-830-8031</u> Telephone number (including area code)
	<u>200 PUBLIC SQUARE, SUITE 3760</u> <u>CLEVELAND OH 44114</u> Address of the firm	

If the actuary has not fully reflected any regulation or ruling promulgated under the statute in completing this schedule, check the box and see instructions ☐

Part II Beginning of Year Carryover and Prefunding Balances

	(a) Carryover balance	(b) Prefunding balance
7 Balance at beginning of prior year after applicable adjustments (line 13 from prior year).....	0	0
8 Portion elected for use to offset prior year's funding requirement (line 35 from prior year)	0	0
9 Amount remaining (line 7 minus line 8).....	0	0
10 Interest on line 9 using prior year's actual return of <u>15.21%</u>	0	0
11 Prior year's excess contributions to be added to prefunding balance:		
a Present value of excess contributions (line 38a from prior year).....		448
b(1) Interest on the excess, if any, of line 38a over line 38b from prior year Schedule SB, using prior year's effective interest rate of <u>5.98%</u>		27
b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return.....		0
c Total available at beginning of current plan year to add to prefunding balance.....		475
d Portion of (c) to be added to prefunding balance.....		0
12 Other reductions in balances due to elections or deemed elections.....	0	0
13 Balance at beginning of current year (line 9 + line 10 + line 11d – line 12).....	0	0

Part III	Funding Percentages
----------	---------------------

14	Funding target attainment percentage	14	98.11%
15	Adjusted funding target attainment percentage.....	15	98.11%
16	Prior year's funding percentage for purposes of determining whether carryover/prefunding balances may be used to reduce current year's funding requirement	16	96.83%
17	If the current value of the assets of the plan is less than 70 percent of the funding target, enter such percentage.	17	%

Part IV Contributions and Liquidity Shortfalls

18 Contributions made to the plan for the plan year by employer(s) and employees:

(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees	(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees
04/11/2018	37,000	0			
07/11/2018	37,000	0			
10/11/2018	16,000	0			
01/10/2019	30,000	0			
09/13/2019	19,000	0			
			Totals ►	139,000	

19 Discounted employer contributions – see instructions for small plan with a valuation date after the beginning of the year:

a Contributions allocated toward unpaid minimum required contributions from prior years.....	19a	0
b Contributions made to avoid restrictions adjusted to valuation date	19b	0
c Contributions allocated toward minimum required contribution for current year adjusted to valuation date.....	19c	133,272

20 Quarterly contributions and liquidity shortfalls:

a Did the plan have a "funding shortfall" for the prior year? ☒ Yes ☐ No

b If line 20a is "Yes," were required quarterly installments for the current year made in a timely manner? ☒ Yes ☐ No

C If line 20a is "Yes," see instructions and complete the following table as applicable:

Liquidity shortfall as of end of quarter of this plan year

(1) 1st	(2) 2nd	(3) 3rd	(4) 4th
0	0	0	0

Part V Assumptions Used to Determine Funding Target and Target Normal Cost

21 Discount rate:				
a Segment rates:	1st segment: 3.92 %	2nd segment: 5.52 %	3rd segment: 6.29 %	☐ N/A, full yield curve used
b Applicable month (enter code).....				21b 0
22 Weighted average retirement age				22 63
23 Mortality table(s) (see instructions)	Prior regulation:	☐ Prescribed - combined	☒ Prescribed - separate	☐ Substitute
	Current regulation:	☐ Prescribed - combined	☐ Prescribed - separate	☐ Substitute

Part VI Miscellaneous Items

24 Has a change been made in the non-prescribed actuarial assumptions for the current plan year? If "Yes," see instructions regarding required attachment.	☒ Yes	☐ No
25 Has a method change been made for the current plan year? If "Yes," see instructions regarding required attachment.	☐ Yes	☒ No
26 Is the plan required to provide a Schedule of Active Participants? If "Yes," see instructions regarding required attachment.	☒ Yes	☐ No
27 If the plan is subject to alternative funding rules, enter applicable code and see instructions regarding attachment	27	

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years	28	0
29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a)	29	0
30 Remaining amount of unpaid minimum required contributions (line 28 minus line 29)	30	0

Part VIII Minimum Required Contribution For Current Year

31 Target normal cost and excess assets (see instructions):			
a Target normal cost (line 6)	31a	118,640	
b Excess assets, if applicable, but not greater than line 31a	31b	0	
32 Amortization installments:	Outstanding Balance	Installment	
a Net shortfall amortization installment	74,244	14,500	
b Waiver amortization installment	0	0	
33 If a waiver has been approved for this plan year, enter the date of the ruling letter granting the approval (Month _____ Day _____ Year _____) and the waived amount	33		
34 Total funding requirement before reflecting carryover/prefunding balances (lines 31a - 31b + 32a + 32b - 33)....	34	133,140	
	Carryover balance	Prefunding balance	Total balance
35 Balances elected for use to offset funding requirement	0	0	0
36 Additional cash requirement (line 34 minus line 35)	36	133,140	
37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c)	37	133,272	
38 Present value of excess contributions for current year (see instructions)			
a Total (excess, if any, of line 37 over line 36)	38a	132	
b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances	38b	0	
39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37)	39	0	
40 Unpaid minimum required contributions for all years	40	0	

Part IX Pension Funding Relief Under Pension Relief Act of 2010 (See Instructions)

41 If an election was made to use PRA 2010 funding relief for this plan:				
a Schedule elected	☐ 2 plus 7 years	☐ 15 years		
b Eligible plan year(s) for which the election in line 41a was made	☐ 2008	☐ 2009	☐ 2010	☐ 2011

Schedule SB, line 22 — Description of Weighted Average Retirement Age

Each employee is assumed to retire in accordance with the table of retirement rates. The proportion of employees expected to retire at each potential retirement age is shown below. The average retirement age is 63.

