annual report
2024

AMETEK®

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ENGINEERING SOLUTIONS THAT MATTER

Complex problems demand smart solutions. AMETEK delivers cutting-edge technologies that drive progress across industries.

Engineering the next generation of aerospace innovations that safely get us where we need to go. Pushing the limits of scientific research leading to breakthrough discoveries. Enabling businesses and factories to operate more productively. Ensuring efficient and reliable energy production and supply around the world. Advancing critical medical technologies designed to save and improve lives.

Across all industries and applications, we are delivering breakthrough technology solutions that move the world forward every day.

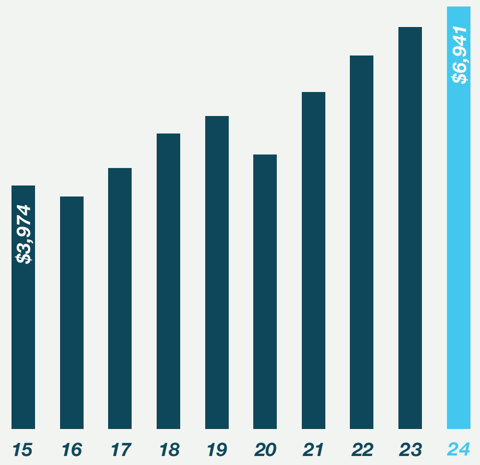
FINANCIAL HIGHLIGHTS

($ in millions, except per share amounts)

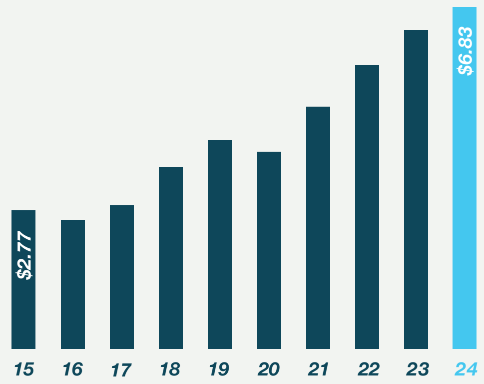
Year Ended December 31	**2024**	2023	2022	2021	2020
Net Sales	**$ 6,941.2**	$ 6,597.0	$ 6,150.5	$ 5,546.5	$ 4,540.0
Operating Income	**$ 1,808.8**	$ 1,707.5	$ 1,500.7	$ 1,308.7	$ 1,071.8
Net Income	**$ 1,398.3**	$ 1,313.2	$ 1,159.5	$ 990.1	$ 796.5
Adjusted Diluted Earnings per Share	**$ 6.83**	$ 6.38	$ 5.68	$ 4.85	$ 3.95
Dividends Declared and Paid per Share	**$ 1.12**	$ 1.00	$ 0.88	$ 0.80	$ 0.72
Operating Income Margin	**26.1%**	25.9%	24.4%	23.6%	23.6%
EBITDA	**$ 2,180.9**	$ 2,014.7	$ 1,829.7	$ 1,594.3	$ 1,421.6
EBITDA Margin	**31.4%**	30.5%	29.7%	28.7%	31.3%
Free Cash Flow	**$ 1,701.7**	$ 1,599.1	$ 1,010.4	$ 1,049.8	$ 1,206.8
At December 31					
Total Debt	**$ 2,079.7**	$ 3,313.3	$ 2,385.0	$ 2,544.2	$ 2,413.7
Net Debt	**$ 1,705.7**	$ 2,903.5	$ 2,039.6	$ 2,197.4	$ 1,200.9
Total Debt/EBITDA	**0.9x**	1.5x	1.2x	1.5x	1.7x
Stockholders' Equity	**$ 9,655.3**	$ 8,730.2	$ 7,476.5	$ 6,871.9	$ 5,949.3
Shares Outstanding (in millions)	**230.7**	230.9	230.1	231.7	230.5

Note: This table and other financial measures in this report include non-GAAP (generally accepted accounting principles) results. Please visit the Investors section of ametek.com for a reconciliation of GAAP to non-GAAP results.

Net Sales *(in millions)*



Adjusted Diluted Earnings per Share



LETTER TO SHAREHOLDERS

AMETEK delivered strong results in 2024, highlighting the strength and flexibility of our distributed operating structure, the long-term success of the AMETEK Growth Model, and the resilience of our world-class workforce.

Despite challenging macroeconomic conditions, AMETEK achieved records in 2024 for sales, operating income, operating margins, earnings per share, EBITDA and cash flows. Our operating capabilities allowed us to react quickly to changing market dynamics and achieve meaningful margin expansion, impressive free cash flow to net income conversion, and strong earnings growth.

In 2024, AMETEK's sales were $6.9 billion, up 5% over 2023. Operating income was $1.8 billion, an increase of 6%, and operating margins were outstanding at 26.1%. Adjusted earnings per diluted share were $6.83, an increase of 7%. Earnings before interest, taxes, depreciation, and amortization (EBITDA) was $2.2 billion, an increase of 8% compared to the prior year, with EBITDA margins an impressive 31.4%. Free cash flow was exceptional, increasing 6% year over year to $1.7 billion. Free cash flow to net income conversion was a strong 124%, providing us with meaningful capital to support our growth initiatives.

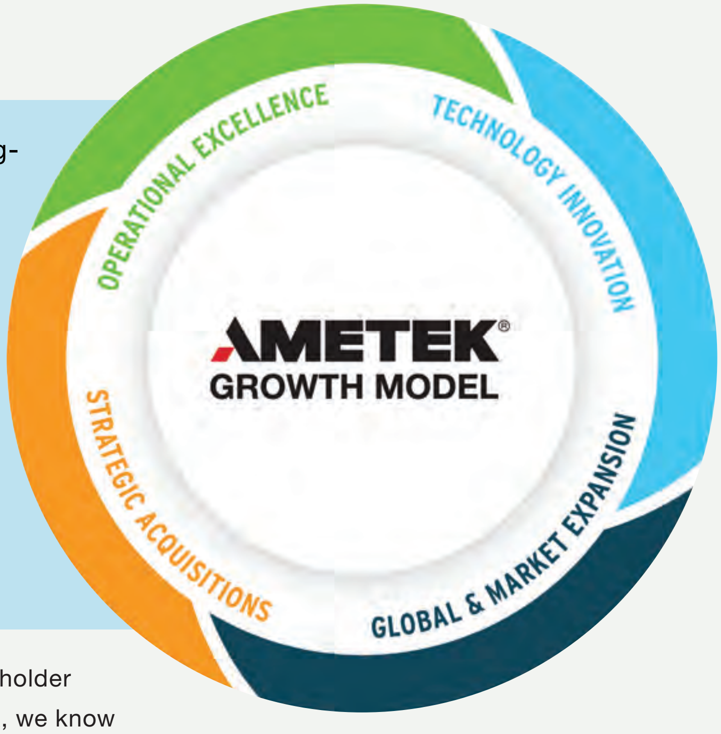
Total Shareholder Return
(as of February 28, 2025)

Throughout the year, our businesses effectively navigated macroeconomic headwinds and delivered excellent results, while positioning AMETEK for strong growth as those headwinds subside.

Our continued success is fueled by our dedication to being the best at everything we do, and our unwavering commitment to solving our customers' most challenging problems.

The AMETEK Growth Model

The AMETEK Growth Model highlights the long-term strategies that drive our success. This visual highlights our four key strategies—**Operational Excellence, Technology Innovation, Global & Market Expansion, and Strategic Acquisitions.** Combined with a disciplined approach to cash flow generation, capital deployment, and talent development, these elements are deeply embedded across our businesses, providing a consistent framework for growth.



Decades of continued, sustainable growth and shareholder value creation do not happen by chance. At AMETEK, we know lasting success requires a focused and disciplined commitment to continuous improvement. The AMETEK Growth Model provides our businesses with scalable tools and strategies that help drive excellent results across economic cycles, while continually positioning AMETEK for long-term success.

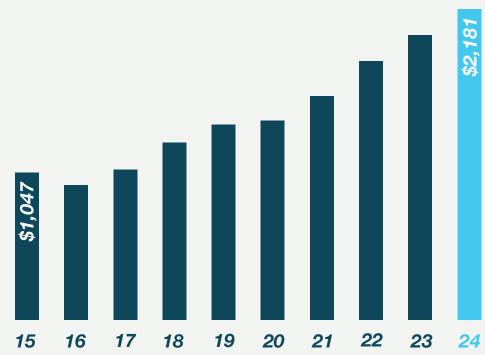
For decades, AMETEK has delivered sustainable sales growth that translates into outstanding margin expansion, robust cash flows, and excellent earnings growth for shareholders. AMETEK's Growth Model supports our long-term growth algorithm—targeting high single-digit sales growth and double-digit EPS growth annually across the business cycle. I am proud of our colleagues' tremendous contributions in delivering on these growth objectives.

Operational Excellence

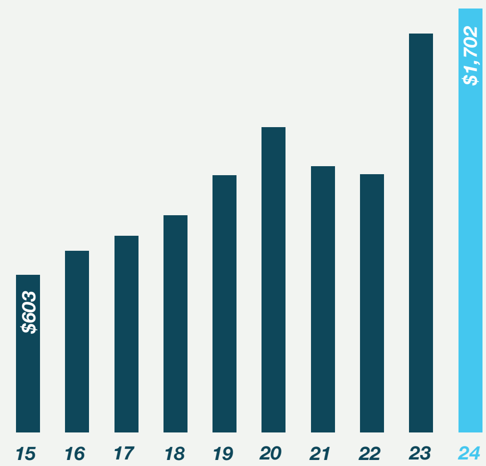
Operational Excellence is the cornerstone of the AMETEK Growth Model, providing a consistent approach to continuously improving our business processes and operations. By fostering a culture of continuous improvement, we drive efficiency, enhance quality, and deliver superior value to our customers and shareholders.

In 2024, AMETEK achieved more than $150 million in operational efficiencies through our continuous improvement initiatives. The success of our Operational Excellence strategy allows us to invest meaningfully in our businesses, supporting our long-term growth and innovation.

EBITDA *(in millions)*



Free Cash Flow *(in millions)*



The strength and flexibility of our Operational Excellence strategy allow our businesses to effectively manage their organizations during challenging macroeconomic environments, and deliver strong margins, earnings, and cash flow growth.

Technology Innovation

Our customers depend on AMETEK to deliver the technology solutions they need to succeed. Technology Innovation is critical to AMETEK's success as it positions our businesses as leaders in the niche markets they serve. Our highly differentiated technology solutions support expansion into attractive markets while enhancing organic growth across all our applications and markets.

