Armstrong
World Industries

Armstrong World Industries Investor Presentation

March 2024

Safe Harbor Statement

Disclosures in this presentation contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including without limitation, those relating to future financial and operational results, expected savings from cost management initiatives, the performance of our WAVE[1] joint venture, market and broader economic conditions and guidance. Those statements provide our future expectations or forecasts and can be identified by our use of words such as “anticipate,” “estimate,” “expect,” “project,” “intend,” “plan,” “believe,” “outlook,” “target,” “predict,” “may,” “will,” “would,” “could,” “should,” “seek,” and other words or phrases of similar meaning in connection with any discussion of future operating or financial performance. This includes annual guidance. Forward-looking statements, by their nature, address matters that are uncertain and involve risks because they relate to events and depend on circumstances that may or may not occur in the future. As a result, our actual results may differ materially from our expected results and from those expressed in our forward-looking statements. A more detailed discussion of the risks and uncertainties that could cause our actual results to differ materially from those projected, anticipated or implied is included in the “Risk Factors” and “Management’s Discussion and Analysis” sections of our reports on Form 10-K and Form 10-Q filed with the U.S. Securities and Exchange Commission (“SEC”), including our annual report on Form 10-K for the year ended December 31, 2023. Forward-looking statements speak only as of the date they are made. We undertake no obligation to update any forward-looking statements beyond what is required under applicable securities law.

In addition, we will be referring to non-Generally Accepted Accounting Principles in the United States (“GAAP”) financial measures within the meaning of SEC Regulation G.

A reconciliation of the differences between these measures with the most directly comparable financial measures calculated in accordance with GAAP is included within this presentation and available on the Investor Relations page of our website at www.armstrongceilings.com.

The guidance in this presentation is only effective as of the date given, February 20, 2024, and will not be updated or affirmed unless and until we publicly announce updated or affirmed guidance.

1. Worthington Armstrong Joint Venture (“WAVE”).

Basis of Presentation Explanation

Results throughout this presentation are presented on a normalized basis.

We remove the impact of certain discrete expenses and income in certain measures including adjusted Earnings Before Interest, Taxes, Depreciation and Amortization ("EBITDA"), adjusted diluted earnings per share ("EPS") and adjusted free cash flow. The Company excludes certain acquisition related expenses (i.e. – changes in the fair value of contingent consideration and deferred compensation accruals[1] for acquisitions). The Company excludes all acquisition-related amortization from adjusted earnings from continuing operations and in calculations of adjusted diluted EPS. Examples of other excluded items have included plant closures, restructuring charges and related costs, impairments, separation costs and other cost reduction initiatives, environmental site expenses and environmental insurance recoveries, endowment level charitable contributions, and certain other gains and losses. The Company also excludes income/expense from its U.S. Retirement Income Plan ("RIP") in the non-GAAP results as it represents the actuarial net periodic benefit credit/cost recorded.

Our tax rate may be adjusted for certain discrete items which are identified in the footnotes.

Investors should not consider non-GAAP measures as a substitute for GAAP measures.

Excluding adjusted diluted EPS, non-GAAP figures are rounded to the nearest million and corresponding percentages are based on unrounded figures.

Operating Segments: "MF": Mineral Fiber, "AS": Architectural Specialties, "UC": Unallocated Corporate

All dollar figures throughout the presentation are in $ millions, except per share data, and all comparisons are versus the applicable prior-year period unless otherwise noted. Figures may not sum due to rounding.

1. The deferred compensation accruals are for cash and stock awards that were recorded over each awards' respective vesting period, as such payments are subject to the sellers' and employees' continued employment with the Company.

GAAP and Non-GAAP Financial Results

AWI Consolidated Results	Full Year						
	2018	2019	2020	2021	2022	2023	5-Year CAGR ('18 – '23)
Net sales	$975.3	$1,038.1	$936.9	$1,106.6	$1,233.1	$1,295.2	5.8%
Net earnings (loss)	$185.9	$214.5	($99.1)	$183.2	$202.9	$223.8	3.8%
Operating income	$249.4	$317.4	$254.8	$260.0	$278.7	$323.7	5.4%
Adj. EBITDA*	$353	$403	$330	$372	$385	$430	4.1%
Operating income margin (Operating income % of net sales)	25.6%	30.6%	27.2%	23.5%	22.6%	25.0%	NM
Adj. EBITDA margin* (Adj. EBITDA % of net sales)	36.1%	38.8%	35.2%	33.6%	31.2%	33.2%	NM
Diluted earnings (loss) per share from continuing operations	$3.63	$4.88	($1.76)	$3.86	$4.30	$4.99	6.6%
Adj. diluted earnings per share from continuing operations*	$3.66	$4.78	$3.74	$4.36	$4.74	$5.32	7.8%
Net cash provided by operating & investing activities	$512.8	$93.6	$77.7	$173.3	$210.6	$223.1	(15.3%)
Adj. free cash flow*	$236	$244	$212	$190	$221	$263	2.2%
Net cash provided by operating & investing activities % of net sales	52.6%	9.0%	8.3%	15.7%	17.1%	17.2%	NM
Adj. free cash flow margin* (Adj. free cash flow % of net sales)	24.2%	23.5%	22.7%	17.2%	17.9%	20.3%	NM
Net cash provided by operating & investing activities % of operating income	205.6%	29.5%	30.5%	66.7%	75.6%	68.9%	NM
Adjusted free cash flow conversion* (Adj. free cash flow % of Adj. EBITDA)	66.9%	60.5%	64.4%	51.2%	57.4%	61.2%	NM

Segment Results	Full Year 2023			Full Year 2022		
	MF	AS	UC	MF	AS	UC
Net sales	$932.4	$362.8	-	$887.4	$345.7	-
Operating income (loss)	$285.7	$40.9	($2.9)	$260.9	$21.7	($3.9)
Adj. EBITDA*	$364	$66	-	$330	$55	-
Operating income margin (Operating income % of net sales)	30.6%	11.3%	NM	29.4%	6.3%	NM
Adj. EBITDA margin* (Adj. EBITDA % of net sales)	39.1%	18.1%	NM	37.2%	15.8%	NM

*Non-GAAP reconciliations are available in the appendix of this presentation. NM: Not meaningful.



Armstrong World Industries, Inc. (NYSE:AWI)

Leader in the design & manufacturing of innovative ceiling & wall solutions in the Americas.

FULL YEAR 2023 CONSOLIDATED RESULTS

NET SALES	ADJUSTED EBITDA*	ADJUSTED DILUTED EPS*	ADJUSTED FREE CASH FLOW*
$1,295M	$430M	$5.32	$263M

SEGMENT 1: MINERAL FIBER

NET SALES	ADJ. EBITDA*
$932M	$364M

JOINT VENTURE

WAVE – WORTHINGTON ARMSTRONG VENTURE

SEGMENT 2: ARCHITECTURAL SPECIALTIES

NET SALES	ADJ. EBITDA*
$363M	$66M

KEY VERTICALS WE SERVE & % OF TOTAL AWI NET SALES**

EDUCATION	OFFICE	HEALTHCARE	RETAIL	TRANSPORTATION
30%	30%	20%	10%	10%

*Non-GAAP measure. See appendix for reconciliation to nearest GAAP measure.
**Based on internal company estimates.
1. Excluding WAVE facilities.

For more than 160 years, we have built our business on trust and integrity.