Richmond members with less than 30 years of vesting service				
(A)	(B)	(C)	(D)	(E)
Retirement age	Retirement Percent	Lx	Number of employees expected to retire (B) x (C)	(A) x (D)
55	0.00%	100,000	0	0
56	0.00%	100,000	0	0
57	0.00%	100,000	0	0
58	0.00%	100,000	0	0
59	0.00%	100,000	0	0
60	15.00%	100,000	15,000	900,000
61	10.00%	85,000	8,500	518,500
62	40.00%	76,500	30,600	1,897,200
63	10.00%	45,900	4,590	289,170
64	10.00%	41,310	4,131	264,384
65	100.00%	37,179	37,179	2,416,635
Total			100,000	6,285,889
Average				62.86

Schedule SB, line 22 — Description of Weighted Average Retirement Age

Ashtville members with less than 30 years of vesting service				
(A)	(B)	(C)	(D)	(E)
Retirement age	Retirement Percent	Lx	Number of employees expected to retire (B) x (C)	(A) x (D)
55	0.00%	100,000	0	0
56	0.00%	100,000	0	0
57	0.00%	100,000	0	0
58	0.00%	100,000	0	0
59	0.00%	100,000	0	0
60	15.00%	100,000	15,000	900,000
61	10.00%	85,000	8,500	518,500
62	25.00%	76,500	19,125	1,185,750
63	10.00%	57,375	5,738	361,494
64	10.00%	51,637	5,164	330,496
65	100.00%	46,473	46,473	3,020,745
Total			100,000	6,316,985
Average				63.17

Schedule SB, line 22 — Description of Weighted Average Retirement Age

Employees with more than 30 years of vesting service				
(A)	(B)	(C)	(D)	(E)
Retirement age	Retirement Percent	Lx	Number of employees expected to retire (B) x (C)	(A) x (D)
55	5.00%	100,000	5,000	275,000
56	5.00%	95,000	4,750	266,000
57	5.00%	90,250	4,513	257,241
58	5.00%	85,737	4,287	248,646
59	5.00%	81,450	4,073	240,307
60	10.00%	77,377	7,738	464,280
61	10.00%	69,639	6,964	424,804
62	40.00%	62,675	25,070	1,554,340
63	10.00%	37,605	3,761	236,943
64	10.00%	33,844	3,384	216,576
65	100.00%	30,460	30,460	1,979,900
Total			100,000	6,164,037
Average				61.64

Schedule SB, line 22 — Description of Weighted Average Retirement Age

Note: Column (D) is the product of columns (B) and (C). Column (E) is the product of columns (A) and (D). The average retirement age for each plan is the total from column (E) divided by the total from column (D). The final average retirement age is a weighted average of the average ages from the individual exhibits.

Group	Number of Employees	Average Retirement Age	Number of Employees x Average Retirement Age
Bellwood	5	62.86	314
Ashville	19	63.17	1,200
Employees >= 30 yrs svc	13	61.64	801
Total	37		2,315
		Average Retirement Age:	62.57

Schedule SB, line 24 — Change in Actuarial Assumptions

- The expense component of normal cost decreased from \$125,104 to \$116,806 to reflect our expectations for the current plan year.
- The expected return on assets assumption was updated from 7.75% in 2017 to 7.10% in 2018.

Schedule SB, line 26 — Schedule of Active Participant Data

ATTAINED AGE	YEARS OF CREDITED SERVICE										TOTAL
	UNDER 1	1–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40 & UP	
Under 25											
25–29											
30–34											
35–39											
40–44			3	2							5
45–49			2								2
50–54			4		2	2					8
55–59			1	4		2					7
60–64			1	3			1	2	1		8
65–69			2			2		2	1		7
70 & up											
Total			13	9	2	6	1	4	2		37

In each cell, the top number is the count of active participants for each age/service combination. Credit service was frozen effective January 1, 2008 for all participants with the exception of Ashville union participants who were frozen effective February 1, 2008.

Schedule SB, line 32 — Schedule of Amortization Bases

The total shortfall amortization charge is the sum of the individual shortfall amortization installment for each plan year covered under PPA. Although an individual shortfall amortization installment can be negative, the combined shortfall amortization charge cannot be less than \$0.

SHORTFALL BASES					
YEAR ESTABLISHED		OUTSTANDING BALANCE	YEARS REMAINING		2018 INSTALLMENT
2017	\$	108,677	6	\$	20,121
2018		(34,433)	7		(5,621)
Total	\$	74,244		\$	14,500

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

ACTUARIAL ASSUMPTIONS

DISCOUNT RATE SPONSOR ELECTIONS

• Segment rates or full yield curve	Segment		
• Look-back months	0		
	<u>Stabilized</u>	<u>Nonstabilized</u>	
• First 5 years	3.92%	1.81%	
• Next 15 years	5.52%	3.68%	
• Over 20 years	6.29%	4.53%	
Mortality sponsor elections			
• Healthy participants	Section 430(h)(3) prescribed separate static annuitant and nonannuitant mortality tables in accordance with the regulations in effect prior to the 2018 plan year. These tables are based on the RP-2000 mortality tables projected with mortality improvement to the valuation year plus 7 and 15 years based on Scale AA.		
• Pre-1995 disabilities			
• Post-1994 disabilities			
Other economic assumptions			
• Expected investment return	7.10% for year 2018 and 7.75% for years 2016 and 2017.		
	(limited to 3rd segment rate)		
• Expenses	\$116,806 added to current year normal cost		

RATIONALE FOR ECONOMIC ASSUMPTIONS

- **Discount Rate** – As prescribed by IRS.
- **Expected investment return** – The expected rate of return on plan assets is based on a blend of the hypothetical past performance of the plan's target asset mix, adjusted for current market conditions, and the median simulated investment return using capital market assumptions published in Mercer Investment Consulting's Capital Markets Outlook for the plan's target asset mix. The expected return on assets assumption is net of an adjustment for investment expenses assumed to be paid from plan assets.
- **Expenses** – Expenses are based on year-by-year experience for actual administrative expenses paid from plan assets and adjusted for the difference in expected PBGC premiums.