In 2024, AMETEK invested $90 million in incremental growth investments to ensure our businesses are well positioned for growth, with a sizeable portion of this incremental investment in research, development and engineering (RD&E). Overall, we spend approximately 5.5% of sales on RD&E, underscoring our dedication to advancing next-generation technology solutions that enhance customer success and drive long-term growth.

As a result of this investment and the excellent work of our teams, AMETEK achieved a record Vitality Index of 27% in 2024, which reflects sales generated from new products introduced over the last three years.

Global & Market Expansion

Global & Market Expansion establishes a strategic commercial excellence framework that enhances our customer-centric commercial offerings.

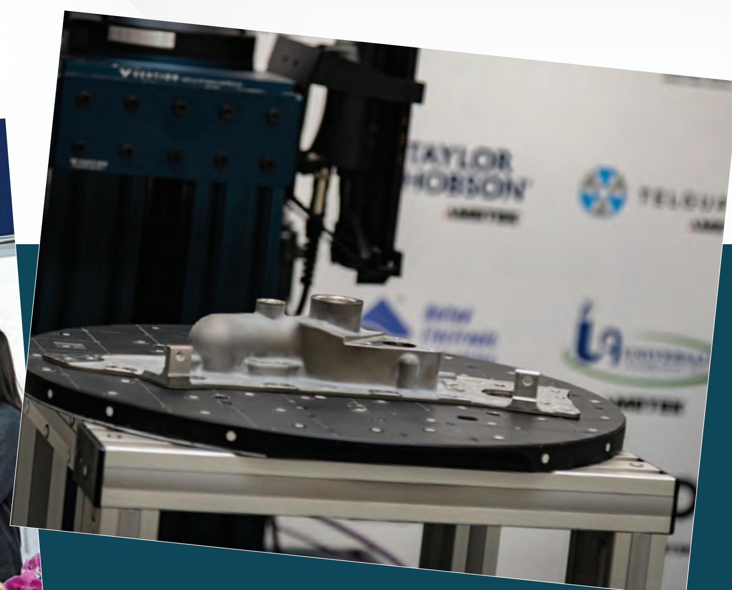
Our initiatives focus on identifying attractive new niche markets and applications for our products while leveraging our global scale and organizational structure to drive growth. These efforts strengthen our long-term competitiveness and success in key industries.

Global & Market Expansion has been a key driver of new opportunities, delivering results and accelerating organic growth over the past decade.

Strategic Acquisitions

At AMETEK, Strategic Acquisitions are a core element of our strategy that allows us to identify and acquire outstanding businesses with highly differentiated technologies and leading positions in their niche markets.

Acquisitions provide AMETEK with broader exposure to higher growth businesses in attractive markets like aerospace, medical, energy, and research. Our newly acquired businesses strengthen our overall offerings to the markets we serve.



AMETEK recently opened two new facilities designed to enhance the customer experience and drive a collaborative approach to innovation. The new centers, strategically located in Ho Chi Minh City, Vietnam and Milan, Italy, add to AMETEK's global capabilities, while providing localized service and expertise for customers.

Additionally, we integrate acquired companies into the AMETEK Growth Model, providing them with the opportunity to benefit from our scale and global reach to accelerate their growth, improve profitability and drive strong returns on our capital.

In October, AMETEK acquired **Virtek Vision International,** a leading provider of advanced laser-based projection and inspection systems, which joined AMETEK as a part of our Electronic Instruments Group (EIG).

In October, AMETEK's CAMECA business acquired **Polygon Physics,** a leader in ion source technology, providing CAMECA with important technology to help advance AMETEK's metrology capabilities.

Acquisitions are targeted with a long-term focus on enhancing the quality of our portfolio and exposure to attractive growth markets. Our disciplined, systematic approach to acquisitions allows AMETEK to identify, evaluate, and integrate new businesses to ensure outstanding returns for shareholders.

These four strategies power the AMETEK Growth Model and are reinforced by our disciplined approach to cash flow generation and capital deployment, along with our commitment to talent development.

Sustainability

At AMETEK, we remain focused on delivering outstanding shareholder returns while creating a sustainable future for our stakeholders. We are committed to minimizing our environmental footprint by reducing the energy and water we use and lowering the emissions we produce.

When it comes to the environment, we develop differentiated technology solutions that support broader sustainability initiatives.

In 2024, AMETEK proudly recognized our Engineered Interconnect and Packaging (EIP) business as the winner of the Elizabeth R. Varet Sustainability Award for their achievements in driving sustainability best practices and reducing their environmental impact. EIP's efforts resulted in water consumption reduction of 27%, in addition to reducing greenhouse gas emissions by 141 metric tons.

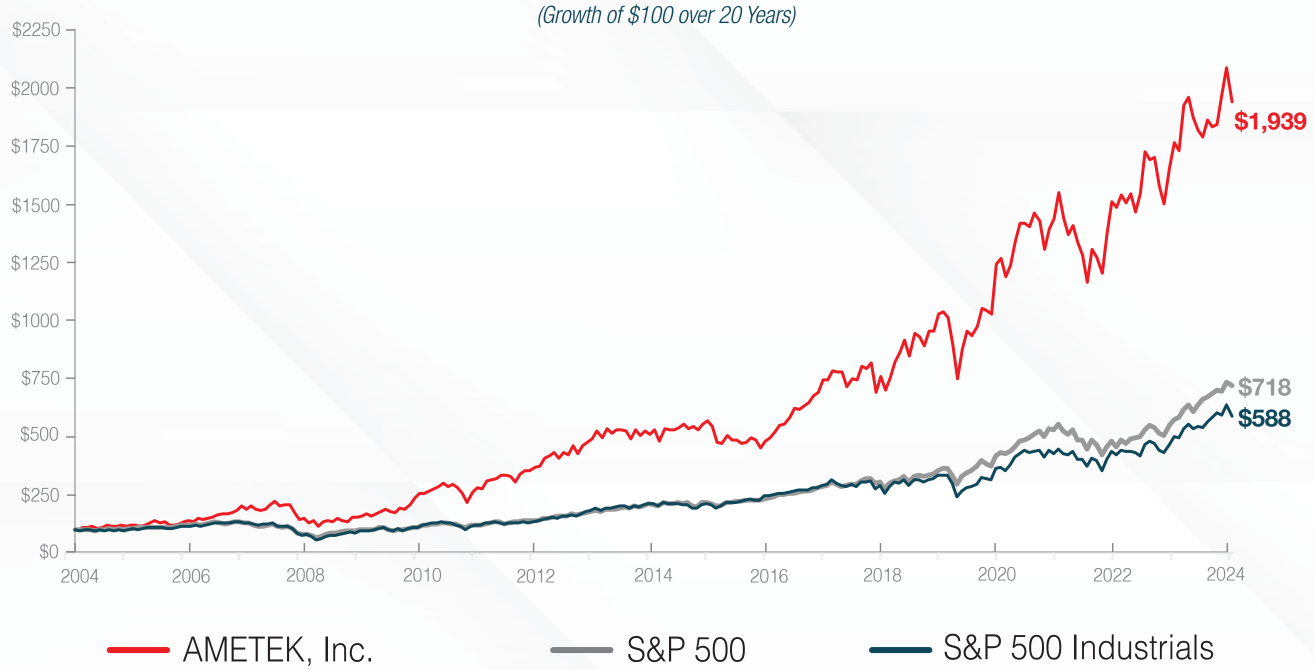
In 2025, we will be releasing our latest AMETEK Sustainability Report which will detail the excellent progress we are making toward our long-term emissions reduction target.

ELIZABETH R. VARET
sustainability award

AMETEK®
ENGINEERED INTERCONNECT
AND PACKAGING

Total Shareholder Return

(Growth of $100 over 20 Years)



The chart compares the performance of $100 invested in AMETEK, Inc., on 12/31/2004, including reinvestment of dividends, against the S&P 500 and the S&P 500 Industrials. The 20-year compound annual growth rate for AMETEK's total return to shareholders is 16%.

Looking Ahead

As we look ahead to 2025 and beyond, AMETEK's diversified portfolio and flexible operating structure position us well to manage short-term uncertainties and capitalize on long-term growth opportunities with a disciplined execution of our Growth Model.

AMETEK will build on its success through continued investment in innovation, enhanced customer engagement, and the strategic deployment of growth capabilities including digitalization, voice of customer insights, and growth kaizens.

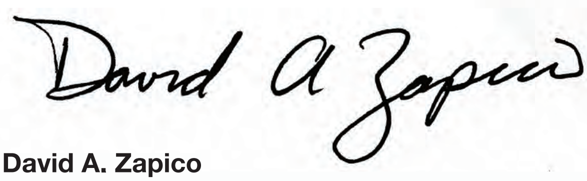
AMETEK's world-class Operational Excellence capabilities will remain a critical component that will help improve margins, drive impressive cash flow, and fund growth.

AMETEK is focused on strengthening our portfolio and delivering shareholder value by acquiring industry-leading businesses that align with our strategic vision. We have a strong balance sheet and robust cash flows to support our acquisition strategy.

AMETEK is committed to delivering outstanding results through disciplined growth and execution, so that together, we can make a safer, sustainable, and more productive world a reality.

I would like to thank my AMETEK colleagues for their dedication and contributions to delivering strong results in 2024.

I would also like to thank our shareholders for your continued support and confidence in AMETEK.



David A. Zapico
Chairman of the Board & Chief Executive Officer

AMETEK is a leading global provider of industrial technology solutions with approximately 21,500 colleagues across our global network of operating, sales, service and support locations in 31 countries around the world. Founded in 1930, AMETEK has been listed on the NYSE for 95 years and is headquartered in Berwyn, Pennsylvania.

AMETEK'S OPERATING GROUPS

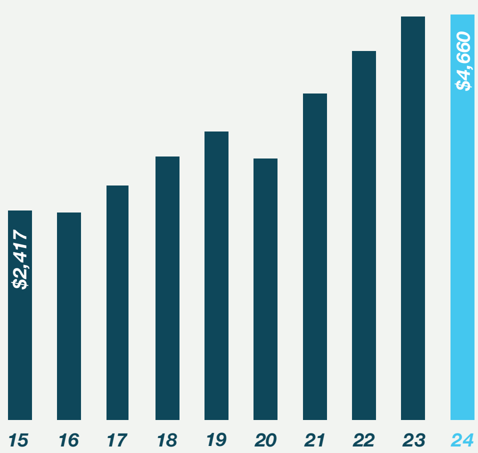
Electronic Instruments Group (EIG)

EIG is a worldwide leader in the design and manufacturing of advanced analytical, test and measurement instrumentation for aerospace, medical, power, energy, research and industrial markets.