Armstrong Headquarters

Manufacturing Facilities



~3,100 EMPLOYEES

16 OPERATING FACILITIES[1]

Our Focus on Purpose-Driven Sustainability

OUR PURPOSE

Redefining the environments where we:

- LIVE
- WORK
- LEARN
- HEAL
- PLAY

"Through our ambitious sustainability agenda, we are cultivating thriving environments for employees and communities; more actively meeting demands for healthier, circular products; and doing more with less to preserve and protect our planet's resources.

This is important work for us, because we believe sustainability is a commitment that fulfills our corporate purpose to make a positive difference in the spaces where we live, work, learn, heal and play. Further, it is a critical enabler for our strategy to achieve long-term profitable growth."

Vic Grizzle
CEO, Armstrong World Industries



Additional ESG Resources: Sustainability Website | 2023 ESG Report

Uniquely Positioned to Win in an Attractive Category



Attractive Category

Ceiling & wall solutions is unique within the building products industry.

Consolidated industry structure with exposure to diverse end markets

Large installed base (est. at ~39 Billion ft^2) generates stable and repeating repair and remodel demand*

Highly specified, high-value products with few cost-effective substitutes

Customers demonstrate brand loyalty; **reward performance, service and innovation**

Ceilings are an integral part of evolving solutions to meet increasing demand for **healthy indoor spaces**



Why We Win

AWI is advantageously positioned to win in this category.

Strongest and most trusted brand

Broadest, most innovative product portfolio

Specification leadership through deep and long-standing relationships with architects and designers

Large manufacturing **scale** with **strong exclusive distribution partners**

Operational excellence supporting **best-in-class** service and quality

A culture that fosters **empowerment, innovation, teamwork and execution** across functional areas

*Based on internal company estimates.



OUR MISSION

At Armstrong, **we imagine and enable new possibilities every day**. We are **redefining how the environments** in which we live, work, learn, heal and play **can become smarter, healthier and more inspiring** for all.

We **transform experiences for customers and occupants** and **elevate the human experience** by assuring that all of our products, processes, and policies support healthy communities and environmental sustainability.

Creating a Differentiated, Focused Buildings Products Company

2016 — Separated from Armstrong Flooring to focus on ceiling and wall solutions.

2017 — Announced sale of non-Americas business. Completed 1 AS acquisition.

TECTUM INC. The Noise Control Solution

2018 — Initiated quarterly cash dividend. Completed 2 AS acquisitions.

Steel Ceilings Inc. Manufacturer of Metal Ceilings and Specialty Systems

PLASTERFORM™ Architectural Castings

2019 — $150M accelerated share repurchase using proceeds from sale of non-Americas business. Completed 2 AS acquisitions.

ACGI

MRK INDUSTRIES

2020 — Launched Healthy Spaces portfolio. Completed 3 AS acquisitions.

MóZ™

TURF

ARKTURA

2021 — Launched kanopi™ digital platform. Issued inaugural sustainability report establishing 2030 ESG targets.

kanopi By Armstrong Ceilings

ProjectWorks

2022 — Advanced digital initiatives of kanopi and ProjectWorks™. Completed 1 AS acquisition.

GCPRODUCTS

2023 — Launched innovative energy savings ceiling solution. Completed 1 AS acquisition and 1 MF acquisition.

BŌK MODERN

2024 — Equity investment in Overcast Innovations venture, focused on modular ceiling system solutions addressing construction efficiencies.

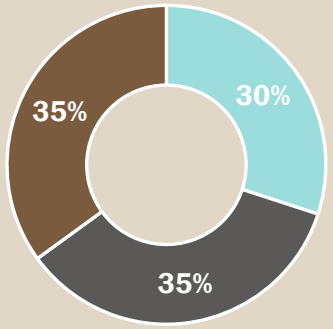
OVERCAST INNOVATIONS

Total Customer Experience Supported by Complementary Segments

A unique value proposition for our customers differentiates AWI in the industry

Mineral Fiber

Net Sales by Project Type*



Repair: New: Major Reno:

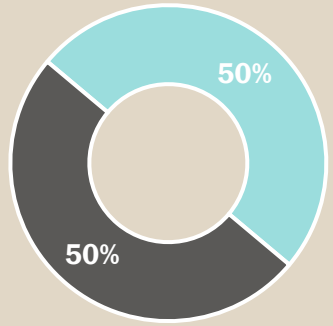
3%
5-Year Sales CAGR[1]

39%
FY 2023 Adj. EBITDA Margin**

Key Attributes

- Consistent AUV improvement
- Targeted manufacturing productivity ~3% annually
- Diverse verticals and project types lessens cyclicality
- Equity Earnings contribution from WAVE JV

Architectural Specialties



16%
5-Year Sales CAGR[1]

18%
FY 2023 Adj. EBITDA Margin**

- Leveraged to major renovation and new construction
- High design, custom projects for statement spaces
- Lower capital requirements
- Strong growth and margin expansion opportunities

Total Customer Experience

- Broad Product Portfolio
- Specification Leadership
- Best-In-Class Distribution
- Brand Strength
- Operational Excellence

*Based on internal company estimates.
**Non-GAAP measure. See appendix for reconciliation to nearest GAAP measure.
1. CAGR represents 2018 to 2023 results.

Successful Joint Venture Provides Important Competitive Advantage

Armstrong® World Industries

Go to market expertise

WORTHINGTON ENTERPRISES

Steel procurement and supply chain management expertise

WAVE
WORTHINGTON ARMSTRONG VENTURE

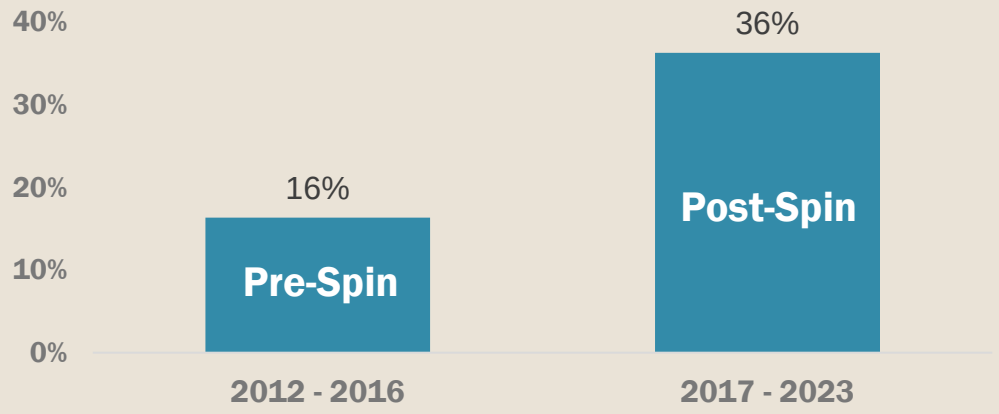
- Established in **1992…50/50** joint venture leveraging expertise of both partners
- **North American market leader** in ceiling suspension system (grid) & integrated solutions
- Innovation mindset
- **$450** million in sales in 2023
- Over **$650 million** of cash dividends to AWI since 2017
- **7 U.S. plants**
- ~500 employees