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

DEMOGRAPHIC ASSUMPTIONS

<ul style="list-style-type: none">• Withdrawal	See table of sample rates.																																																						
<ul style="list-style-type: none">• Disability incidence	See table of sample rates that based on the 1985 Pension Disability Class 3 tables.																																																						
<ul style="list-style-type: none">• Retirement age	<table><tr><th rowspan="2">Attained age</th><th colspan="3">Percentage</th></tr><tr><th>Less than 30 years of service for Ashville location</th><th>Less than 30 years of service for Richmond location</th><th>More than 30 years of service</th></tr><tr><td>55</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>56</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>57</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>58</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>59</td><td>0%</td><td>0%</td><td>5%</td></tr><tr><td>60</td><td>15%</td><td>15%</td><td>10%</td></tr><tr><td>61</td><td>10%</td><td>10%</td><td>10%</td></tr><tr><td>62</td><td>25%</td><td>40%</td><td>40%</td></tr><tr><td>63</td><td>10%</td><td>10%</td><td>10%</td></tr><tr><td>64</td><td>10%</td><td>10%</td><td>10%</td></tr><tr><td>65</td><td>100%</td><td>100%</td><td>100%</td></tr></table>				Attained age	Percentage			Less than 30 years of service for Ashville location	Less than 30 years of service for Richmond location	More than 30 years of service	55	0%	0%	5%	56	0%	0%	5%	57	0%	0%	5%	58	0%	0%	5%	59	0%	0%	5%	60	15%	15%	10%	61	10%	10%	10%	62	25%	40%	40%	63	10%	10%	10%	64	10%	10%	10%	65	100%	100%	100%
Attained age	Percentage																																																						
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62	25%	40%	40%																																																				
63	10%	10%	10%																																																				
64	10%	10%	10%																																																				
65	100%	100%	100%																																																				

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

• Benefit commencement age for		
– Future and current vested deferred	<u>Richmond participants</u> 62 with 10 years of service or 65. <u>Ashville participants</u> 65	
• Spouse assumptions	<u>Male participants</u>	<u>Female participants</u>
– Percentage married	75%	75%
– Spouse age difference	3 years younger	3 years older
Form of payment	<u>Life Annuity</u>	<u>50% J&S w/ PopUp</u>
• Active retirements	25%	75%
• Future vested deferred	25%	75%
• Future disabilities	25%	75%
• Future deaths	0%	100% (no pop-up)
• Current vested deferred	25%	75%
Unpredictable contingent event assumptions	Likelihood of event is de minimis.	

*Schedule SB, Part V — Statement of Actuarial Assumptions/Methods***Table of Sample Rates**

ATTAINED AGE	PERCENTAGE		
	WITHDRAWAL	DISABILITY INCIDENCE	
		MALE	FEMALE
20	4.86%	0.15%	0.09%
25	3.90%	0.22%	0.15%
30	3.10%	0.31%	0.25%
35	2.42%	0.43%	0.39%
40	1.88%	0.60%	0.55%
45	1.46%	0.83%	0.78%
50	1.12%	1.22%	1.20%
55	0.84%	2.12%	1.96%
60	0.60%	3.24%	2.33%
65	0.38%	4.37%	2.72%

RATIONALE FOR DEMOGRAPHIC ASSUMPTIONS

- **Mortality** – Mortality table prescribed by the IRS. IRS released the new prescribed funding mortality tables to determine minimum contributions for 2018 plan year and onwards. The regulation permits the use of old methodology funding tables (except lump sum tables) until the 2019 plan year. This election does not require IRS approval. The Plan Sponsor chose to use the PPA tables based on old methodology for the 2018 plan year.
- **Withdrawal** – The termination table is based on the Society of Actuaries 2003 small plan, age-based turnover table with adjustments. Annual review of the experience has shown that this table produced a reasonable approximation of the rates of termination experienced by the plan.
- **Retirement age** – Retirement rates have been based on the actuary's experience with similar plans, taking into consideration retirement subsidies the plan offers at various ages and the age social insurance programs are first available. Annual review of the plan experience has shown that these rates provide similar results to the actual rates of retirement experienced under the plan.

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

ACTUARIAL METHODS

Asset Methods

The asset valuation method is an average of the adjusted market value for each year during the last two years preceding the valuation date. The adjusted market value is the market value at each determination date adjusted to the valuation date based on actual cash flows and expected interest at the lesser of the expected rate of return and the third segment rate. This amount is adjusted to be no greater than 110% and no less than 90% of the fair market value, as defined in IRC Section 430.

A characteristic of this asset method is that, over time, it is slightly more likely to produce an actuarial value of assets that is less than the market value of assets than an actuarial value that is greater than the market value.

Participant Methods

Participants or former participants are included or excluded from the valuation as described below:

- **Participants included:** The plan sponsor provides us with data on all employees as of the valuation date.
- **Participants excluded:** No actuarial liability is included for nonvested participants who terminated prior to the valuation date. For this purpose, participants with a break in service on the valuation date are treated as terminated participants.
- **Insurance contracts:** The plan does not have any insurance contracts.

Minimum Funding Methods

The funding target for minimum funding calculations is computed using the traditional unit credit method of funding. The objective under this method is to fund each participant's benefits under the plan as they accrue. Thus, the total pension to which each participant is expected to become entitled at retirement is broken down into units, each associated with a year of past or future credited service.

A detailed description of the calculation follows:

- The plan's valuation date is the beginning of the plan year.
- An individual's **funding target** is the present value of future benefits based on credited service and average pay as of the beginning of the plan year, and an individual's **target normal cost** is the present value of the benefit expected to accrue in the plan year. If multiple decrements are used, the funding target and the target normal cost for an individual is the sum of the component funding targets and target normal costs associated with the various anticipated separation dates.
- This plan provides benefits that are not a function of a participant's accrued benefit or years of service. This benefit is allocated to funding target based on the ratio of the participant's service at

Schedule SB, Part V — Statement of Actuarial Assumptions/Methods

the beginning of the plan year to their service at each decrement age and is allocated to target normal cost based on the proportionate benefit attributable to the increase in the participant's service and compensation during the plan year.

- The plan's **target normal cost** is the sum of the individual target normal costs, and the plan's **funding target** is the sum of the individual funding targets for all participants under the plan.

Schedule SB, Part V — Summary of Plan Provisions

SUMMARY OF MAJOR PLAN PROVISIONS

Effective date and plan year	Original plan: May 23, 2003 Restated plan: January 1, 2015 Plan year: January 1 – December 31
Status of the plan	Credited Service was frozen effective January 1, 2008 for all participants with the exception of Ashville union participants who were frozen effective February 1, 2008. New hires after September 1, 2001 for Richmond and February 1, 2001 for Ashville are not eligible to participate.
Significant events that occurred during the year	None
DEFINITIONS	
• Covered employees	An individual employed by the Employer or any other employer require to be aggregated with the Employer
• Participation	Bargaining employees who have attained age 21 with four calendar quarters of service at the Richmond Plant 44 location whose date of employment occurred prior to September 1, 2001 or a bargaining employee of the Ashville Ohio Plant Location whose date of employment occurred prior to February 1, 2001.
• Employee contributions	None
• Vesting service	All service is measured in full and fractional years on the basis that 365 days equals one year from the employee's hire date (reduced by any period of Severance).
• Credited service	All service measured from the date of employment, expressed as the total number of calendar quarters in each of which the employee receives wages, disability benefits or workman's compensation. Credited Service was frozen effective January 1, 2008 for all participants with the exception of Ashville union participants who were frozen effective February 1, 2008.
• Accrued benefit	On any date, the amount of monthly retirement benefit accrued by an active participant.