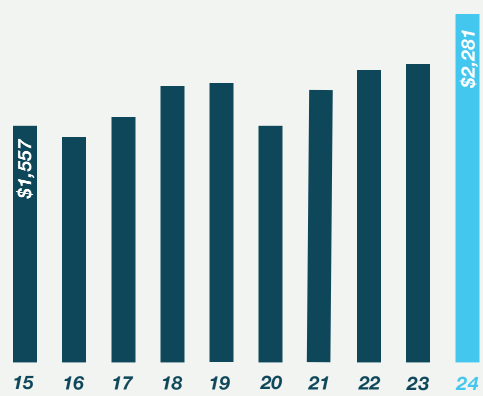
Electromechanical Group (EMG)

EMG is a leader in the design and manufacturing of highly engineered medical components and devices, automation solutions, thermal management systems, specialty metals and electrical interconnects.

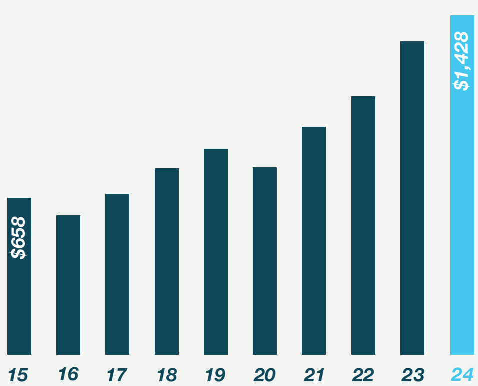
EIG Sales *(in millions)*



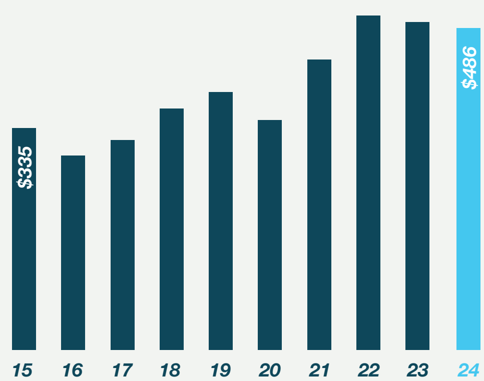
EMG Sales *(in millions)*



EIG Operating Income *(in millions)*



EMG Operating Income *(in millions)*



DIRECTORS & OFFICERS

Board of Directors


Thomas A. Amato


Tod E. Carpenter

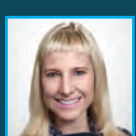

Anthony J. Conti


Steven W. Kohlhagen


Gretchen W. McClain


Karleen M. Oberton

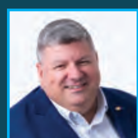

Dean Seavers


Suzanne L. Stefany

Corporate Executive Office

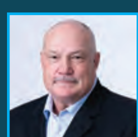

David A. Zapico


Dalip M. Puri


Tony J. Ciampitti


John Wesley Hardin


David F. Hermance


Thomas C. Marecic


Ronald J. Oscher


Emanuela Speranza

Board of Directors

Thomas A. Amato
President and Chief Executive Officer, TriMas Corporation

Tod E. Carpenter
Chairman, President and Chief Executive Officer, Donaldson Company, Inc.

Anthony J. Conti
Retired Partner, PricewaterhouseCoopers LLP

Steven W. Kohlhagen
Retired Financial Executive

Gretchen W. McClain
President and Chief Executive Officer, J.M. Huber Corporation

Karleen M. Oberton
Chief Financial Officer, Hologic, Inc.

Dean Seavers
Former President of National Grid US and Executive Director of National Grid plc

Suzanne L. Stefany
Senior Advisor, PJT Partners

David A. Zapico
Chairman of the Board and Chief Executive Officer

Corporate Executive Office

David A. Zapico
Chairman of the Board and Chief Executive Officer

Dalip M. Puri
Executive Vice President and Chief Financial Officer

Tony J. Ciampitti
President, Electronic Instruments

John Wesley Hardin
President, Electronic Instruments

David F. Hermance
President, Electromechanical Group

Thomas C. Marecic
President, Electronic Instruments

Ronald J. Oscher
Chief Administrative Officer

Emanuela Speranza
Chief Commercial Officer

Corporate Officers

Robert S. Feit
Senior Vice President, General Counsel and Corporate Secretary

Thomas M. Montgomery
Senior Vice President and Comptroller

Robert J. Amodei
Vice President, Group Controller

Kevin C. Coleman
Vice President, Investor Relations and Treasurer

Nino DiPietro
Vice President, Group Controller

Francis J. Donnelly
Vice President, Group Controller

Corporate Officers, *cont.*

David A. Frank
Vice President, Taxation

Jennifer G. Hellberg
Vice President, Human Resources

John C. Henriques
Vice President, Corporate Development

John L. Hoffman III
Vice President, Audit Services

José Muñoz
Vice President, Operational Excellence

Brian A. Nash
Vice President, Group Controller

Mikael Näsström
Vice President, Commercial Excellence

Michael J. Pizzo
Vice President, Planning and Analysis

Robie Rideout Jr.
Vice President, Strategic Procurement

Mark R. Scheuer
Vice President, Environmental, Health and Safety

Jeffrey T. Stevens
Vice President, Financial Reporting

Isabel S. Wells
Vice President and Chief Information Officer

Operating Officers

William P. Callahan
Vice President and General Manager, Aerospace and Defense

Daniel J. Ketchum
Vice President and General Manager, Power Systems and Instruments

Keith J. Kowalski
Vice President and General Manager, Advanced Motion Solutions

Christoph J. Maetzig
Vice President and General Manager, Ultra Precision Technologies

Thomas J. Matway
Vice President and General Manager, Engineered Materials, Interconnects and Packaging

Vinatha Nathan
Vice President and General Manager, Measurement, Communications and Testing

Keith A. Reazin
Vice President and General Manager, Abaco

Daniel J. Skinner
Vice President and General Manager, Process and Analytical Instruments

Narayan Vishwanathan
Vice President and General Manager, Materials Analysis

Patrick L. Williams
Vice President and General Manager, Maintenance, Repair and Overhaul

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2024

or

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

For the transition period from to

Commission File Number 1-12981

AMETEK, Inc.

(Exact name of registrant as specified in its charter)

Delaware **(State or other jurisdiction of incorporation or organization)**	**14-1682544** **(I.R.S. Employer Identification No.)**
1100 Cassatt Road **Berwyn, Pennsylvania** **(Address of principal executive offices)**	**19312-1177** **(Zip Code)**

Registrant's telephone number, including area code: (610) 647-2121

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 Par Value (voting)	AME	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

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

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

The aggregate market value of the voting stock held by non-affiliates of the registrant was approximately $38.6 billion as of June 30, 2024, the last business day of the registrant's most recently completed second fiscal quarter.

The number of shares of the registrant's Common Stock outstanding as of January 31, 2025 was 230,659,382.

Documents Incorporated by Reference

Part III incorporates information by reference from the Proxy Statement for the Annual Meeting of Stockholders on May 7, 2025.

AMETEK, Inc.

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PART I

Item 1. Business

General Development of Business

AMETEK, Inc. (“AMETEK” or the “Company”) is incorporated in Delaware. Its predecessor was originally incorporated in Delaware in 1930 under the name American Machine and Metals, Inc. AMETEK is a leading global manufacturer of electronic instruments and electromechanical devices with operations in North America, Europe, Asia and South America. AMETEK maintains its principal executive offices at 1100 Cassatt Road, Berwyn, Pennsylvania, 19312. Listed on the New York Stock Exchange (symbol: AME), the common stock of AMETEK is a component of the Standard and Poor’s 500 and the Russell 1000 Indices.

Products and Services

AMETEK’s products are marketed and sold worldwide through two operating groups: Electronic Instruments (“EIG”) and Electromechanical (“EMG”). Electronic Instruments is a leader in the design and manufacture of advanced instruments for the process, power and industrial, and aerospace markets. Electromechanical is a differentiated supplier of precision motion control solutions, highly engineered medical components and devices, thermal management systems, specialty metals and electrical interconnects. Its end markets include aerospace and defense, medical, automation and other industrial markets.

Competitive Strengths

Management believes AMETEK has significant competitive advantages that help strengthen and sustain its market positions. Those advantages include:

Significant Market Share. AMETEK maintains significant market share in a number of targeted niche markets through its ability to produce and deliver high-quality, differentiated products at competitive prices. EIG has significant market positions in niche segments of the process, power and industrial, and aerospace markets. EMG holds significant positions in niche segments of the aerospace and defense, automation and medical markets.

Technological and Development Capabilities. AMETEK believes it has certain technological advantages over its competitors that allow it to maintain its leading market positions. Historically, the Company has demonstrated an ability to develop innovative new products and solutions that support customer needs. AMETEK has consistently added to its investment in research, development and engineering, and improved its new product development efforts with the adoption of Design for Six Sigma and Value Analysis/ Value Engineering methodologies. These have improved the pace and quality of product innovation and resulted in the introduction of a steady stream of new products across all of AMETEK’s businesses and aligned with attractive secular growth markets.

Efficient and Flexible Manufacturing Operations. Through its Operational Excellence initiatives, AMETEK has established a lean and flexible manufacturing platform for its businesses. In its effort to achieve best-cost manufacturing, AMETEK has operating facilities, as of December 31, 2024, in China, Czechia, Malaysia, Mexico, and Serbia. These facilities offer proximity to customers and provide opportunities for increasing international sales. Acquisitions also have allowed AMETEK to achieve operating synergies by consolidating operations, product lines and distribution channels, benefiting both of AMETEK’s operating groups.

Experienced Management Team. Another component of AMETEK’s success is the strength of its management team and that team’s commitment to improving Company performance. AMETEK senior management has extensive industry experience and an average of approximately 23 years of AMETEK service. The management team is focused on delivering strong, consistent and profitable growth, growing shareholder value, and creating a sustainable future for all stakeholders. Individual performance is tied to financial results through Company-established stock ownership guidelines and equity incentive programs.

Business Strategy

AMETEK is committed to achieving earnings growth through the successful implementation of the AMETEK Growth Model. The goal of the Growth Model is high single digit annual percentage growth in sales and double digit annual percentage growth in earnings per share over the business cycle, strong cash flow generation, and a superior return on total capital. Other financial initiatives have been or may be undertaken, including public and private debt or equity issuance, bank debt refinancing, local financing in certain foreign countries and share repurchases.