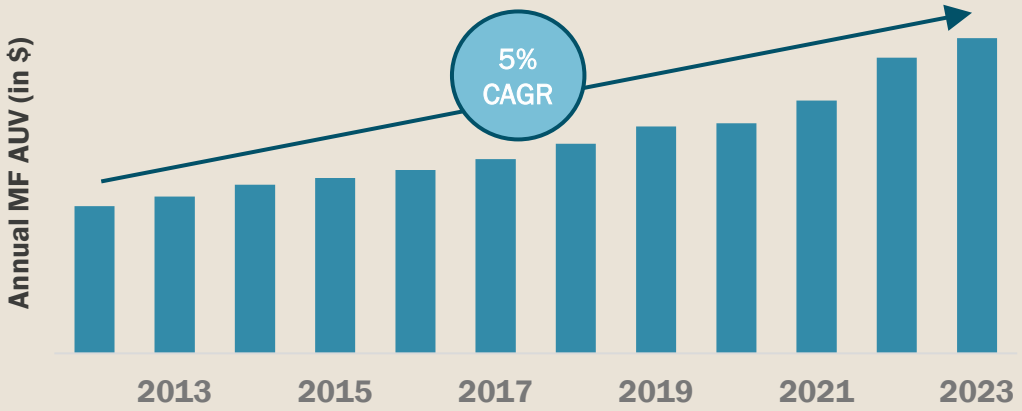
Innovation Supports Consistent Mineral Fiber AUV Growth

New products and features rewarded in the market

Product Vitality Index[1] Demonstrates the Power of Focus



Proven Ability to Consistently Deliver AUV[2] Growth



INNOVATION AT THE CORE OF AWI

Provide new products to **address emerging, market-driven needs** through **efficient process and collaborations**

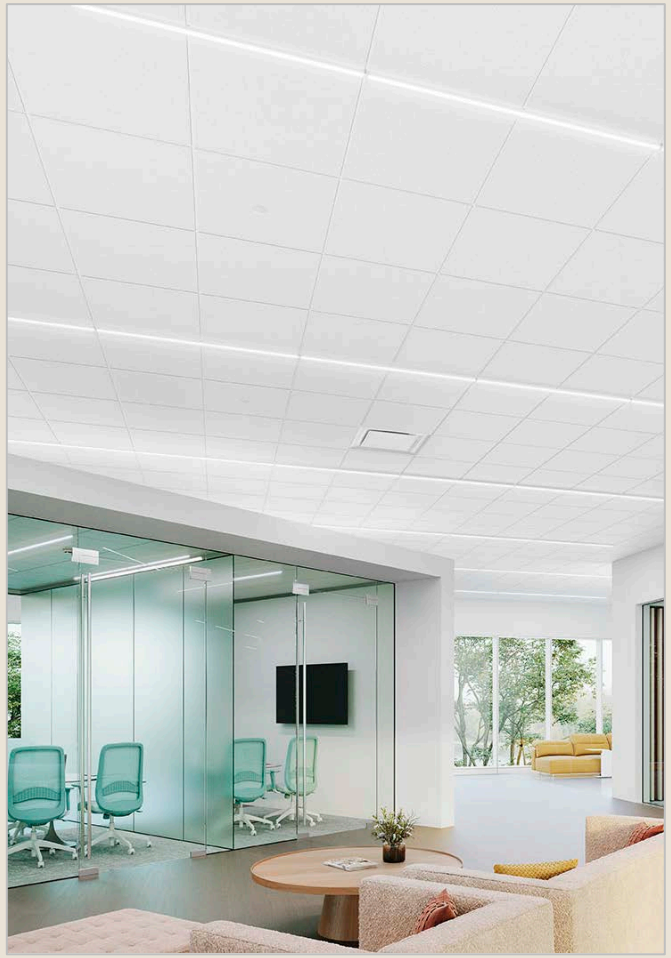
Robust processes with agile mindset

Creating highly specified high-value products

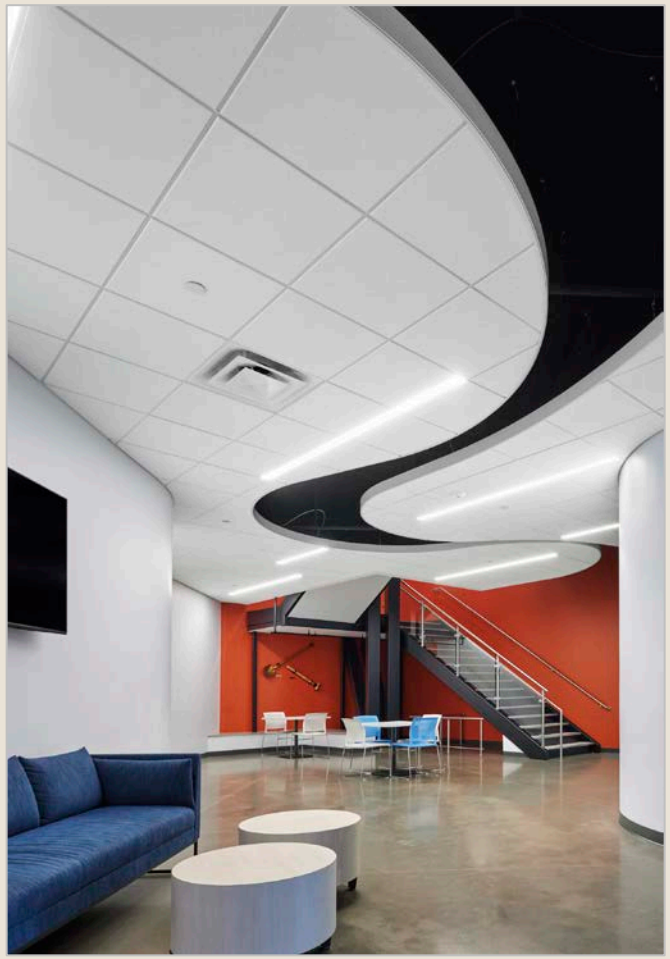
1. Product Vitality Index represents the percent of total sales from products introduced in the last 5 years. Pre-Spin and Post-Spin refers to the separation from Armstrong Flooring, completed on April 1, 2016.
2. US and Canada Mineral Fiber Commercial only.

Comprehensive Range of Innovation Further Differentiates AWI

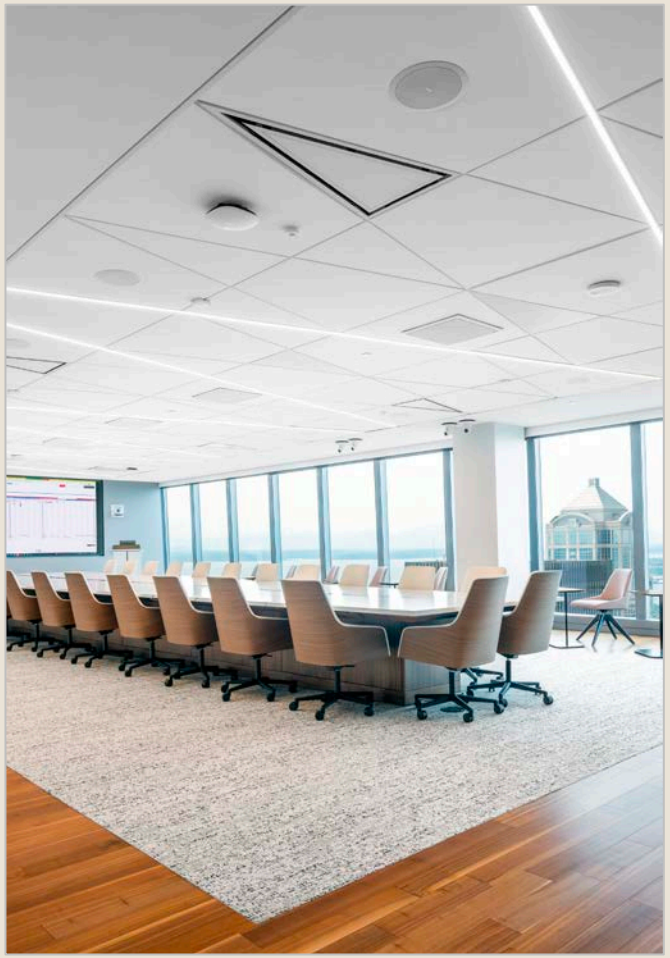
Unrivaled product development to meet customer needs with higher value products