Schedule SB, Part V — Summary of Plan Provisions

NORMAL RETIREMENT																									
<ul style="list-style-type: none">Eligibility	<p>The first day of the month following or coincident with the earliest of:</p> <ul style="list-style-type: none">The later of age 65 or 5 years of Credited Service30 years of Vesting Service																								
<ul style="list-style-type: none">Benefit	<p><u>Richmond Location</u></p> <p>The sum of the pension factors from the appropriate wage grades times the service earned while in the wage grade, less the amount payable from any prior plan. Participants who retire between August 1, 2004 and August 1, 2006 are eligible for all the benefit increases in the bargaining period.</p> <table><tr><th>Pre-August 1, 2001 wage grade</th><th>Service prior to August 1, 2001</th><th>Service between August 1, 2001 and August 1, 2004</th></tr><tr><td>1 to 4</td><td>\$33.25</td><td>\$39.25</td></tr><tr><td>5 to 8</td><td>\$34.55</td><td>\$40.55</td></tr><tr><td>9 to 12</td><td>\$35.90</td><td>\$41.90</td></tr><tr><td>13 to 16</td><td>\$37.25</td><td>\$43.25</td></tr><tr><td>17 to 20</td><td>\$38.55</td><td>\$44.55</td></tr><tr><td>21 to 24</td><td>\$39.90</td><td>\$45.90</td></tr><tr><td>25 +</td><td>\$41.25</td><td>\$47.25</td></tr></table>	Pre-August 1, 2001 wage grade	Service prior to August 1, 2001	Service between August 1, 2001 and August 1, 2004	1 to 4	\$33.25	\$39.25	5 to 8	\$34.55	\$40.55	9 to 12	\$35.90	\$41.90	13 to 16	\$37.25	\$43.25	17 to 20	\$38.55	\$44.55	21 to 24	\$39.90	\$45.90	25 +	\$41.25	\$47.25
Pre-August 1, 2001 wage grade	Service prior to August 1, 2001	Service between August 1, 2001 and August 1, 2004																							
1 to 4	\$33.25	\$39.25																							
5 to 8	\$34.55	\$40.55																							
9 to 12	\$35.90	\$41.90																							
13 to 16	\$37.25	\$43.25																							
17 to 20	\$38.55	\$44.55																							
21 to 24	\$39.90	\$45.90																							
25 +	\$41.25	\$47.25																							

Schedule SB, Part V — Summary of Plan Provisions

	Service on and after August 1, 2004		
Wage Grade	Effective August 1, 2004	Effective August 1, 2005	Effective August 1, 2006
1 to 4	\$41.25	\$43.25	\$45.25
5 to 8	\$42.55	\$44.55	\$46.55
9 to 12	\$43.90	\$45.90	\$47.90
13 to 16	\$45.25	\$47.25	\$49.25
17 to 20	\$46.55	\$48.55	\$50.55
21 to 24	\$47.90	\$49.90	\$51.90
25 +	\$49.25	\$51.25	\$53.25

Ashville Location

Pension factor determined by employment date times service, less the amount payable from any prior plan. Participants who retire between May 23, 2003 and February 1, 2006 are eligible for all the benefit increases in the bargaining period.

Service	Employment Prior to March 1, 1984	Employment on and after March 1, 1984
Prior to February 1, 1998	\$21.00	\$18.50
On and after February 1, 1998:	\$24.00	\$21.50
Effective February 1, 1999	\$28.00	\$25.50
Effective February 1, 2000	\$32.00	\$29.50
Effective February 1, 2001	\$35.00	\$32.50
Effective February 1, 2002	\$38.00	\$35.50
Effective February 1, 2003	\$40.00	\$37.50
Effective February 1, 2004	\$42.00	\$39.50
Effective February 1, 2005	\$43.00	\$40.50

Schedule SB, Part V — Summary of Plan Provisions

	<p>If the participant is an inactive participant at retirement, the accrued benefit paid to a married participant receiving a 50% joint and survivor annuity will be reduced by 50%.</p> <p>If the participant is an inactive participant at retirement, the accrued benefit paid to a married participant receiving a 50% joint and survivor annuity will be reduced:</p>																																											
	<table><tr><th colspan="2">Years that spouse is younger</th><th colspan="2">Years that spouse is older</th></tr><tr><th></th><th>Reduction</th><th></th><th>Reduction</th></tr><tr><td>20 or more</td><td>23%</td><td>0 to 1</td><td>13%</td></tr><tr><td>17 to 19</td><td>22%</td><td>2 to 4</td><td>11%</td></tr><tr><td>14 to 16</td><td>21%</td><td>5 to 7</td><td>10%</td></tr><tr><td>11 to 13</td><td>19%</td><td>8 to 10</td><td>8%</td></tr><tr><td>8 to 10</td><td>18%</td><td>11 to 13</td><td>7%</td></tr><tr><td>5 to 7</td><td>16%</td><td>14 to 16</td><td>5%</td></tr><tr><td>2 to 4</td><td>15%</td><td>17 to 19</td><td>4%</td></tr><tr><td>0 to 1</td><td>13%</td><td>20 or more</td><td>3%</td></tr></table> <p>Pension benefits need to be reduced by the benefit payable under the Reynolds Metals Company Pension Plan prior to March 17, 1997 and the benefit payable under the Owens Corning merged retirement plan on May 22, 2003.</p>				Years that spouse is younger		Years that spouse is older			Reduction		Reduction	20 or more	23%	0 to 1	13%	17 to 19	22%	2 to 4	11%	14 to 16	21%	5 to 7	10%	11 to 13	19%	8 to 10	8%	8 to 10	18%	11 to 13	7%	5 to 7	16%	14 to 16	5%	2 to 4	15%	17 to 19	4%	0 to 1	13%	20 or more	3%
Years that spouse is younger		Years that spouse is older																																										
	Reduction		Reduction																																									
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11 to 13	19%	8 to 10	8%																																									
8 to 10	18%	11 to 13	7%																																									
5 to 7	16%	14 to 16	5%																																									
2 to 4	15%	17 to 19	4%																																									
0 to 1	13%	20 or more	3%																																									