AMETEK's Growth Model integrates the four growth strategies of Operational Excellence, Strategic Acquisitions, Global and Market Expansion, and New Product Development with a focus on cash generation and capital deployment.

Operational Excellence. Operational Excellence is AMETEK's cornerstone strategy for accelerating growth, improving profit margins and strengthening its competitive position across its businesses. Operational Excellence focuses on initiatives to drive increased organic sales growth, improvements in operating efficiencies and sustainable practices. It emphasizes team building and a participative management culture. AMETEK's Operational Excellence strategies include lean manufacturing, global sourcing, Design for Six Sigma, Value Engineering/Value Analysis, growth kaizens, and digitalization. Each plays an important role in improving efficiency, enhancing the pace and quality of innovation and driving profitable sales growth. Operational Excellence initiatives have yielded lower operating and administrative costs, shortened manufacturing cycle times, resulted in higher cash flow from operations and increased customer satisfaction. They also have played a key role in achieving synergies with newly acquired companies.

Strategic Acquisitions. Acquisitions are a key to achieving the goals of the AMETEK Growth Model. Since the beginning of 2020 through December 31, 2024, AMETEK has completed 14 acquisitions with annualized sales totaling approximately $1.4 billion. AMETEK targets companies that offer a compelling strategic, technical and cultural fit. It seeks to acquire businesses in adjacent markets with complementary products and technologies. It also looks for businesses that provide attractive growth opportunities aligned with strong secular growth themes, often in new and emerging markets. AMETEK's management team has developed considerable skill in identifying, acquiring and integrating new businesses. As it has executed its acquisition strategy, AMETEK's mix of businesses has shifted toward those that are more highly differentiated and, therefore, offer better opportunities for growth and profitability.

Global & Market Expansion. AMETEK has experienced significant growth outside the United States, reflecting an expanding international customer base, investments in its global infrastructure and the attractive growth potential of its businesses in overseas markets. While Europe remains its largest overseas market, AMETEK has pursued growth opportunities worldwide, especially in key emerging markets. It has grown sales in Latin America and Asia by driving its global and market expansion strategy and initiatives. AMETEK also has expanded its sales, service, and engineering capabilities globally. Recently acquired businesses have further added to AMETEK's international presence.

New Product Development. New products are essential to AMETEK's long-term growth. As a result, AMETEK has maintained a consistent investment in new product development and engineering. AMETEK's businesses help solve our customers' most complex challenges with differentiated technology solutions. In 2024, AMETEK added to its highly differentiated product portfolio with a range of new products across many of its businesses.

AMETEK focuses on cash generation and capital deployment. AMETEK generates strong cash flow given its asset-light business model and strong operational execution. This cash flow supports AMETEK's capital deployment strategy with its primary focus on strategic, value-enhancing acquisitions. AMETEK is also committed to paying a consistently increasing cash dividend.

Attracting, retaining, and developing talent is critical to the success and sustainability of the AMETEK Growth Model as our employees are responsible for successfully driving these strategies.

2024 Overview

Operating Performance

In 2024, the Company posted record sales, operating income, net income, diluted earnings per share, and operating cash flow. The Company achieved these results from contributions from recent acquisitions, as well as the Company's Operational Excellence initiatives. See "Results of Operations" in Part II, Item 7 Management's Discussion and Analysis of Financial Condition and Results of Operations for further details.

In 2024, the Company achieved record sales of $6,941.2 million, an increase of 5.2% from 2023. Diluted earnings per share for 2024 were a record $5.93, an increase of $0.26 or 4.5%, compared with $5.67 per diluted share in 2023.

Recent Acquisitions

AMETEK spent $117.5 million in cash in October 2024, net of cash acquired, to purchase Virtek Vision International ("Virtek"), a leading provider of advanced laser-based projection and inspection systems.

Financing

In the third quarter of 2024, the Company paid in full, at maturity, a $300 million in aggregate principal amount of 3.73% senior notes.

Recently Adopted Accounting Pronouncement

In November 2023, the FASB issued ASU No. 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures (“ASU 2023-07”), which requires disclosure of significant segment expenses and other segment items on an annual and interim basis under ASC 280. The Company retrospectively adopted ASU 2023-07, effective December 31, 2024, and the adoption resulted in additional disclosures in the Reportable Segments footnote.

Description of Business

Described below are the products and markets of each reportable segment:

EIG

EIG is a leader in the design and manufacture of advanced analytical, test and measurement instruments for the process, aerospace, medical, research, power and industrial markets.

EIG is a leader in many of the specialized markets it serves. Products supplied to these markets include process control instruments for the life sciences, pharmaceutical, semiconductor, automation, power, food and beverage, oil and gas, and petrochemical industries. It provides a growing range of instruments to the research and laboratory equipment, ultra-precision manufacturing, optics, medical, and test and measurement markets. It is a leader in power quality monitoring and metering, uninterruptible power systems, programmable power equipment, electromagnetic compatibility test equipment, sensors for gas turbines, dashboard instruments for heavy trucks, and instrumentation and controls for the food and beverage industries. EIG supplies the aerospace industry with aircraft and engine sensors, monitoring systems, embedded computing systems, power supplies, fuel and fluid measurement systems, and data acquisition systems.

In many instances, EIG's products differ from or are technologically superior to its competitors' products. EIG has achieved competitive advantage through continued investment in research, development and engineering to develop market-leading products and solutions that serve niche markets.

In 2024, 51% of EIG's net sales were to customers outside the United States. At December 31, 2024, EIG employed approximately 11,600 people, of whom approximately 900 were covered by collective bargaining agreements. At December 31, 2024, EIG had operating facilities in the United States, the United Kingdom, Germany, Canada, Denmark, Finland, France, Switzerland, Argentina, Austria, Serbia, and Mexico. EIG also shares operating facilities with EMG in China, Serbia, and Mexico.

Process and Analytical Instrumentation Markets and Products

Process and analytical instrumentation sales represented 69% of EIG's 2024 net sales. These businesses include process analyzers, emission monitors and spectrometers; elemental and surface analysis instruments; level, pressure and temperature sensors and transmitters; radiation measurement devices; level measurement devices; precision manufacturing systems; materials- and force-testing instruments; contact and non-contact metrology products; and clinical and educational communication solutions. Among the industries it serves are power generation; pharmaceutical manufacturing; medical and healthcare; research and development; water and waste treatment; renewable energy production, semiconductor manufacturing; natural gas distribution; emissions monitoring, and oil, gas, and petrochemical refining. Its instruments are used for precision measurement in a number of applications, including radiation detection, trace element and materials analysis, nanotechnology research, ultraprecise manufacturing, advanced optical metrology, and test and measurement.

Acquired in October 2024, Virtek is a leading provider of advanced laser-based projection and inspection systems. Virtek's advanced 3D laser projectors, smart cameras, and quality control inspection systems complement the Company's existing Creaform business capabilities.

Aerospace and Power Instrumentation Markets and Products

Aerospace and Power Instrumentation sales represented 31% of EIG's 2024 net sales. These businesses produce a wide array of instrumentation, systems and sensors for applications in the aerospace, power and industrial markets.

These businesses produce power monitoring and metering instruments, uninterruptible power supply systems and programmable power supplies used in a wide range of industrial settings. It is a leader in the design and manufacture of power measurement, quality monitoring and event recorders for use in power generation, transmission and distribution. These businesses provide uninterruptible power supply systems, multifunction electric meters, and highly specialized communications equipment for smart grid applications and renewable energy applications. It also offers precision power supplies and power conditioning products, and electrical immunity and EMC test equipment, sensors for electric vehicle testing, gas turbines, dashboard instruments for heavy trucks and other vehicles, and instrumentation and controls for the food and beverage industries.

AMETEK's aerospace products are designed to customer specifications and manufactured to stringent operational and reliability requirements. These products include airborne data systems, turbine engine temperature measurement products, vibration-monitoring systems, cockpit instruments and displays, fuel and fluid measurement products, embedded computing systems, and sensors and switches. AMETEK serves all segments of the commercial and military aerospace market, including commercial airliners, business jets, regional aircraft and helicopters.

AMETEK operates in highly specialized aerospace market segments in which it has proven technological or manufacturing advantages versus its competition. Among its more significant competitive advantages is its 70-year-plus reputation as an established aerospace supplier. AMETEK has long-standing relationships with the world's leading commercial and military aircraft, jet engine and original equipment manufacturers and aerospace system integrators. AMETEK also is a leading provider of spare part sales, repairs and overhaul services to commercial aerospace.

Acquired in October 2023, Amplifier Research is a leading provider of amplifiers and electromagnetic compatibility testing equipment. Amplifier Research's diverse product portfolio complements the Company's existing capabilities in the electromagnetic compatibility testing market.

Acquired in August 2023, UEI is a designer and manufacturer of high-performance test, measurement, simulation and control solutions. UEI's innovative solutions complement the Company's existing testing and data acquisition expertise.

Customers

EIG is not dependent on any single customer such that the loss of that customer would have a material adverse effect on EIG's operations. Approximately 6% of EIG's 2024 net sales were made to its five largest customers. No single customer comprises more than 2% of net sales.

EMG

EMG is a leader in the design and manufacture of highly engineered medical components and devices, automation solutions, thermal management systems, specialty metals and electrical interconnects. EMG is a leader in many of the niche markets in which it competes. Products supplied to these markets include single-use and consumable surgical instruments, implantable components, and drug delivery systems used across a wide range of medical applications, advanced precision motion control solutions, which are used in a wide range of automation applications across the medical, semiconductor, aerospace, defense, and food and beverage industries, as well as highly engineered electrical connectors and electronics packaging used in aerospace and defense, medical, and industrial applications.

EMG supplies high-purity powdered metals, strip and foil, specialty clad metals and metal matrix composites. EMG's heat exchangers provide electronic cooling and environmental control for the aerospace and defense and semiconductor industries. EMG's motors are widely used in commercial appliances, food and beverage machines, hydraulic pumps and industrial blowers. Additionally, EMG operates a global network of aviation maintenance, repair and overhaul ("MRO") facilities.

EMG designs and manufactures products that, in many instances, are significantly different from or technologically superior to competitors' products. It has achieved competitive advantage through continued investment in research, development and engineering, efficiency improvements from operational excellence, acquisition synergies and improved supply chain management.