MF: ULTIMA® Templok®



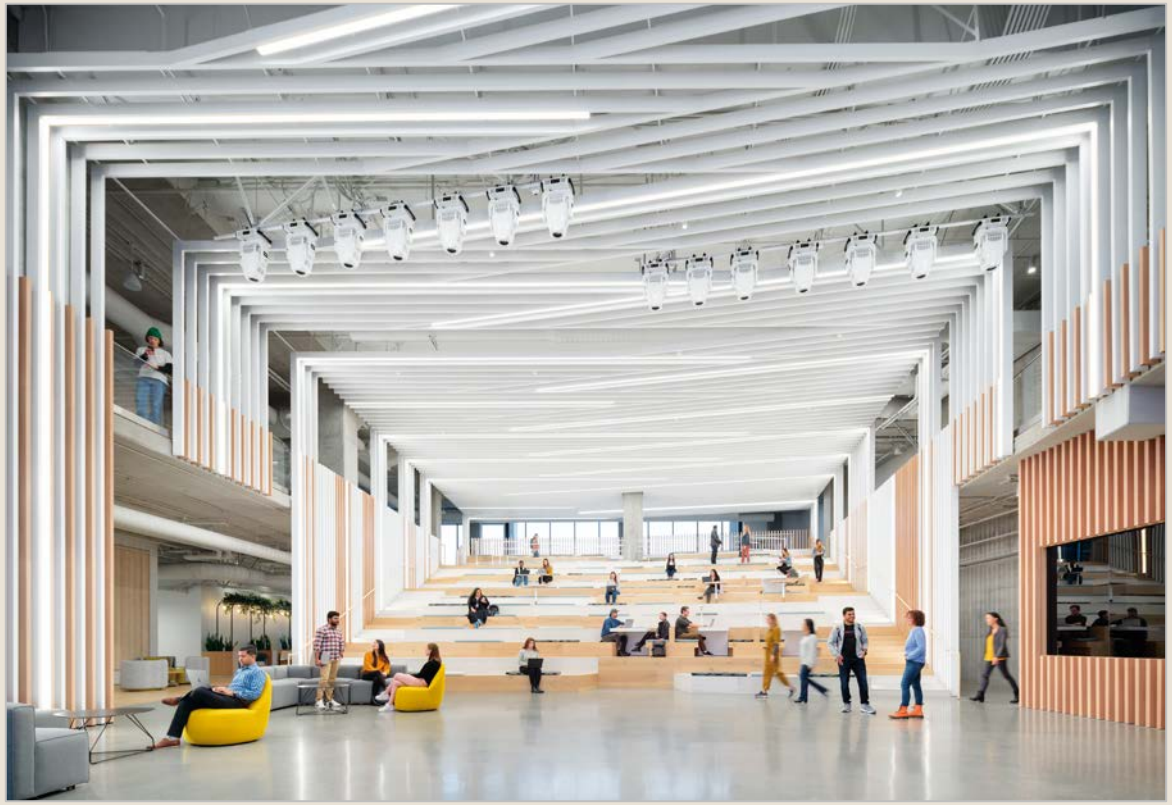
MF: ULTIMA® Lay-in and Tegular
GRID: AXIOM®



MF: ACOUSTIBUILT®
MF: LYRA® PB Shapes
GRID: AXIOM®

Comprehensive Range of Innovation Further Differentiates AWI

Unrivaled product development to meet customer needs with higher value products



AS: METALWORKS™ Custom Blades

Check out the full project here!

ProjectWorks®

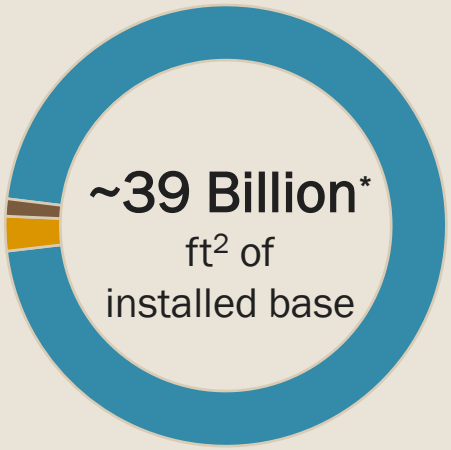


AS: WOODWORKS® Grille Tegular

Growth Initiatives Support Volume and AUV Performance

Initiatives strengthen both Mineral Fiber and Architectural Specialties segments

Large Installed Base Provides Sizable Opportunity to Influence



- Installed Base
- Annual Market Major Reno and Repair Volume
- Annual Market New Construction

	Overview	Growth Impact: Volume	Growth Impact: AUV	Key stakeholders
kanopi By Armstrong Ceilings	Digital platform to deliver end-to-end ceiling solutions, accessing untouched demand	Repair and Remodel	Medium	Facility managers, small business owners, DIY
ProjectWorks	Automated design service to deepen customer relationships, strengthen specifications and lower construction costs	New and Major Reno	High	Designers, architects, contractors, owners
Healthy Spaces	Focused on sustainable solutions for better indoor environmental quality ("IEQ"), construction and energy efficiencies…a secular tailwind for renovation	New, Major Reno, Repair and Remodel	High	Building owners and occupants, designers, architects, energy service companies

*Based on internal company estimates.

Why AWI?

Peer-leading profitability and resilient cash flow differentiate AWI in the building products space