Schedule SB, Part V — Summary of Plan Provisions

SUPPLEMENTAL RETIREMENT BENEFIT																	
<ul style="list-style-type: none"> Eligibility 	<p>Richmond employees who have attained age 55 with 30 years of service.</p> <p><u>Form:</u> Monthly annuity payable until age 62.</p>																
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<ul style="list-style-type: none"> Eligibility 	<p>The first day of any month following attainment of age 60 and completion of 10 years of Vested Service.</p>																
<ul style="list-style-type: none"> Benefit 	<p><u>Richmond Location</u></p> <p>Accrued benefit on early retirement date reduced 6% each year in which the early retirement date precedes age 62. No reduction applies after attaining age 62.</p> <p><u>Ashville Location</u></p> <p>Accrued benefit on early retirement date reduced 6% each year in which the early retirement date precedes age 65. The special retirement benefit will not become payable for an inactive participant until the month following age 65 or 30 years of employment.</p>																

Schedule SB, Part V — Summary of Plan Provisions

SPECIAL EARLY RETIREMENT	
<ul style="list-style-type: none"> Eligibility 	<p><u>1. Richmond:</u> Employees who have been absent from service for 2 years due to a layoff, permanent shut-down, sickness or accident and attained age 55 with 10 years of service and age plus service equals 70 or 10 years of service and age plus service equals 80.</p> <p><u>2. Richmond:</u> Employees who have been absent from service for 2 years due to a layoff, permanent shut-down, sickness or accident and have twenty years of service and age plus service equals 65.</p> <p><u>3. Richmond:</u> Employees who have been absent from service for 3 years due to a layoff, permanent shut-down, sickness or accident and have attained age 55 with 10 years of service.</p> <p><u>4. Ashville:</u> Employees who have been absent from service for 2 years due to a layoff, permanent shut-down, sickness, or accident and have attained age 55 and 10 years of service.</p> <p><u>5. Ashville:</u> Employees who have been absent from service due to a layoff, permanent shut-down, sickness, or accident and attained age 55 with 10 years of service and age plus service equals 75 or 10 years of service and age plus service equals 80.</p>
<ul style="list-style-type: none"> Benefit 	<p><u>1. Richmond:</u> Accrued benefit at retirement plus the Special Retirement Benefit. A supplemental retirement benefit of \$400 per month will also be payable until attaining age 62.</p> <p><u>2. Richmond:</u> Accrued benefit at retirement plus the Special Retirement Benefit. A supplemental retirement benefit of \$400 per month, reduced by ½ of any earned income in excess of \$5500, will also be payable until attaining age 62.</p> <p><u>3. Richmond:</u> Accrued benefit at retirement plus the Special Retirement Benefit.</p> <p><u>4. Ashville:</u> Accrued benefit at retirement plus the Special Retirement Benefit.</p> <p><u>5. Ashville:</u> Accrued benefit at retirement plus the Special Retirement Benefit. A supplemental retirement benefit of \$100 per month will also be payable until attaining age 65 or receiving social security disability benefits.</p>
LATE RETIREMENT	
<ul style="list-style-type: none"> Eligibility 	<p>Retirement after reaching normal retirement eligibility.</p>

Schedule SB, Part V — Summary of Plan Provisions

• Benefit	Greater of accrued benefit on normal retirement date actuarially increased to late retirement date or accrued benefit on late retirement date.
DEFERRED VESTED	
• Eligibility	5 years of service or age 65.
• Benefit	The participant's accrued benefit.
DISABILITY	
• Eligibility	Completion of 10 years of Credited Service and determination that participant is totally and permanently disabled.
• Benefit	<p>Accrued benefit on date of disability.</p> <p><u>Richmond Location</u></p> <p>If the participant is less than attained age 62, accrued benefit on the date of disability (minimum \$400) plus a supplemental benefit of \$400 per month payable until attaining age 62 or Social Security Disability payments start.</p> <p><u>Ashville Location</u></p> <p>If the participant is not eligible for Social Security Disability payments, accrued benefit on the date of disability (minimum \$100) plus a supplemental benefit of \$100 per month payable until attaining age 62 or Social Security Disability payments start.</p>
PRE-RETIREMENT DEATH	
• Eligibility	Partially or fully vested.
• Benefit if active	<p>Monthly annuity payable to spouse equal to 50% of the accrued benefit.</p> <p>If the participant was at the Richmond Location and had attained age 55 with 30 years of service at the date of death, the spouse will also receive 50% of the Supplemental Retirement Benefit, payable until the participant would have attained age 62.</p>
• Benefit if inactive	Monthly annuity payable to spouse, deferred to attained age 60, equal to the amount that would have been paid had the participant terminated employment on the date of death and survived to his/her age 60, retired with a qualified joint and 50% survivor annuity in effect, then died the next day.