In 2024, 41% of EMG's net sales were to customers outside the United States. At December 31, 2024, EMG employed approximately 9,500 people, of whom approximately 2,300 were covered by collective bargaining agreements. At December 31, 2024, EMG had operating facilities in the United States, the United Kingdom, China, Germany, France, Italy, Poland, Mexico, Serbia, Czechia, Malaysia, and Taiwan. EMG also shares operating facilities with EIG in China, Serbia, and Mexico.

Automation and Engineered Solutions Markets and Products

Automation and Engineered Solution sales represented 73% of EMG's 2024 net sales. These businesses produce precision motion control solutions, brushless motors, blowers and pumps, heat exchangers and other electromechanical systems. These products are used in a wide variety of high-precision automation applications, including semiconductor equipment, and laboratory and medical equipment.

AMETEK is a leader in highly engineered single-use and consumable surgical instruments, implantable components and drug delivery systems. Its electrical connectors and electronics packaging are designed specifically for harsh environments and highly customized applications, and are used to protect sensitive devices and mission-critical electronics. In addition, AMETEK is an innovator and market leader in specialized metal powder, strip, wire and bonded products used in medical, aerospace and defense, telecommunications, automotive and general industrial applications.

Acquired in March 2023, Bison is a designer and manufacturer of custom motion control solutions. Bison's engineering expertise and broad product portfolio complement the Company's existing motion control and automation solutions business.

Acquired in December 2023, Paragon is a leading provider of highly engineered medical components and instruments. Paragon's product portfolio includes single-use and consumable surgical instruments and implantable components sold to a diverse blue-chip customer base of leading medical device manufacturers. Paragon expands the Company's presence in the MedTech space and provides access to new market segments with strong growth rates.

Aerospace Markets and Products

Aerospace sales represented 27% of EMG’s 2024 net sales. These businesses produce motor-blower systems and heat exchangers used in thermal management and other applications on a variety of military and commercial aircraft and military ground vehicles. In addition, these businesses provide the commercial and military aerospace industry with third-party MRO services on a global basis with facilities in the United States, Europe and Asia.

Customers

EMG is not dependent on any single customer such that the loss of that customer would have a material adverse effect on EMG’s operations. Approximately 14% of EMG’s 2024 net sales were made to its five largest customers. No single customer comprises greater than 4% of net sales.

Marketing

AMETEK’s marketing efforts generally are organized and carried out at the business level. EIG makes use of specialized distributors and sales representatives to market its products along with a direct sales force for its technically sophisticated products. Within aerospace, the specialized customer base of aircraft and jet engine manufacturers is served primarily by direct sales engineers. Given the technical nature of its many products, as well as its significant market share, EMG conducts much of its domestic and international marketing activities through a direct sales force and makes some use of sales representatives and distributors, both in the United States and in other countries.

Competition

In general, AMETEK’s markets are highly competitive with competition based on technology, performance, quality, service and price.

In EIG’s markets, AMETEK believes it ranks as a leader in certain analytical measurement and control instruments, and power and industrial markets. It also is a major instrument and sensor supplier to commercial aviation. In process and analytical instruments, numerous companies compete in each market on the basis of product quality, performance and innovation. In power and industrial and in aerospace, AMETEK competes with a number of companies depending on the specific market segment.

EMG’s businesses compete with a number of companies in each of its markets. Competition is generally based on product innovation, performance and price. There also is competition from alternative materials and processes.

Availability of Raw Materials

AMETEK’s reportable segments obtain raw materials and supplies from a variety of sources and generally from more than one supplier. For EMG, however, certain items, including various base metals and certain steel components, are available from only a limited number of suppliers. AMETEK believes its sources and supplies of raw materials are adequate for its needs.

Environmental and Other Governmental Regulation

AMETEK's operations and properties are subject to laws and regulations relating to environmental protection, including those governing air emissions, water discharges, waste management, and workplace safety. The Company uses, generates and disposes of hazardous substances and waste in its operations and could be subject to material liabilities relating to the investigation and clean-up of contaminated properties and related claims. The Company is required to conform our operations and properties to these laws and adapt to regulatory requirements in all countries as these requirements change. The Company has a robust Environmental Health and Safety program responsible for supporting its environmental monitoring and compliance efforts. In connection with acquisitions, the Company will assess potential material environmental liabilities, and determine regulatory and fiduciary obligations during the course of the due diligence process. In addition, new laws and regulations, the discovery of previously unknown contamination or the imposition of new requirements could increase costs or subject AMETEK to new or increased liabilities.

Information with respect to environmental matters is set forth in Note 13 to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Patents, Licenses and Trademarks

AMETEK owns numerous unexpired U.S. and foreign patents, including counterparts of its more important U.S. patents, in the major industrial countries of the world. It is a licensor or licensee under patent agreements of various types, and its products are marketed under various registered and unregistered U.S. and foreign trademarks and trade names. AMETEK, however, does not consider any single patent or trademark, or any group of them, essential either to its business as a whole or to either one of its reportable segments. The annual royalties received or paid under license agreements are not significant to either of its reportable segments or to AMETEK’s overall operations.

Sustainability and Human Capital Management

Sustainability

AMETEK is committed to providing a consistent and excellent return to our stakeholders, all while maintaining a strong commitment to environmental stewardship, social responsibility, inclusion, and sound corporate governance. We believe that effectively prioritizing and managing our sustainability initiatives will help create long-term value and a better future for our stakeholders.

Our Sustainability Report highlights our sustainability initiatives and is available on our website at https://www.ametek.com/who-we-are/sustainability.

Key elements in the Company’s approach to sustainability include the following:

Core Values. Our core values — Ethics and Integrity, Respect for the Individual, Inclusion, Teamwork, and Social Responsibility — remain the most critical components of our sustainability efforts. Sustainability is an integral aspect of the core values that guide the way we do business.

Upholding Sound Governance. Our commitment to transparency, accountability, and ethical and responsible decision-making is demonstrated through our core values, corporate governance structure, compliance measures, and focus on sustainability oversight. Together, AMETEK’s governance structure underpins our distributed operating structure and provides our colleagues with the foundation to advance sustainability initiatives across their businesses.

Protecting Our Environment. Our ongoing commitment to serve as environmental stewards and protect the environment for future generations is reflected in our proactive approach to environmental management and sustainability. From emissions reduction initiatives to optimizing resource consumption, we emphasize environmental protection in every facet of our operations. We are firmly committed to reducing our carbon footprint and have made outstanding progress toward our stated greenhouse gas emissions reduction target.

Investing in Our People. Our people are the most essential resource in driving AMETEK's long-term success and in achieving our sustainability ambitions. AMETEK is committed to developing an inclusive culture to help power innovation, growth, and greater opportunities for all employees. Through strategic investments in talent acquisition, learning and development, and employee well-being, we foster a culture of empowerment, innovation, and inclusivity, driving our collective success and sustainable growth. We are continually expanding our employee development, engagement, and training initiatives to provide meaningful opportunities for personal and professional development.

Driving Sustainable Product Solutions. AMETEK is committed to advancing a low-carbon economy. Our growing portfolio of clean technology and sustainability-related solutions includes a wide range of products and solutions that have a positive, global environmental impact across a broad set of diverse end markets, supporting customers in achieving their sustainability goals and creating a more sustainable future. Through collaborative partnerships with our customers, we develop solutions which help reduce carbon emissions, promote renewable energy adoption, improve efficiency and productivity, and improve healthcare outcomes.

Partnering with Our Communities. We cultivate strong and lasting relationships with the communities in which we operate, actively contributing to their social and economic prosperity. Our charitable arm, the AMETEK Foundation, provides wide-ranging support to non-profit and educational organizations. Through employee volunteerism, financial support, and contributions from the AMETEK Foundation, we partner to strengthen the work of non-profit charities around the world.

Human Capital Management

As a global organization, we have seen firsthand that the innovation needed to solve our customers' biggest challenges can only come from employees that are fully engaged and committed, and who have diverse perspectives and backgrounds. Our Board regularly receives updates and presentations on key topics, including sustainability, compliance, inclusion, and employee development and succession.

Our executive management team reviews the key talent across our company and assesses the adequacy of talent to meet business challenges and future growth needs. We have an active Inclusion Council, which drives initiatives focused on mentorship, education and career guidance.

We have created a leadership development program for employees on track to become P&L leaders in the company. This focused and intensive program involves both internal and external training on leadership effectiveness as well as specific job-related skills. In addition, participants receive hands-on experience in key AMETEK business system processes such as growth kaizens and acquisition due diligence. We have a long-standing commitment to responsible corporate conduct. Each employee is provided with annual performance goals which are reviewed in a performance review with their manager. Employee feedback is actively encouraged through an open-door policy for all managers, regular town hall/all hands meetings, executive presentations with Q&A sessions, a regular CEO podcast for all employees, and a hotline that can be used to report complaints.

Giving back to our community is an important part of our culture. Established in 1960, the AMETEK Foundation's mission is to empower AMETEK colleagues making a positive impact in their local communities, with a focus on health and welfare, civic and social service programs, and education.

As of December 31, 2024, we have approximately 21,500 employees. Our compensation programs are designed to provide competitive salaries and benefit programs to attract, retain and motivate a world-class workforce. Selected employees participate in short and long-term incentive programs that align employee and shareholder interests and promote long-term retention. Additionally, we strive to protect health and safety in every aspect of our enterprise – from the way we design, manufacture and deliver our products to the way our customers use them. We continue to drive towards our goal of zero lost-time work incidents. In 2024, we achieved a lost-time incident rate that was significantly below the industry average. We continue to enhance our safety initiatives as each facility is tasked with identifying opportunities for additional safety measures. Businesses with zero incidents share best practices and ensure ongoing training to maintain their safety excellence. In addition to our EHS facility audits, our facilities include safety committees, continual training, documented self-audits, and behavior-based safety observations and feedback.

Our U.S. Federal Employment Information Report (EEO-1) for 2023 is available at www.ametek.com.

Available Information

AMETEK's annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934 are made available free of charge on the Company's website at www.ametek.com in the "Investors – Reporting" section as soon as reasonably practicable after such material is electronically filed with, or furnished to, the U.S. Securities and Exchange Commission. All reports filed with the Securities Exchange Commission can also be viewed on their website at www.sec.gov. AMETEK has posted in the "Investors – Governance" section of its website its corporate governance guidelines, Board committee charters, codes of ethics, and social and environmental policies. Those documents also are available free of charge in published form to any stockholder who requests them by writing to the Investor Relations Department at AMETEK, Inc., 1100 Cassatt Road, Berwyn, Pennsylvania, 19312.