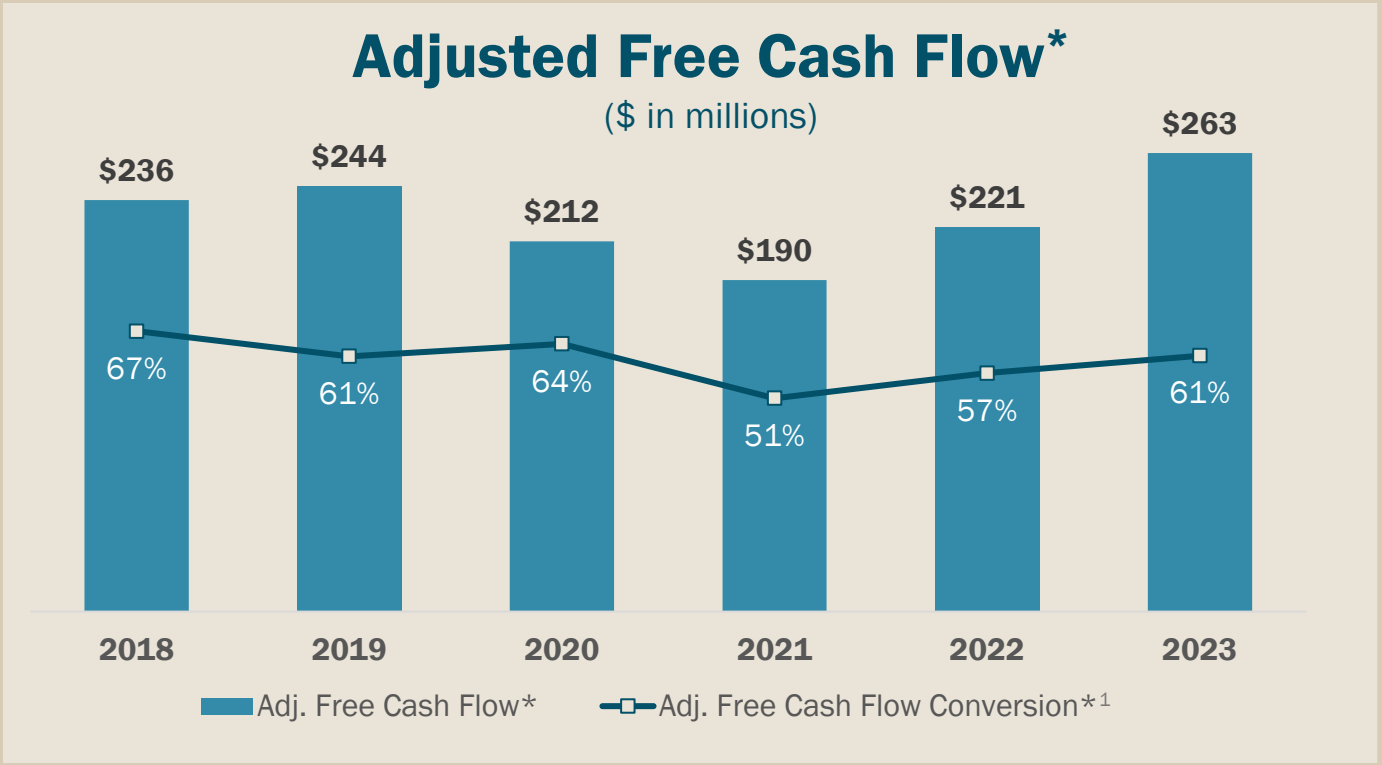


1 Unique industry-leading position with ability to **grow Mineral Fiber sales and expand margins**, supported by strong AUV growth, productivity gains and growth initiatives

2 **Higher growth profile AS segment** with **strategic acquisitions** to expand capabilities and **solidify leadership** in ceiling and wall solutions

3 **Resilient cash flow** generation and **balanced and disciplined capital allocation** to drive shareholder value

Consistent, Strong Adjusted Free Cash Flow* Generation Driven by Attractive Business Fundamentals



~$1.1B of Adjusted Free Cash Flow* since 2019

Capital Allocation Priorities

1. Reinvesting into the business
2. Strategic acquisitions & partnerships
3. Returning cash to shareholders

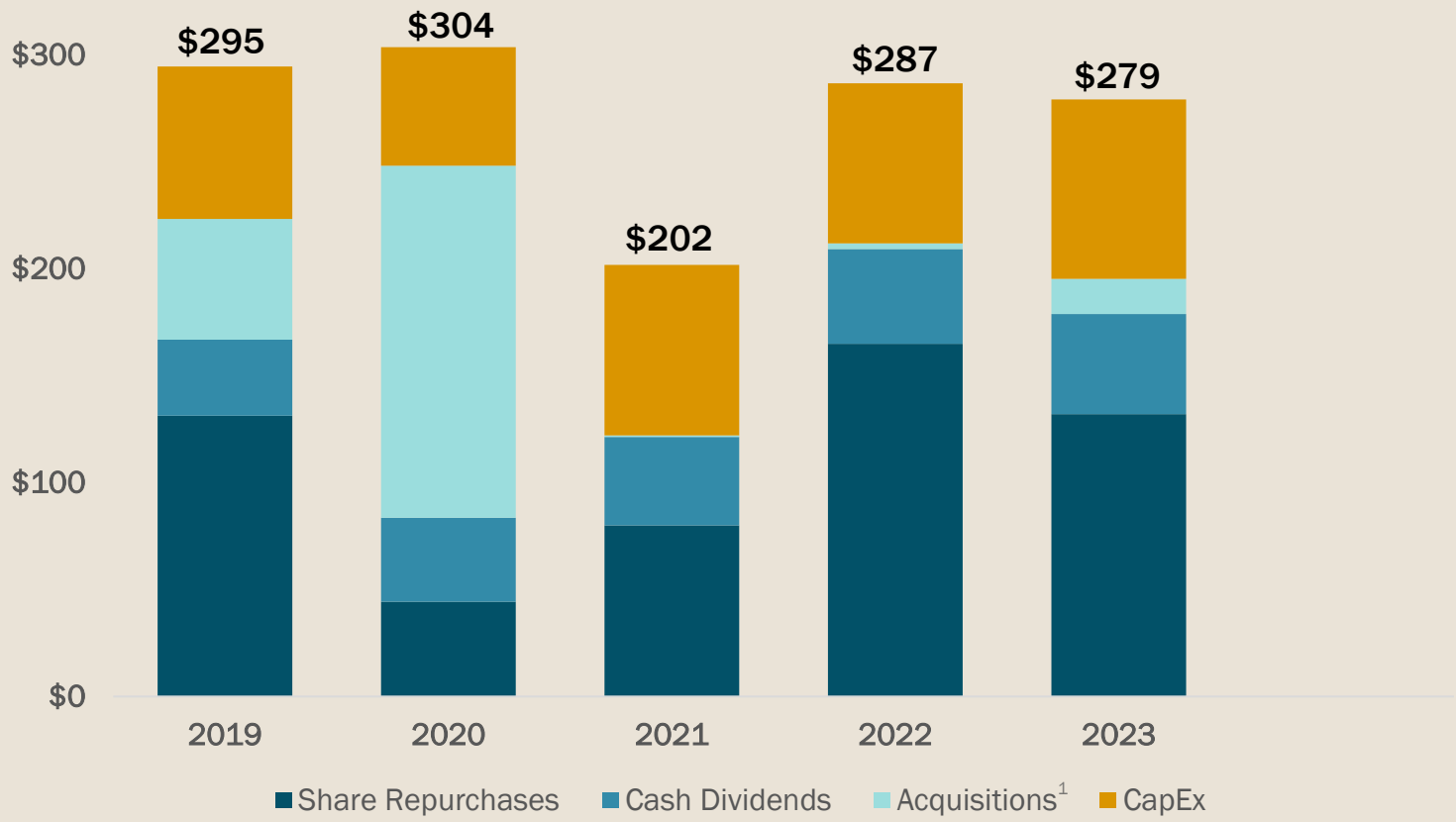
*Non-GAAP measure. See appendix for reconciliation to nearest GAAP measure

1. Adj. Free Cash Flow Conversion represents Adjusted Free Cash Flow as a percentage of Adjusted EBITDA.

Balanced Approach to Capital Deployment Funds All Priorities

Capital Deployment by Category

($ in millions)



Track Record (2019 - 2023)

$365M in capital expenditures

7 AS acquisitions[1] totaling **$238M**

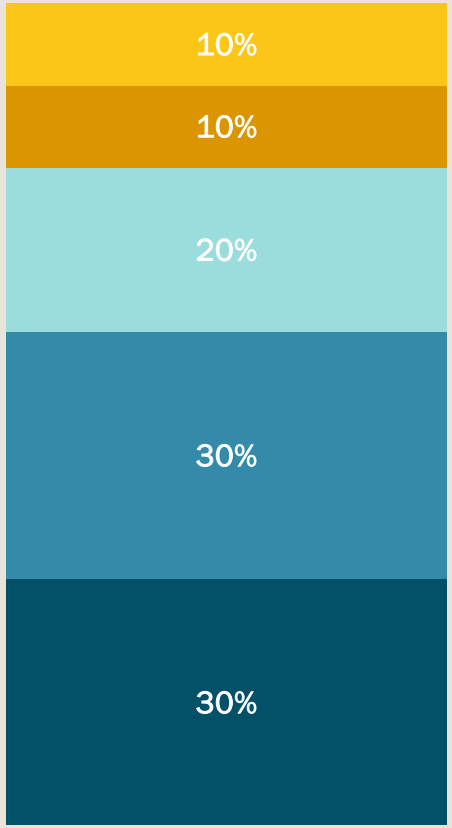
$760M of share repurchases and dividends

Note: Future dividend payments and share repurchase authorizations are subject to approval from the Board of Directors.