Schedule SB, Part V — Summary of Plan Provisions

FORM OF BENEFITS																																					
<ul style="list-style-type: none">Automatic form for unmarried participants	Life annuity.																																				
<ul style="list-style-type: none">Automatic form for married participants	50% joint and survivor.																																				
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<ul style="list-style-type: none">Optional form conversion factors	<p>The 50% joint and survivor with pop-up for active participants is equal to 95% of the life annuity. The 50% joint and survivor for inactive participants is based on the following factors:</p> <table><thead><tr><th>Years that spouse is younger</th><th>Reduction</th><th>Years that spouse is older</th><th>Reduction</th></tr></thead><tbody><tr><td>20 or more</td><td>23%</td><td>0 to 1</td><td>13%</td></tr><tr><td>17 to 19</td><td>22%</td><td>2 to 4</td><td>11%</td></tr><tr><td>14 to 16</td><td>21%</td><td>5 to 7</td><td>10%</td></tr><tr><td>11 to 13</td><td>19%</td><td>8 to 10</td><td>8%</td></tr><tr><td>8 to 10</td><td>18%</td><td>11 to 13</td><td>7%</td></tr><tr><td>5 to 7</td><td>16%</td><td>14 to 16</td><td>5%</td></tr><tr><td>2 to 4</td><td>15%</td><td>17 to 19</td><td>4%</td></tr><tr><td>0 to 1</td><td>13%</td><td>20 or more</td><td>3%</td></tr></tbody></table> <p>The other optional forms use Applicable Interest rate and Mortality found in Code Section 417(e)(3).</p>	Years that spouse is younger	Reduction	Years that spouse is older	Reduction	20 or more	23%	0 to 1	13%	17 to 19	22%	2 to 4	11%	14 to 16	21%	5 to 7	10%	11 to 13	19%	8 to 10	8%	8 to 10	18%	11 to 13	7%	5 to 7	16%	14 to 16	5%	2 to 4	15%	17 to 19	4%	0 to 1	13%	20 or more	3%
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MISCELLANEOUS																																					
<ul style="list-style-type: none">Maximum benefits	Annual benefits may not exceed the limits in IRC Section 415. This limit is indexed annually. For 2018, the limit is \$220,000.																																				
<ul style="list-style-type: none">Administration	Administered by the Benefits Committee																																				
<ul style="list-style-type: none">Funding medium	Trust																																				
<ul style="list-style-type: none">Benefits not included in valuation	None																																				

*Schedule SB, Part V — Summary of Plan Provisions***Benefits Included or Excluded**

Unless noted below, all benefits provided by the plan are included in this valuation:

- **Plan amendments excluded:** Amendments adopted after the valuation date or effective after the current plan year are excluded from the valuation.
- **Late retirement increases:**
 - *Active participants:* The plan provides benefit suspension notices to participants who work beyond normal retirement; therefore, late retirement actuarial increases only apply to participants who defer retirement beyond age 70½.
 - *Deferred vested participants:* Current deferred vested participants over normal retirement age are not valued including the late retirement actuarial increase.
- **Internal Revenue Code limitations:** The limitations of Internal Revenue Code Section 415(b) and 401(a)(17) have been incorporated into our calculations.
- **IRC Section 416 rules for top-heavy plans:** We did not test whether this plan is top-heavy (when the present value of benefits for key employees equals or exceeds 60 percent of the present value for all participants). However, we expect that the plan is not top-heavy due to the large number of rank-and-file participants; therefore, the funding target and target normal cost do not reflect any liability for top-heavy benefit accruals.
- **IRC Section 436 benefit restrictions:**
 - *Unpredictable contingent event benefits:* This valuation excludes restricted contingent event benefits, because the likelihood of an event is de minimis.
 - › Special Retirement Benefits
 - *Prohibited payments:* Limitations on prohibited benefits (if any) are reflected for annuity starting dates before the valuation date but are ignored for annuity starting dates on or after the valuation date.
 - *Benefit accruals:* The plan's funding target does not reflect any limitation on benefit accruals. The target normal cost does not reflect any limitation on benefit accruals.

PLAN PROVISION CHANGES SINCE PRIOR VALUATION

Maximum benefit amounts under IRS rules were updated from \$215,000 in 2017 to \$220,000 in 2018.

Schedule SB, line 22 — Description of Weighted Average Retirement Age

Each employee is assumed to retire in accordance with the table of retirement rates. The proportion of employees expected to retire at each potential retirement age is shown below. The average retirement age is 63.

Richmond members with less than 30 years of vesting service				
(A)	(B)	(C)	(D)	(E)
Retirement age	Retirement Percent	Lx	Number of employees expected to retire (B) x (C)	(A) x (D)
55	0.00%	100,000	0	0
56	0.00%	100,000	0	0
57	0.00%	100,000	0	0
58	0.00%	100,000	0	0
59	0.00%	100,000	0	0
60	15.00%	100,000	15,000	900,000
61	10.00%	85,000	8,500	518,500
62	40.00%	76,500	30,600	1,897,200
63	10.00%	45,900	4,590	289,170
64	10.00%	41,310	4,131	264,384
65	100.00%	37,179	37,179	2,416,635
Total			100,000	6,285,889
Average				62.86

Schedule SB, line 22 — Description of Weighted Average Retirement Age

Ashtville members with less than 30 years of vesting service				
(A)	(B)	(C)	(D)	(E)
Retirement age	Retirement Percent	Lx	Number of employees expected to retire (B) x (C)	(A) x (D)
55	0.00%	100,000	0	0
56	0.00%	100,000	0	0
57	0.00%	100,000	0	0
58	0.00%	100,000	0	0
59	0.00%	100,000	0	0
60	15.00%	100,000	15,000	900,000
61	10.00%	85,000	8,500	518,500
62	25.00%	76,500	19,125	1,185,750
63	10.00%	57,375	5,738	361,494
64	10.00%	51,637	5,164	330,496
65	100.00%	46,473	46,473	3,020,745
Total			100,000	6,316,985
Average				63.17

Schedule SB, line 22 — Description of Weighted Average Retirement Age

Employees with more than 30 years of vesting service				
(A)	(B)	(C)	(D)	(E)
Retirement age	Retirement Percent	Lx	Number of employees expected to retire (B) x (C)	(A) x (D)
55	5.00%	100,000	5,000	275,000
56	5.00%	95,000	4,750	266,000
57	5.00%	90,250	4,513	257,241
58	5.00%	85,737	4,287	248,646
59	5.00%	81,450	4,073	240,307
60	10.00%	77,377	7,738	464,280
61	10.00%	69,639	6,964	424,804
62	40.00%	62,675	25,070	1,554,340
63	10.00%	37,605	3,761	236,943
64	10.00%	33,844	3,384	216,576
65	100.00%	30,460	30,460	1,979,900
Total			100,000	6,164,037
Average				61.64

Schedule SB, line 22 — Description of Weighted Average Retirement Age

Note: Column (D) is the product of columns (B) and (C). Column (E) is the product of columns (A) and (D). The average retirement age for each plan is the total from column (E) divided by the total from column (D). The final average retirement age is a weighted average of the average ages from the individual exhibits.