Item 1A. Risk Factors

You should consider carefully the following risk factors and all other information contained in this Annual Report on Form 10-K and the documents we incorporate by reference in this Annual Report on Form 10-K. Any of the following risks could materially and adversely affect our business, financial condition, results of operations and cash flows.

Risks Related to Our Operations

Our growth could suffer if the markets into which we sell our products and services decline, do not grow as anticipated, experience cyclicality, or a general downturn in the economy could adversely affect our business.

A number of the industries in which we operate are cyclical in nature and therefore are affected by factors beyond our control. A downturn in the U.S. or global economy, and, in particular, in the aerospace and defense, oil and gas, process instrumentation or power markets could have an adverse effect on our business, financial condition and results of operations.

Our growth depends in part on the growth of the markets which we serve. Visibility into the future performance of certain of our markets is limited (particularly for markets into which we sell through distribution). Our quarterly sales and profits depend substantially on the volume and timing of orders received during the fiscal quarter, which are difficult to forecast. Any decline or lower than expected growth in our served markets could diminish demand for our products and services, which would adversely affect our financial statements. A number of our businesses operate in industries that may experience periodic, cyclical downturns. In addition, in certain of our businesses, demand depends on customers' capital spending budgets, as well as government funding policies. Matters of public policy and government budget dynamics, as well as product and economic cycles, can affect the spending decisions of these customers. Demand for our products and services is also sensitive to changes in customer order patterns, which may be affected by announced price changes, changes in incentive programs, new product introductions and customer inventory levels. Any of these factors could adversely affect our growth and results of operations in any given period.

We may not properly execute, or realize anticipated cost savings or benefits from, our Operational Excellence initiatives.

Our success is partly dependent upon properly executing and realizing cost savings or other benefits from our ongoing production and procurement initiatives. These initiatives are primarily designed to make the Company more efficient, which is necessary in the Company's highly competitive industries. These initiatives are often complex, and a failure to implement them properly may, in addition to not meeting projected cost savings or benefits, adversely affect our business and operations.

Foreign and domestic economic, political, legal, compliance and business factors could negatively affect our international sales and operations.

International sales for 2024 and 2023 represented 47.4% of our consolidated net sales. As a result of our growth strategy, we anticipate that the percentage of sales outside the United States will increase in the future. As of December 31, 2024, we have manufacturing operations in 20 countries outside the United States, with significant operations in Canada, China, France, Germany, Mexico, Serbia, Poland and the United Kingdom. A disruption of our ability to obtain a supply of goods from these countries or a change in the cost to purchase, manufacture, or distribute these products could have an adverse effect on our sales and operations. International sales and operations are subject to the customary risks of operating in an international environment, including:

- Imposition of trade or foreign exchange restrictions, including in the United States;
- Overlap of different tax structures, including the development of a global minimum tax;
- Unexpected changes in regulatory requirements, including in the United States;
- Trade protection measures, such as the imposition of or increase in tariffs and other trade barriers, including in the United States;
- The difficulty and/or costs of designing and implementing an effective control environment across diverse regions and employee bases;
- Restrictions on currency repatriation;
- General economic conditions;
- Unstable political situations and social unrest, both internationally and in the United States;
- Increasing trade tensions between the United States and certain countries, including China;
- Nationalization of assets; and
- Compliance with a wide variety of international and U.S. laws and regulatory requirements.

Furthermore, fluctuations in foreign currency exchange rates, including changes in the relative value of currencies in the countries where we operate, subject us to exchange rate exposure and may adversely affect our financial statements. For example, increased strength in the U.S. dollar will increase the effective price of our products sold overseas, which may adversely affect sales or require us to lower our prices. In addition, our consolidated financial statements are presented in U.S. dollars, and we must translate our assets, liabilities, sales and expenses into U.S. dollars for external reporting purposes. As a result, changes in the value of the U.S. dollar due to fluctuations in currency exchange rates or currency exchange controls may materially and negatively affect the value of these items in our consolidated financial statements, even if their value has not changed in their local currency.

Our international sales and operations may be adversely impacted by compliance with export laws.

We are required to comply with various import, export, export control and economic sanctions laws, which may affect our transactions with certain customers, business partners and other persons, including in certain cases dealings with or between our employees and subsidiaries. In certain circumstances, export control and economic sanctions regulations may prohibit the export of certain products, services and technologies and in other circumstances, we may be required to obtain an export license before exporting a controlled item. In addition, failure to comply with any of these regulations could result in civil and criminal, monetary and non-monetary penalties, disruptions to our business, limitations on our ability to import and export products and services and damage to our reputation.

Our reputation, ability to do business and financial statements may be impaired by improper conduct by any of our employees, agents or business partners.

We cannot provide assurance that our internal controls and compliance systems will always protect us from acts committed by employees, agents or business partners of ours (or of businesses we acquire or partner with) that would violate U.S. and/or non-U.S. laws, including the laws governing payments to government officials, bribery, fraud, kickbacks and false claims, pricing, sales and marketing practices, conflicts of interest, competition, export and import compliance, money laundering and data privacy. In particular, the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to government officials for the purpose of obtaining or retaining business, and we operate in many parts of the world that have experienced governmental corruption to some degree. Any such improper actions or allegations of such acts could damage our reputation and subject us to civil or criminal investigations in the U.S. and in other jurisdictions and related shareholder lawsuits could lead to substantial civil and criminal, monetary and non-monetary penalties and could cause us to incur significant legal and investigatory fees. In addition, we rely on our suppliers to adhere to our supplier standards of conduct and violations of such standards of conduct could occur that could have a material effect on our financial statements.

Any inability to hire, train and retain a sufficient number of skilled officers and other employees could impede our ability to compete successfully.

If we cannot hire, train and retain a sufficient number of qualified employees, we may not be able to effectively integrate acquired businesses and realize anticipated results from those businesses, manage our expanding international operations and otherwise profitably grow our business. Even if we do hire and retain a sufficient number of employees, the expense necessary to attract and motivate these officers and employees may adversely affect our results of operations.

If we are unable to develop new products on a timely basis, it could adversely affect our business and prospects.

We believe that our future success depends, in part, on our ability to develop, on a timely basis, technologically advanced products that meet or exceed appropriate industry standards. Maintaining our existing technological advantages will require us to continue investing in research and development and sales and marketing. There can be no assurance that we will have sufficient resources to make such investments, that we will be able to make the technological advances necessary to maintain such competitive advantages or that we can recover major research and development expenses. We are not currently aware of any emerging standards or new products which could render our existing products obsolete, although there can be no assurance that this will not occur or that we will be able to develop and successfully market new products.

Our technology is important to our success and our failure to protect this technology could put us at a competitive disadvantage.

Many of our products rely on proprietary technology; therefore, we endeavor to protect our intellectual property rights through patents, copyrights, trade secrets, trademarks, confidentiality agreements and other contractual provisions. Despite our efforts to protect proprietary rights, unauthorized parties or competitors may copy or otherwise obtain and use our products or technology. In addition, our ability to protect and enforce our intellectual property rights may be limited in certain countries outside the U.S. Actions to enforce our rights may result in substantial costs and diversion of resources and we make no assurances that any such actions will be successful.

A disruption in, shortage of, or price increases for, supply of our components and raw materials may adversely impact our operations.

While we manufacture certain parts and components used in our products, we require substantial amounts of raw materials and purchase some parts and components, including semiconductor chips and other electronic components, from suppliers. The availability and prices for raw materials, parts and components may be subject to curtailment or change due to, among other things, suppliers' allocation to other purchasers, interruptions in production by suppliers, changes in exchange rates and prevailing price levels. In addition, our facilities, supply chains, distribution systems, and products may be impacted by natural or man-made disruptions, including armed conflict, damaging weather or other acts of nature, pandemics or other public health crises. A shutdown of, or inability to utilize, one or more of our facilities, our supply chain, or our distribution system could significantly disrupt our operations, delay production and shipments, damage our relationships and reputation with customers, suppliers, employees, stockholders and others, result in lost sales, result in the misappropriation or corruption of data, or result in legal exposure and large remediation or other expenses. Furthermore, certain items, including base metals and certain steel components, are available only from a limited number of suppliers and are subject to commodity market fluctuations. Shortages in raw materials or price increases therefore could affect the prices we charge, our operating costs and our competitive position, which could adversely affect our business, financial condition, results of operations and cash flows.

We are subject to numerous governmental regulations, which may be burdensome or lead to significant costs.

Our operations are subject to numerous federal, state, local and foreign governmental laws and regulations. In addition, existing laws and regulations may be revised or reinterpreted and new laws and regulations, including with respect to privacy legislation and climate change, may be adopted or become applicable to us or customers for our products. These laws continue to develop and may be inconsistent from jurisdiction to jurisdiction. Complying with emerging and changing international requirements may cause the Company to incur substantial costs or require the Company to change its business practices. We cannot predict the form any such new laws or regulations will take or the impact any of these laws and regulations will have on our business or operations.

We operate in highly competitive industries, which may adversely affect our results of operations or ability to expand our business.

Our markets are highly competitive. We compete, domestically and internationally, with individual producers, as well as with vertically integrated manufacturers, some of which have resources greater than we do. The principal elements of competition for our products are product technology, quality, service, distribution and price. Although we believe EIG is a market leader, competition is strong and could intensify in the markets served by EIG. In the aerospace markets served by EIG, a limited number of companies compete on the basis of product quality, performance and innovation. EMG’s competition in specialty metal products stems from alternative materials and processes. Our competitors may develop new or improve existing products that are superior to our products or may adapt more readily to new technologies or changing requirements of our customers. There can be no assurance that our business will not be adversely affected by increased competition in the markets in which it operates or that our products will be able to compete successfully with those of our competitors.

Our business and financial performance could be adversely impacted by a significant disruption in, or breach in security of, our information technology systems.

We rely on information technology systems, some of which are managed by third-parties, to process, transmit and store electronic information (including sensitive data such as confidential business information and personally identifiable data relating to employees, customers, other business partners and patients), and to monitor, manage, and support a variety of critical business processes and activities including receiving and fulfilling orders, billing, collecting and making payments, shipping products, providing services and support to customers and fulfilling contractual obligations. Despite our implementation of certain controls to protect our systems and sensitive, confidential or personal data or information, these systems, products, data and services may be damaged, compromised, disrupted or shut down due to attacks by computer hackers, computer viruses, ransomware, human error or malfeasance, power outages, hardware failures, telecommunication or utility failures, catastrophes or other unforeseen events. In any such circumstances, our system redundancy and other disaster recovery planning may be ineffective or inadequate. Further, we also face information security risks due to our reliance on internet technology and use of hybrid work arrangements, which could strain our technology resources or create additional opportunity for cyber-attackers to exploit vulnerabilities.