1. Reflects cash paid for acquisitions, net of cash acquired, recorded as a component of cash (used for) provided by investing activities. 2023 excludes the acquisition of software-related intellectual property.

End Market Vertical Outlook*

Diverse end market exposure provides portfolio effect on sales performance



Percent of AWI Sales by Vertical**	Outlook*	Market Insights
Retail	Slightly Negative	Lingering headwinds from online shopping balanced by population shifts to suburbs and multi-use in urban areas.
Transportation	Positive	Funding infusion from Infrastructure Investment and Jobs Act totaling $15 billion[1] for airports through 2026.
Healthcare	Slightly Positive	Continued growth in hospitals and urgent care centers driven by residential developments and need for more flexible surge capacity.
Office	Slightly Negative	Vacancy rates in certain large metros and lingering economic uncertainty limiting discretionary spend; data center growth providing partial offset.
Education	Positive	Healthy state government budgets, supported by remaining ESSER[2] funding, offset by demographic trends. R&D laboratory growth continues.

*12-to-24-month outlook based on internal company estimates and Dodge data and analytics.
**Based on internal company estimates.

1. According to the Federal Aviation Administration.
2. Elementary and Secondary School Emergency Relief.

Full Year 2024 Guidance[1]

Remaining focused on solid execution & margin expansion

Net Sales

$1,335M to $1,375M

3% to 6% YoY

Adjusted EBITDA*

$450M to $470M

5% to 9% YoY

Adjusted Diluted EPS*

$5.60 to $5.90

5% to 11% YoY

Adjusted Free Cash Flow*

$275M to $290M

5% to 10% YoY

*Non-GAAP measure. See appendix for reconciliation to nearest GAAP measure.

1. As issued on February 20, 2024.
2. Additional assumptions available in the appendix of this presentation.

Commentary[2]

- Expecting slower economic growth
- Initiatives partially offset lower market demand, resulting in MF volume down low-single digits
- Expect MF AUV to grow at historic average, driving margin expansion
- Inflation continues to moderate
- AS continues efforts to penetrate fragmented market and expand margins

Appendix

Full Year 2024 Assumptions[1]

Segment[2]	Net Sales	Adjusted EBITDA Margin*
Mineral Fiber	+2% to +5% growth	~40%
Architectural Specialties	+6% to +9% growth	~19%

Consolidated Metrics	Full Year 2024
Capital expenditures	$80M to $90M
Depreciation and amortization	$90M to $100M
Interest expense	$40M to $42M
Book / cash tax rate	~25% / 25% to 26%
Shares outstanding	~43 to 44 million
Return of investment from joint venture	$85M to $95M

Shipping Days vs Prior Year	2023	2024	2025[3]
Q1	+1	-	-
Q2	-	-	-
Q3	(1)	+1	-
Q4	-	+1	-
Full Year	-	+2	-

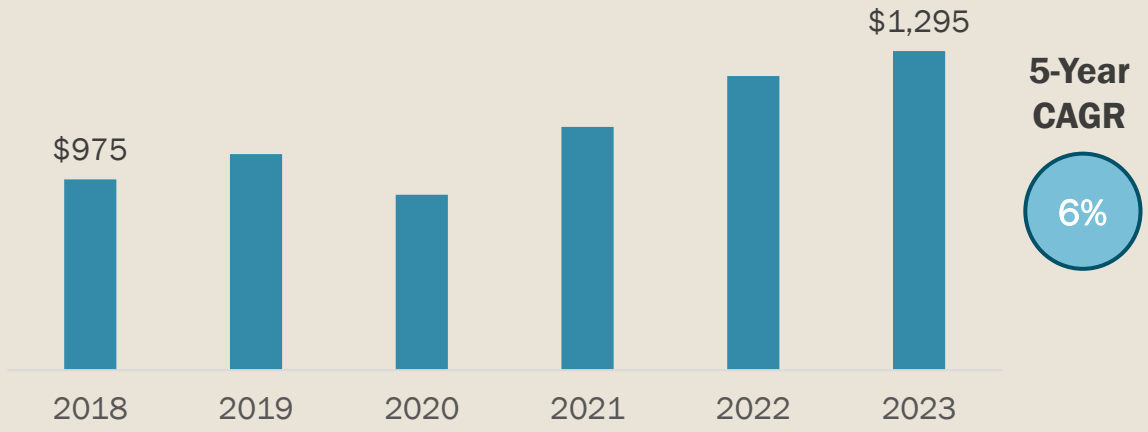
*Non-GAAP Measure.

1. As issued on February 20, 2024
2. Assumes no contribution from future acquisitions.
3. Based on preliminary expectations. Subject to change.

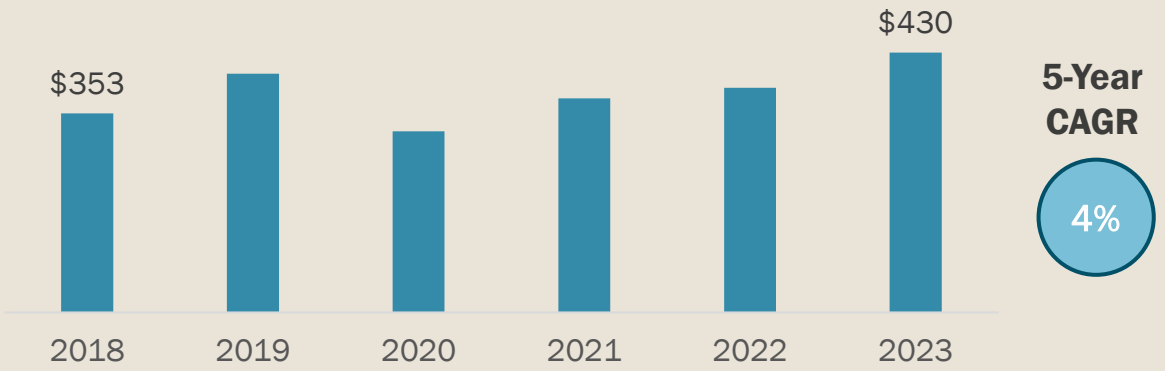
Top and Bottom-Line Growth Creates Value for Shareholders