Group	Number of Employees	Average Retirement Age	Number of Employees x Average Retirement Age
Bellwood	5	62.86	314
Ashville	19	63.17	1,200
Employees >= 30 yrs svc	13	61.64	801
Total	37		2,315
		Average Retirement Age:	62.57

Schedule SB, Part V — Summary of Plan Provisions

SUMMARY OF MAJOR PLAN PROVISIONS

Effective date and plan year	Original plan: May 23, 2003 Restated plan: January 1, 2015 Plan year: January 1 – December 31
Status of the plan	Credited Service was frozen effective January 1, 2008 for all participants with the exception of Ashville union participants who were frozen effective February 1, 2008. New hires after September 1, 2001 for Richmond and February 1, 2001 for Ashville are not eligible to participate.
Significant events that occurred during the year	None
DEFINITIONS	
• Covered employees	An individual employed by the Employer or any other employer require to be aggregated with the Employer
• Participation	Bargaining employees who have attained age 21 with four calendar quarters of service at the Richmond Plant 44 location whose date of employment occurred prior to September 1, 2001 or a bargaining employee of the Ashville Ohio Plant Location whose date of employment occurred prior to February 1, 2001.
• Employee contributions	None
• Vesting service	All service is measured in full and fractional years on the basis that 365 days equals one year from the employee's hire date (reduced by any period of Severance).
• Credited service	All service measured from the date of employment, expressed as the total number of calendar quarters in each of which the employee receives wages, disability benefits or workman's compensation. Credited Service was frozen effective January 1, 2008 for all participants with the exception of Ashville union participants who were frozen effective February 1, 2008.
• Accrued benefit	On any date, the amount of monthly retirement benefit accrued by an active participant.

Schedule SB, Part V — Summary of Plan Provisions

NORMAL RETIREMENT																									
<ul style="list-style-type: none">Eligibility	<p>The first day of the month following or coincident with the earliest of:</p> <ul style="list-style-type: none">The later of age 65 or 5 years of Credited Service30 years of Vesting Service																								
<ul style="list-style-type: none">Benefit	<p><u>Richmond Location</u></p> <p>The sum of the pension factors from the appropriate wage grades times the service earned while in the wage grade, less the amount payable from any prior plan. Participants who retire between August 1, 2004 and August 1, 2006 are eligible for all the benefit increases in the bargaining period.</p> <table><tr><th>Pre-August 1, 2001 wage grade</th><th>Service prior to August 1, 2001</th><th>Service between August 1, 2001 and August 1, 2004</th></tr><tr><td>1 to 4</td><td>\$33.25</td><td>\$39.25</td></tr><tr><td>5 to 8</td><td>\$34.55</td><td>\$40.55</td></tr><tr><td>9 to 12</td><td>\$35.90</td><td>\$41.90</td></tr><tr><td>13 to 16</td><td>\$37.25</td><td>\$43.25</td></tr><tr><td>17 to 20</td><td>\$38.55</td><td>\$44.55</td></tr><tr><td>21 to 24</td><td>\$39.90</td><td>\$45.90</td></tr><tr><td>25 +</td><td>\$41.25</td><td>\$47.25</td></tr></table>	Pre-August 1, 2001 wage grade	Service prior to August 1, 2001	Service between August 1, 2001 and August 1, 2004	1 to 4	\$33.25	\$39.25	5 to 8	\$34.55	\$40.55	9 to 12	\$35.90	\$41.90	13 to 16	\$37.25	\$43.25	17 to 20	\$38.55	\$44.55	21 to 24	\$39.90	\$45.90	25 +	\$41.25	\$47.25
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Schedule SB, Part V — Summary of Plan Provisions

	Service on and after August 1, 2004		
Wage Grade	Effective August 1, 2004	Effective August 1, 2005	Effective August 1, 2006
1 to 4	\$41.25	\$43.25	\$45.25
5 to 8	\$42.55	\$44.55	\$46.55
9 to 12	\$43.90	\$45.90	\$47.90
13 to 16	\$45.25	\$47.25	\$49.25
17 to 20	\$46.55	\$48.55	\$50.55
21 to 24	\$47.90	\$49.90	\$51.90
25 +	\$49.25	\$51.25	\$53.25

Ashville Location

Pension factor determined by employment date times service, less the amount payable from any prior plan. Participants who retire between May 23, 2003 and February 1, 2006 are eligible for all the benefit increases in the bargaining period.

Service	Employment Prior to March 1, 1984	Employment on and after March 1, 1984
Prior to February 1, 1998	\$21.00	\$18.50
On and after February 1, 1998:	\$24.00	\$21.50
Effective February 1, 1999	\$28.00	\$25.50
Effective February 1, 2000	\$32.00	\$29.50
Effective February 1, 2001	\$35.00	\$32.50
Effective February 1, 2002	\$38.00	\$35.50
Effective February 1, 2003	\$40.00	\$37.50
Effective February 1, 2004	\$42.00	\$39.50
Effective February 1, 2005	\$43.00	\$40.50

Schedule SB, Part V — Summary of Plan Provisions

	<p>If the participant is an inactive participant at retirement, the accrued benefit paid to a married participant receiving a 50% joint and survivor annuity will be reduced by 50%.</p> <p>If the participant is an inactive participant at retirement, the accrued benefit paid to a married participant receiving a 50% joint and survivor annuity will be reduced:</p>																																											
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Schedule SB, Part V — Summary of Plan Provisions

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Schedule SB, Part V — Summary of Plan Provisions

SPECIAL EARLY RETIREMENT	
<ul style="list-style-type: none"> Eligibility 	<p><u>1. Richmond:</u> Employees who have been absent from service for 2 years due to a layoff, permanent shut-down, sickness or accident and attained age 55 with 10 years of service and age plus service equals 70 or 10 years of service and age plus service equals 80.</p> <p><u>2. Richmond:</u> Employees who have been absent from service for 2 years due to a layoff, permanent shut-down, sickness or accident and have twenty years of service and age plus service equals 65.</p> <p><u>3. Richmond:</u> Employees who have been absent from service for 3 years due to a layoff, permanent shut-down, sickness or accident and have attained age 55 with 10 years of service.</p> <p><u>4. Ashville:</u> Employees who have been absent from service for 2 years due to a layoff, permanent shut-down, sickness, or accident and have attained age 55 and 10 years of service.</p> <p><u>5. Ashville:</u> Employees who have been absent from service due to a layoff, permanent shut-down, sickness, or accident and attained age 55 with 10 years of service and age plus service equals 75 or 10 years of service and age plus service equals 80.</p>
<ul style="list-style-type: none"> Benefit 	<p><u>1. Richmond:</u> Accrued benefit at retirement plus the Special Retirement Benefit. A supplemental retirement benefit of \$400 per month will also be payable until attaining age 62.</p> <p><u>2. Richmond:</u> Accrued benefit at retirement plus the Special Retirement Benefit. A supplemental retirement benefit of \$400 per month, reduced by ½ of any earned income in excess of \$5500, will also be payable until attaining age 62.</p> <p><u>3. Richmond:</u> Accrued benefit at retirement plus the Special Retirement Benefit.</p> <p><u>4. Ashville:</u> Accrued benefit at retirement plus the Special Retirement Benefit.</p> <p><u>5. Ashville:</u> Accrued benefit at retirement plus the Special Retirement Benefit. A supplemental retirement benefit of \$100 per month will also be payable until attaining age 65 or receiving social security disability benefits.</p>
LATE RETIREMENT	
<ul style="list-style-type: none"> Eligibility 	<p>Retirement after reaching normal retirement eligibility.</p>