Attacks may also target hardware, software and information installed, stored or transmitted in our products after such products have been purchased and incorporated into third-party products, facilities or infrastructure. Like most multinational corporations, our information technology systems have been subject to computer viruses, malicious codes, unauthorized access and other cyber-attacks and we expect the sophistication and frequency of such attacks to continue to increase. Any of the attacks, breaches or other disruptions or damage described above could interrupt our operations or the operations of our customers and partners, delay production and shipments, result in theft of intellectual property and trade secrets, damage customer and business partner relationships and our reputation or result in defective products or services, legal claims and proceedings, liability and penalties under privacy laws and increased costs for security and remediation, each of which could adversely affect our business, reputation and financial statements. Further, given the increasing sophistication of cyber-attacks and the complexity of techniques used, any of these attacks or breaches could potentially persist for an extended period before being detected. As a result, it could take a significant time before an investigation can be completed and new disclosure regulations could result in us being required to disclose information about a material cybersecurity incident before it has been mitigated or resolved, or even fully investigated. Although we maintain cyber risk insurance, damages and claims arising from such incidents may not be covered or may exceed the amount of any insurance available.

Risks Related to Our Acquisitions

Our growth strategy includes strategic acquisitions. We may not be able to consummate future acquisitions or successfully integrate recent and future acquisitions.

A portion of our growth has been attributed to acquisitions of strategic businesses. We plan to continue making strategic acquisitions to enhance our global market position and broaden our product offerings. Although we have been successful with our acquisition strategy in the past, our ability to successfully effectuate acquisitions will be dependent upon a number of factors, including:

- Our ability to identify acceptable acquisition candidates;
- The impact of increased competition for acquisitions, which may increase acquisition costs, affect our ability to consummate acquisitions on favorable terms, and result in us assuming a greater portion of the seller's liabilities;

- Successfully integrating acquired businesses, including integrating the management, technological and operational processes, procedures and controls of the acquired businesses with those of our existing operations;

- Adequate financing for acquisitions being available on terms acceptable to us;

- Unexpected losses of key employees, customers and suppliers of acquired businesses;

- Mitigating assumed, contingent and unknown liabilities; and

- Challenges in managing the increased scope, geographic diversity and complexity of our operations.

The process of integrating acquired businesses into our existing operations may result in unforeseen operating difficulties and may require additional financial resources and attention from management that would otherwise be available for the ongoing development or expansion of our existing operations. Furthermore, even if successfully integrated, the acquired business may not achieve the results we expected or produce expected benefits in the time frame planned. Failure to continue with our acquisition strategy and the successful integration of acquired businesses could have an adverse effect on our business, financial condition, results of operations and cash flows.

The indemnification provisions of acquisition agreements by which we have acquired companies may not fully protect us and as a result we may face unexpected liabilities.

Certain of the acquisition agreements by which we have acquired companies require the former owners to indemnify us against certain liabilities related to the operation of the company before we acquired it. In most of these agreements, however, the liability of the former owners is limited, and certain former owners may be unable to meet their indemnification responsibilities. We may also obtain representation and warranty insurance to address certain potential risks and liabilities. We cannot assure you that these indemnification provisions and insurance policies will protect us fully or at all, and as a result we may face unexpected liabilities that adversely affect our financial statements.

Risks Related to Our Financial Condition

Certain environmental risks may cause us to be liable for costs associated with hazardous or toxic substance clean-up which may adversely affect our financial condition.

Our businesses, operations and facilities are subject to a number of federal, state, local and foreign environmental and occupational health and safety laws and regulations concerning, among other things, air emissions, discharges to waters and the use, manufacturing, generation, handling, storage, transportation and disposal of hazardous substances and wastes. Environmental risks are inherent in many of our manufacturing operations. Certain laws provide that a current or previous owner or operator of property may be liable for the costs of investigating, removing and remediating hazardous materials at such property, regardless of whether the owner or operator knew of, or was responsible for, the presence of such hazardous materials. In addition, the Comprehensive Environmental Response, Compensation and Liability Act generally imposes joint and several liability for clean-up costs, without regard to fault, on parties contributing hazardous substances to sites designated for clean-up under the Act. We have been named a potentially responsible party at several sites, which are the subject of government-mandated clean-ups. As the result of our ownership and operation of facilities that use, manufacture, store, handle and dispose of various hazardous materials, we may incur substantial costs for investigation, removal, remediation and capital expenditures related to compliance with environmental laws. While it is not possible to precisely quantify the potential financial impact of pending environmental matters, based on our experience to date, we believe that the outcome of these matters is not likely to have a material adverse effect on our financial position or future results of operations. In addition, new laws and regulations, new classification of hazardous materials, stricter enforcement of existing laws and regulations, the discovery of previously unknown contamination or the imposition of new clean-up requirements could require us to incur costs or become the basis for new or increased liabilities that could have a material adverse effect on our business, financial condition and results of operations. There can be no assurance that future environmental liabilities will not occur or that environmental damages due to prior or present practices will not result in future liabilities.

We are subject to a variety of litigation and other legal and regulatory proceedings in the course of our business that could adversely affect our financial statements.

We are subject to a variety of litigation and other legal and regulatory proceedings incidental to our business (or the business operations of previously owned entities), including claims for damages arising out of the use of products or services and claims relating to intellectual property matters, employment matters, tax matters, commercial disputes, competition and sales and trading practices, environmental matters, personal injury, insurance coverage and acquisition-related matters, as well as regulatory investigations or enforcement. These lawsuits may include claims for compensatory damages, punitive and consequential damages and/or injunctive relief. The defense of these lawsuits may divert our management's attention, we may incur significant expenses in defending these lawsuits, and we may be required to pay damage awards or settlements or become subject to equitable remedies that could adversely affect our operations and financial statements. Moreover, any insurance or indemnification rights that we may have may be insufficient or unavailable to protect us against such losses. In addition, developments in proceedings in any given period may require us to adjust the loss contingency estimates that we have recorded in our financial statements, record estimates for liabilities or assets previously not susceptible of reasonable estimates or pay cash settlements or judgments. Any of these developments could adversely affect our financial statements in any particular period. We cannot assure you that our liabilities in connection with litigation and other legal and regulatory proceedings will not exceed our estimates or adversely affect our financial statements and reputation. However, based on our experience, current information and applicable law, we do not believe that any amounts we may be required to pay in connection with litigation and other legal and regulatory proceedings in excess of our reserves will have a material effect on our financial statements.

Restrictions contained in our revolving credit facility and other debt agreements may limit our ability to incur additional indebtedness.

Our existing revolving credit facility and other debt agreements (each a "Debt Facility" and collectively, "Debt Facilities") contain restrictive covenants, including restrictions on our ability to incur indebtedness. These restrictions could limit our ability to effectuate future acquisitions, limit our ability to pay dividends, limit our ability to make capital expenditures or restrict our financial flexibility. Our Debt Facilities contain covenants requiring us to achieve certain financial and operating results and maintain compliance with specified financial ratios. Our ability to meet the financial covenants or requirements in our Debt Facilities may be affected by events beyond our control, and we may not be able to satisfy such covenants and requirements. A breach of these covenants or our inability to comply with the financial ratios, tests or other restrictions contained in a Debt Facility could result in an event of default under one or more of our other Debt Facilities. Upon the occurrence of an event of default under a Debt Facility, and the expiration of any grace periods, the lenders could elect to declare all amounts outstanding under one or more of our other Debt Facilities, together with accrued interest, to be immediately due and payable. If this were to occur, our assets may not be sufficient to fully repay the amounts due under our Debt Facilities or our other indebtedness.

Our goodwill and other intangible assets represent a substantial proportion of our total assets and the impairment of such substantial goodwill and intangible assets could have a negative impact on our financial condition and results of operations.

Our total assets include substantial amounts of intangible assets, primarily goodwill. At December 31, 2024, goodwill and other intangible assets, net of accumulated amortization, totaled $10,471.1 million or 72% of our total assets. The goodwill results from our acquisitions, representing the excess of cost over the estimated fair value of the net tangible and other identifiable intangible assets we have acquired. If future operating performance at one or more of our reporting units were to fall significantly below current levels, we could record, under current applicable accounting rules, a non-cash charge to operating income for goodwill or other intangible asset impairment. Any determination requiring the impairment of a significant portion of goodwill or other intangible assets would negatively affect our financial condition and results of operations.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

AMETEK's cybersecurity risk management practices are based on the widely recognized National Institute of Standards and Technology Framework for Improving Critical Infrastructure Cybersecurity (The NIST Cybersecurity Framework and the NIST 800-171 Revision 2 Standard). This guidance was developed with private sector input and provides a framework and toolkit for organizations to manage cybersecurity risk.

We utilize a broad team of in-house information technology and security personnel, as well as third-party consultants, services and software, to help manage our cybersecurity efforts and initiatives. We regularly assess our threat landscape and monitor our systems and other technical security controls. Additionally, we maintain information security policies and procedures, including a breach response plan and maintenance of backup and protective systems.

We regularly review our policies, practices, and plans with assistance from third-party experts and advisors. Our Chief Information Officer is responsible for corporate-wide data security. Our management team is actively engaged in regular reviews of cyber risks. Additionally, our full Board of Directors receives quarterly briefings on enterprise-wide cybersecurity risk management and our overall cybersecurity risk environment.

We have implemented two risk management groups, the Enterprise Risk Management Committee, and the Cybersecurity Steering Committee. These committees meet quarterly. They are responsible for the overall governance of our cyber management. The implementation of the Cyber polices and strategy is the responsibility of the Chief Information Officer and the Director of Cyber Security. The CIO reports to the Chief Administrative Officer and the Director of Cyber Security reports to the CIO. We also have a team of full-time cybersecurity specialists who hold various industry technology accreditations. The CIO has more than 35 years in Senior IT Leadership positions, and the Director of Cyber Security has more than 30 years IT experience overall, 15 of which are in leadership roles.

Operationally, we deploy multiple layers of cyber defenses including multiple tools and processes that identify security risks across our global networks, largely in real time. We also maintain good relationships with law enforcement agencies to remain informed on potential cyber risks.