A history of consistent growth, with accelerators in place for future growth

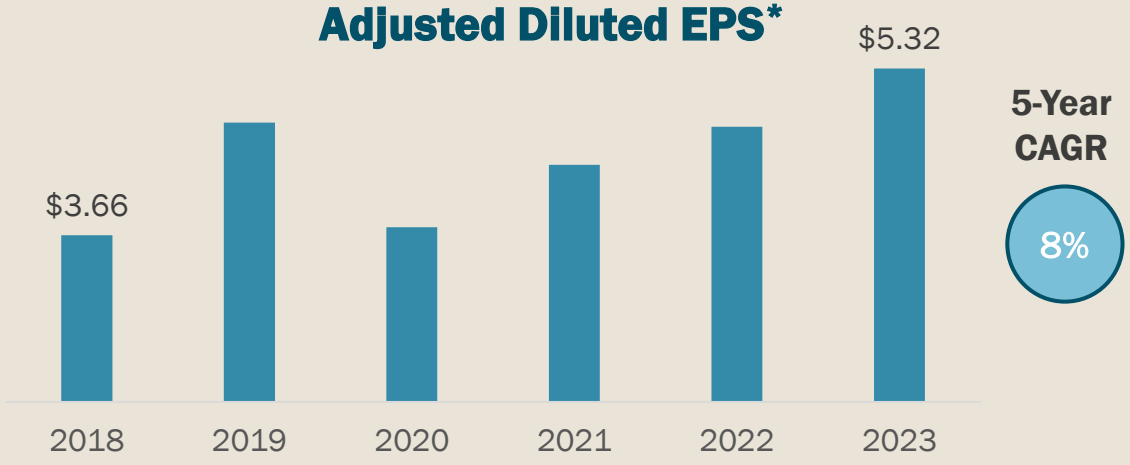
Net Sales



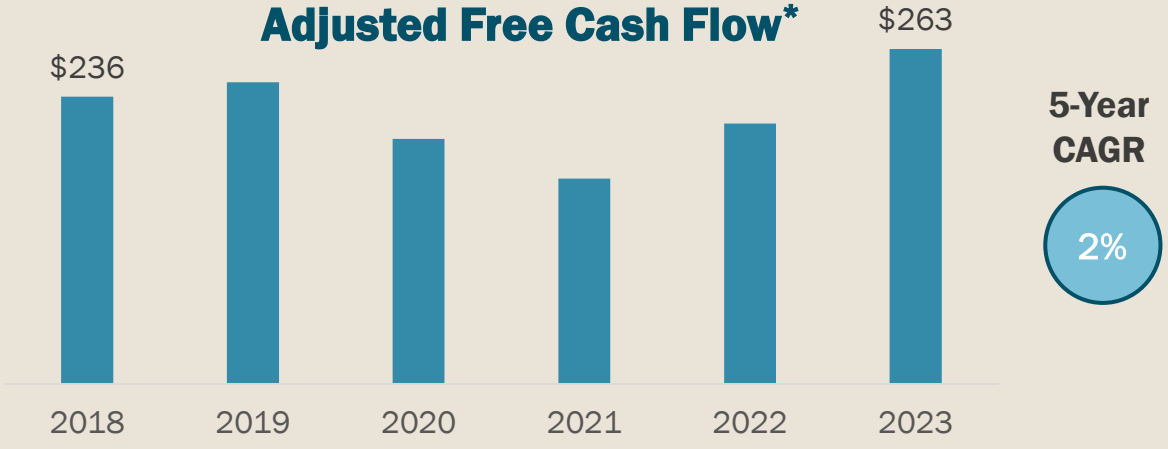
Adjusted EBITDA*



Adjusted Diluted EPS*



Adjusted Free Cash Flow*



*Non-GAAP measure. See following pages for reconciliation to nearest GAAP measure.

2018 – 2023 Adjusted EBITDA Reconciliation

	Year Ended December 31,					
	2018	2019	2020	2021	2022	2023
Net Sales	**$975**	**$1,038**	**$937**	**$1,107**	**$1,233**	**$1,295**
Net earnings (loss)	**$186**	**$215**	**($99)**	**$183**	**$203**	**$224**
Less: Net (loss) earnings from discontinued operations	(4)	(28)	(15)	(2)	3	-
Earnings (loss) from continuing operations	**$190**	**$242**	**($84)**	**$185**	**$200**	**$224**
Add: Income tax expense (benefit), as reported	53	57	(43)	57	58	75
Earnings (loss) from continuing operations before tax	**$243**	**$299**	**($127)**	**$243**	**$258**	**$298**
Add: Interest/other income and expense, net	7	18	382	17	21	25
Operating income	**$249**	**$317**	**$255**	**$260**	**$279**	**$324**
Add: RIP expense[1]	6	5	6	5	4	3
Add: Cost reduction initiatives and other	8	-	-	-	-	3
Add: Net proforma international allocations[2]	6	-	-	-	-	-
(Less)/Add: Net environmental (recoveries) expenses	(1)	1	(6)	-	-	-
Add: Litigation expense[3]	7	20	-	-	-	-
Add: WAVE pension settlement	-	1	-	-	-	-
Add: WAVE FSA[4]	-	4	-	-	-	-
(Less): AWI portion of WAVE's (gain) on sale of international	-	(21)	-	-	-	-
Add: Charitable contribution – AWI Foundation[5]	-	-	10	-	-	-
(Less): (Gain) on sale of idled China facility	-	-	(21)	-	-	-
Add: Acquisition-related impacts[6]	-	-	3	10	19	11
Adjusted operating income	**$275**	**$328**	**$246**	**$275**	**$301**	**$340**
Add: Depreciation and amortization	78	75	84	97	84	89
Adjusted EBITDA	**$353**	**$403**	**$330**	**$372**	**$385**	**$430**
Operating income margin	25.6%	30.6%	27.2%	23.5%	22.6%	25.0%
Adjusted EBITDA margin	36.1%	38.8%	35.2%	33.6%	31.2%	33.2%

1. RIP expense represents only the plan service cost that is recorded within Operating Income. For all periods presented, we were not required to and did not make cash contributions to our RIP.
2. Includes adjustments to corporate costs and geographic allocations of corporate support functions due to the sale of our non-Americas International businesses.
3. Represents Rockfon litigation costs and settlement.
4. WAVE Fresh Start Accounting asset impairment charge due to sale of our non-Americas international businesses.
5. Endowment level donation to the AWI Foundation.
6. Represents the impact of acquisition-related adjustments for the fair value of acquired inventory and deferred revenue, changes in fair value of contingent consideration and deferred compensation & restricted stock expenses.

2018 – 2023 Adjusted Diluted Earnings per Share Reconciliation

	Year Ended December 31,					
	2018	2019	2020	2021	2022	2023
Earnings (loss) from continuing operations	**$190**	**$242**	**($84)**	**$185**	**$200**	**$224**
Add/(less): Income tax expense (benefit)	53	57	(43)	57	58	75
Earnings (loss) from continuing operations before income taxes	**$243**	**$299**	**($127)**	**$243**	**$258**	**$298**
(Less)/Add: RIP (credit) expense[1]	(26)	(8)	368	-	(1)	(1)
(Less)/Add: environmental (recoveries) expenses	(1)	1	(6)	-	-	-
Add: Cost reduction initiatives and other	22	-	-	-	-	3
Add: Net proforma international allocations[2]	6	-	-	-	-	-
Add: Litigation expense	7	20	-	-	-	-
Add: Non-cash hedge expense	5	-	-	-	-	-
Add: WAVE pension settlement	-	1	-	-	-	-
Add: WAVE FSA[3]	-	4	-	-	-	-
(Less): AWI portion of WAVE's (gain) loss on sale of international	-	(21)	-	-	-	-
(Less): Gain on sale of China facility	-	-	(21)	-	-	-
Add: Accelerated depreciation from St. Helen's facility	-	-	3	-	-	-
Add: Charitable contribution – AWI Foundation[4]	-	-	10	-	-	-
Add: Acquisition-related impacts[5]	-	-	3	10	19	11
Add: Acquisition-related amortization[6]	-	-	7	21	8	6
Adjusted earnings from continuing operations before income taxes	**$255**	**$297**	**$236**	**$274**	**$283**	**$318**
(Less): Adjusted income tax expense[7]	(64)	(61)	(56)	(65)	(63)	(79)
Adjusted earnings from continuing operations	**$191**	**$237**	**$180**	**$209**	**$220**	**$238**
Diluted Shares Outstanding[8]	52.1	49.5	48.2	47.9	46.4	44.8
Tax Rate[9]	25%	20%	24%	24%	22%	25%
Diluted earnings (loss) per share from continuing operations	**$3.63**	**$4.88**	**($1.76)**	**$3.86**	**$4.30**	**$4.99**
Adjusted Diluted Earnings per share from continuing operations	**$3.66**	**$4.78**	**$3.74**	**$4.36**	**$4.74**	**$5.32**