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• Benefit	Greater of accrued benefit on normal retirement date actuarially increased to late retirement date or accrued benefit on late retirement date.
DEFERRED VESTED	
• Eligibility	5 years of service or age 65.
• Benefit	The participant's accrued benefit.
DISABILITY	
• Eligibility	Completion of 10 years of Credited Service and determination that participant is totally and permanently disabled.
• Benefit	<p>Accrued benefit on date of disability.</p> <p><u>Richmond Location</u></p> <p>If the participant is less than attained age 62, accrued benefit on the date of disability (minimum \$400) plus a supplemental benefit of \$400 per month payable until attaining age 62 or Social Security Disability payments start.</p> <p><u>Ashville Location</u></p> <p>If the participant is not eligible for Social Security Disability payments, accrued benefit on the date of disability (minimum \$100) plus a supplemental benefit of \$100 per month payable until attaining age 62 or Social Security Disability payments start.</p>
PRE-RETIREMENT DEATH	
• Eligibility	Partially or fully vested.
• Benefit if active	<p>Monthly annuity payable to spouse equal to 50% of the accrued benefit.</p> <p>If the participant was at the Richmond Location and had attained age 55 with 30 years of service at the date of death, the spouse will also receive 50% of the Supplemental Retirement Benefit, payable until the participant would have attained age 62.</p>
• Benefit if inactive	Monthly annuity payable to spouse, deferred to attained age 60, equal to the amount that would have been paid had the participant terminated employment on the date of death and survived to his/her age 60, retired with a qualified joint and 50% survivor annuity in effect, then died the next day.

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FORM OF BENEFITS	
• Automatic form for unmarried participants	Life annuity.
• Automatic form for married participants	50% joint and survivor.
• Optional forms	Life annuity 50% joint and survivor with pop-up 75% joint and survivor
• Optional form conversion factors	The 50% joint and survivor with pop-up for active participants is equal to 95% of the life annuity. The 50% joint and survivor for inactive participants is based on the following factors:
	The other optional forms use Applicable Interest rate and Mortality found in Code Section 417(e)(3).
MISCELLANEOUS	
• Maximum benefits	Annual benefits may not exceed the limits in IRC Section 415. This limit is indexed annually. For 2018, the limit is \$220,000.
• Administration	Administered by the Benefits Committee
• Funding medium	Trust
• Benefits not included in valuation	None

*Schedule SB, Part V — Summary of Plan Provisions***Benefits Included or Excluded**

Unless noted below, all benefits provided by the plan are included in this valuation:

- **Plan amendments excluded:** Amendments adopted after the valuation date or effective after the current plan year are excluded from the valuation.
- **Late retirement increases:**
 - *Active participants:* The plan provides benefit suspension notices to participants who work beyond normal retirement; therefore, late retirement actuarial increases only apply to participants who defer retirement beyond age 70½.
 - *Deferred vested participants:* Current deferred vested participants over normal retirement age are not valued including the late retirement actuarial increase.
- **Internal Revenue Code limitations:** The limitations of Internal Revenue Code Section 415(b) and 401(a)(17) have been incorporated into our calculations.
- **IRC Section 416 rules for top-heavy plans:** We did not test whether this plan is top-heavy (when the present value of benefits for key employees equals or exceeds 60 percent of the present value for all participants). However, we expect that the plan is not top-heavy due to the large number of rank-and-file participants; therefore, the funding target and target normal cost do not reflect any liability for top-heavy benefit accruals.
- **IRC Section 436 benefit restrictions:**
 - *Unpredictable contingent event benefits:* This valuation excludes restricted contingent event benefits, because the likelihood of an event is de minimis.
 - › Special Retirement Benefits
 - *Prohibited payments:* Limitations on prohibited benefits (if any) are reflected for annuity starting dates before the valuation date but are ignored for annuity starting dates on or after the valuation date.
 - *Benefit accruals:* The plan's funding target does not reflect any limitation on benefit accruals. The target normal cost does not reflect any limitation on benefit accruals.

PLAN PROVISION CHANGES SINCE PRIOR VALUATION

Maximum benefit amounts under IRS rules were updated from \$215,000 in 2017 to \$220,000 in 2018.

Plan Name	Aleris Retirement Plan For Bargained Employees
Plan Sponsor EIN	27-1539745
ERISA Plan No.	003
Plan Year End	12/31/2018

The required attachment noted below is included within the Accountant's Opinion attachment to the Form 5500 Schedule H, Part III, which consists of the entire Audit report issued by the Plan's Independent Qualified Public Accountant (IQPA).

Form/Schedule	Line Item	Description
5500 Schedule H	Line 4i	Schedule of Assets (Held at End of Year)

Schedule SB, line 32 — Schedule of Amortization Bases

The total shortfall amortization charge is the sum of the individual shortfall amortization installment for each plan year covered under PPA. Although an individual shortfall amortization installment can be negative, the combined shortfall amortization charge cannot be less than \$0.

SHORTFALL BASES					
YEAR ESTABLISHED		OUTSTANDING BALANCE	YEARS REMAINING		2018 INSTALLMENT
2017	\$	108,677	6	\$	20,121
2018		(34,433)	7		(5,621)
Total	\$	74,244		\$	14,500

Schedule SB, line 24 — Change in Actuarial Assumptions

- The expense component of normal cost decreased from \$125,104 to \$116,806 to reflect our expectations for the current plan year.
- The expected return on assets assumption was updated from 7.75% in 2017 to 7.10% in 2018.