1. RIP (credit) expense represents the entire actuarial net periodic pension (credit) recorded as a component of earnings from continuing operations. For all periods presented, we were not required to and did not make cash contributions to our RIP.
2. Includes adjustments to corporate costs and geographic allocations of corporate support functions due to the sale of our non-Americas International businesses.
3. WAVE Fresh Start Accounting asset impairment charge due to sale of our non-Americas international businesses.
4. Endowment level donation to the AWI Foundation.
5. Represents the impact of acquisition-related adjustments for the fair value of acquired inventory and deferred revenue, changes in fair value of contingent consideration and deferred compensation & restricted stock expenses.
6. Represents the intangible amortization related to acquired entities, including customer relationships, developed technology, software, trademarks and brand names, non-compete agreements and other intangibles.
7. Adjusted income tax expense is calculated using the tax rate multiplied by the adjusted earnings from continuing operations before income taxes.
8. 2020 Dilutive shares outstanding include anti-dilutive common stock equivalents which are excluded from U.S. GAAP Accounting.
9. 2018 reflects an adjusted tax rate of 25%. All other years presented reflect the effective tax rate as reported.

2018 – 2023 Adjusted Free Cash Flow Reconciliation

	Year Ended December 31,					
	2018	2019	2020	2021	2022	2023
Net cash provided by operating activities	**$203**	**$183**	**$219**	**$187**	**$182**	**$234**
Net cash provided by (used for) investing activities	**$310**	**($89)**	**($141)**	**($14)**	**$28**	**($10)**
Net cash provided by operating and investing activities	**$513**	**$94**	**$78**	**$173**	**$211**	**$223**
Add: Acquisitions, net	22	56	165	1	3	27
(Less)/Add: (Proceeds) Payments related to the sale of international, net[1]	(272)	66	(20)	12	-	-
(Less)/Add: Net environmental (recoveries) expenses	(27)	5	(12)	(1)	1	1
Add: Litigation, net	-	23	-	-	-	-
Add: Net payments to WAVE for portion of proceeds from sale of international business	-	-	13	-	-	-
(Less): Proceeds from sale of idled China plant facility	-	-	(22)	-	-	-
Add: Charitable contribution – AWI Foundation[2]	-	-	10	-	-	-
Add: Arktura deferred compensation[3]	-	-	-	5	5	8
Add: Contingent consideration in excess of acquisition-date fair value[4]	-	-	-	-	2	5
Adjusted Free Cash Flow	**$236**	**$244**	**$212**	**$190**	**$221**	**$263**
Net cash provided by operating & investing activities % of net sales	52.6%	9.0%	8.3%	15.7%	17.1%	17.2%
Adjusted Free Cash Flow as a % of net sales	24.2%	23.5%	22.7%	17.2%	17.9%	20.3%

1. Includes related income tax payments.
2. Endowment level donation to the AWI Foundation.
3. Contingent compensation payments related to the acquisition.
4. Contingent compensation payments related to 2020 acquisitions recorded as a component of net cash provided by operating activities.

2022 and 2023 Segment Adjusted EBITDA Reconciliation

	Year Ended December 31,					
	MF		AS		UC	
	2023	2022	2023	2022	2023	2022
Net sales	**$932**	**$887**	**$363**	**$346**	**-**	**-**
Operating income (loss)	**$286**	**$261**	**$41**	**$22**	**($3)**	**($4)**
Add: RIP expense[1]	-	-	-	-	3	4
Add: Acquisition-related impacts[2]	-	-	11	19	-	-
Add: Cost reduction initiatives and other	3	-	-	-	-	-
Adjusted operating income (loss)	**$289**	**$261**	**$52**	**$41**	**-**	**-**
Add: Depreciation and amortization	75	69	14	14	-	-
Adjusted EBITDA	**$364**	**$330**	**$66**	**$55**	**-**	**-**
Operating income margin	30.6%	29.4%	11.3%	6.3%	NM	NM
Adjusted EBITDA margin	39.1%	37.2%	18.1%	15.8%	NM	NM

1. RIP expense represents only the plan service cost related to the RIP that is recorded within Operating Income. For all periods presented, we were not required to and did not make cash contributions to our RIP.
2. Represents the impact of acquisition-related adjustments for the fair value of acquired inventory and deferred revenue, changes in fair value of contingent consideration, deferred compensation and restricted stock expenses.

2024 Adj. EBITDA Guidance Reconciliation

	Full Year 2024	
	Low	High
Net earnings	**$243**	**$248**
Add: Income tax expense	79	84
Earnings before income taxes	**$323**	**$332**
Add: Interest expense	40	42
Add: Other non-operating (income), net	(7)	(6)
Operating income	**$356**	**$368**
Add: RIP expense[1]	2	4
Adjusted operating income	**$359**	**$371**
Add: Depreciation and amortization	$90	$100
Adjusted EBITDA	**$450**	**$470**

2024 Adj. Free Cash Flow Guidance Reconciliation

	Full Year 2024	
	Low	High
Net cash provided by operating activities	**$270**	**$285**
Add: Return of investment from joint venture	85	95
Adjusted net cash provided by operating activities	**$355**	**$380**
Less: Capital expenditures	(80)	(90)
Adjusted Free Cash Flow	**$275**	**$290**

2024 Adj. Diluted EPS Guidance Reconciliation

	Full Year 2024	
	Low	High
Net earnings	**$243**	**$248**
Add: Income tax expense	79	84
Earnings before income taxes	**$323**	**$332**
Add: RIP (credit)[2]	(3)	(1)
Add: Acquisition-related amortization[3]	7	8
Adjusted earnings before income taxes	**$327**	**$339**
Less: Adjusted income tax expense[4]	(81)	(84)
Adjusted net earnings	**$246**	**$255**
Diluted net earnings per share[5]	**$5.55**	**$5.77**
Adjusted diluted net earnings per share[5]	**$5.60**	**$5.90**

1. RIP expense represents only the plan service cost related to the RIP that is recorded within Operating Income. We do not expect to make cash contributions to our RIP.
2. RIP (credit) represents the entire actuarial net periodic pension (credit) recorded as a component of Net earnings. We do not expect to make cash contributions to our RIP.
3. Represents acquisition-related intangible amortization, including customer relationships, developed technology, software, trademarks and brand names, non-compete agreements and other intangibles.
4. Adjusted income tax expense is based on an adjusted effective tax rate of ~25%, multiplied by adjusted earnings before income tax.
5. Based on ~43 to 44 million shares outstanding.