Mandatory cybersecurity training is conducted eight times a year for all of AMETEK's employees with email access. The training provides critical information on how employees can protect themselves and AMETEK against cybersecurity risks. AMETEK financial professionals receive additional training due to the nature of their roles.

Item 2. Properties

At December 31, 2024, the Company conducted business from office and operating facilities at owned and leased locations throughout the United States and select global markets. The Company leases a facility in Berwyn, Pennsylvania for its corporate headquarters.

The Company believes that all facilities have been adequately maintained, are in good operating condition, and are suitable for our current needs.

Item 3. Legal Proceedings

Please refer to Note 13 to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for information regarding certain litigation matters.

The Company is subject to a variety of litigation and other legal and regulatory proceedings incidental to its business (or the business operations of previously owned entities), including claims for damages arising out of the use of the Company’s products or services and claims relating to intellectual property matters, employment matters, tax matters, commercial disputes, competition and sales and trading practices, environmental matters, personal injury, insurance coverage and acquisition-related matters, as well as regulatory investigations or enforcement. Based upon the Company’s experience, the Company does not believe that these proceedings and claims will have a material adverse effect on its results of operations, financial position or cash flows.

Item 4. Mine Safety Disclosures

Not Applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The principal market on which the Company's common stock is traded is the New York Stock Exchange and it is traded under the symbol "AME." On January 31, 2025, there were approximately 1,700 holders of record of the Company's common stock.

Market price and dividend information with respect to the Company's common stock is set forth below. Future dividend payments by the Company will be dependent on future earnings, financial requirements, contractual provisions of debt agreements and other relevant factors.

Under its share repurchase program, the Company repurchased approximately 1,258,200 shares of its common stock for $223.1 million in 2024 and approximately 55,800 shares of its common stock for $7.8 million in 2023.

The objective and rationale of the share repurchases is to enhance shareholder value through the opportunistic repurchases of the Company's common stock. The Company takes a balanced approach when determining how to deploy capital, including strategic acquisitions, dividends, and share repurchases. The factors evaluated when considering how to deploy capital include: the Company's share price, the Company's cash balances, balance sheet flexibility, business prospects, the leverage of the Company, and other investment opportunities.

Issuer Purchases of Equity Securities

The following table reflects purchases of AMETEK, Inc. common stock by the Company during the three months ended December 31, 2024:

Period	Total Number of Shares Purchased (1)(2)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan (2)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plan
October 1, 2024 to October 31, 2024	—	$ —	—	$ 748,135,553
November 1, 2024 to November 30, 2024	105,801	179.68	105,801	729,125,335
December 1, 2024 to December 31, 2024	739,179	184.08	739,179	593,058,748
Total	844,980	$ 183.53	844,980	

(1) Represents shares surrendered to the Company to satisfy tax withholding obligations in connection with employees' share-based compensation awards.

(2) Consists of the number of shares purchased pursuant to the Company's Board of Directors $1 billion authorization for the repurchase of its common stock announced in May 2022, which replaces the previous $500 million authorization for repurchase of its common stock announced in February 2019. Such purchases may be effected from time to time in the open market or in private transactions, subject to market conditions and at management's discretion.

Securities Authorized for Issuance Under Equity Compensation Plan Information

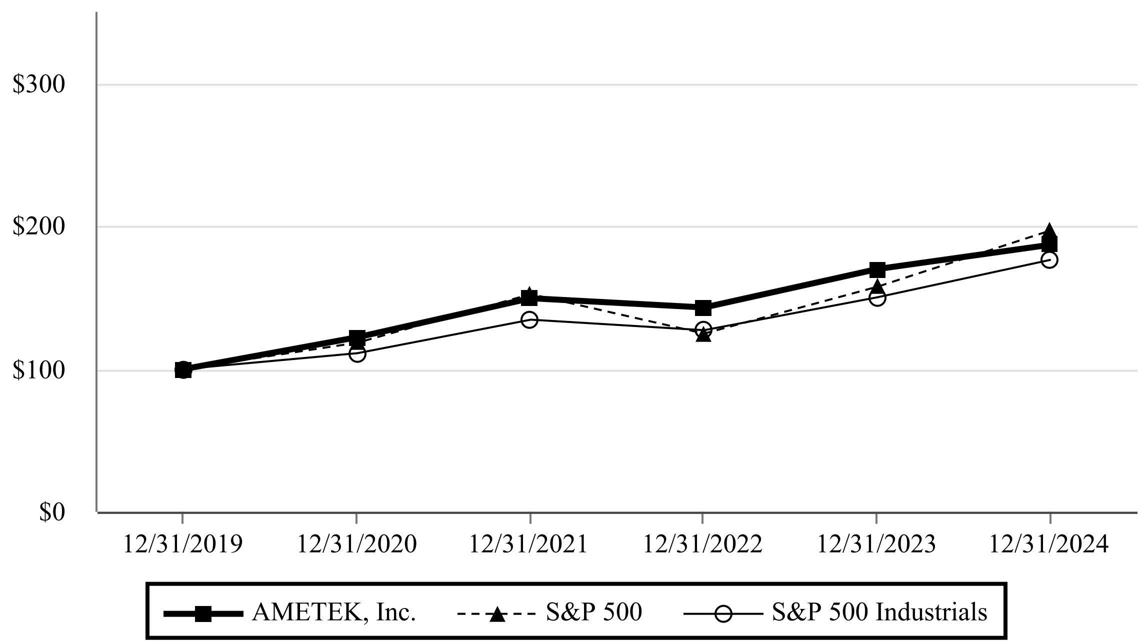
The following table sets forth information as of December 31, 2024 regarding all of the Company's existing compensation plans pursuant to which equity securities are authorized for issuance to employees and non-employee directors:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	2,139,951	$ 114.33	5,131,945
Equity compensation plans not approved by security holders	—	—	—
Total	2,139,951	$ 114.33	5,131,945

Stock Performance Graph

The following graph and accompanying table compare the cumulative total stockholder return for AMETEK over the last five years ended December 31, 2024 with total returns for the same period for the Standard and Poor's ("S&P") 500 Index and S&P 500 Industrials. AMETEK's stock price is a component of both indices. The performance graph and table assume a $100 investment made on December 31, 2019 and reinvestment of all dividends. The stock performance shown on the graph below is based on historical data and is not necessarily indicative of future stock price performance.

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN



	December 31,					
	2019	**2020**	**2021**	**2022**	**2023**	**2024**
AMETEK, Inc.	$ 100.00	$ 122.23	$ 149.52	$ 143.06	$ 169.96	$ 186.99
S&P 500 Index	100.00	118.40	152.39	124.79	157.59	197.02
S&P 500 Industrials	100.00	111.06	134.52	127.15	150.20	176.44

Item 6. Reserved

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

This report includes forward-looking statements based on the Company’s current assumptions, expectations and projections about future events. When used in this report, the words “believes,” “anticipates,” “may,” “expect,” “intend,” “estimate,” “project” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such words. In this report, the Company discloses important factors that could cause actual results to differ materially from management’s expectations. For more information on these and other factors, see “Forward-Looking Information” herein.

The following Management’s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with “Item 1A. Risk Factors,” and the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K.

Business Overview

AMETEK’s operations are affected by global, regional and industry-specific economic factors. However, the Company’s strategic geographic and industry diversification, and its mix of products and services, have helped to mitigate the potential adverse impact of any unfavorable developments in any one industry or the economy of any single country on its consolidated operating results. In 2024, the Company posted record sales, operating income, net income, diluted earnings per share, and operating cash flow. Positive market trends, the Company's backlog, contributions from recent acquisitions, and continued focus on and implementation of Operational Excellence initiatives had a positive impact on 2024 results. The Company also benefited from its strategic initiatives under AMETEK's four key strategies: Operational Excellence, Strategic Acquisitions, Global & Market Expansion and New Products.

Highlights in 2024 were:

- Net sales for 2024 were a record $6,941.2 million, an increase of $344.2 million or 5.2%, compared with net sales of $6,597.0 million in 2023.

- Net income for 2024 was a record $1,376.1 million, an increase of $62.9 million or 4.8%, compared with $1,313.2 million in 2023.

- Diluted earnings per share for 2024 were a record $5.93, an increase of $0.26 or 4.5%, compared with $5.67 per diluted share in 2023.

- Cash provided by operating activities totaled a record $1,828.8 million in 2024, an increase of $93.5 million or 5.4%, compared with cash provided by operating activities of $1,735.3 million in 2023.

- The Company's backlog of unfilled orders at December 31, 2024 was $3,403.2 million.

- In October 2024, the Company spent $117.5 million in cash, net of cash acquired, to purchase Virtek Vision International ("Virtek"), a leading provider of advanced laser-based projection and inspection systems.

- EBITDA (earnings before interest, income taxes, depreciation, and amortization) was a record $2,151.6 million in 2024, compared with $2,014.7 million in 2023.

- In the third quarter of 2024, the Company paid in full, at maturity, a $300 million in aggregate principal amount of 3.73% senior notes.

- The Company continued its emphasis on investment in research, development and engineering, spending $371.9 million in 2024. Approximately 27% of sales in 2024 were from products introduced in the past three years.

Results of Operations

The following "Results of Operations of the year ended December 31, 2024 compared with the year ended December 31, 2023" section presents an analysis of the Company's consolidated operating results displayed in the Consolidated Statement of Income. A discussion regarding our financial condition and results of operations for the year ended December 31, 2023 compared to the year ended December 31, 2022 can be found under Item 7 in our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the Securities and Exchange Commission on February 22, 2024.

Results of Operations for the year ended December 31, 2024 compared with the year ended December 31, 2023

Net sales for 2024 were $6,941.2 million, an increase of $344.2 million or 5.2%, compared with net sales of $6,597.0 million in 2023. The increase in net sales for 2024 was due to a 7% increase from acquisitions, partially offset by a 2% organic sales decline. EIG net sales were $4,659.9 million in 2024, an increase of 0.8%, compared with $4,624.3 million in 2023. EMG net sales were $2,281.3 million in 2024, an increase of 15.6%, compared with $1,972.7 million in 2023.

Total international sales for 2024 were $3,291.7 million or 47.4% of net sales, an increase of $163.5 million or 5.2%, compared with international sales of $3,128.2 million or 47.4% of net sales in 2023. The increase in international sales was primarily driven by strong demand in Europe and Asia, as well as contributions from the 2023 acquisitions. Export shipments from the United States, which are included in total international sales, were $1,880.8 million in 2024, an increase of $148.4 million or 8.6%, compared with $1,732.4 million in 2023.

Orders for 2024 were $6,810.3 million, a decrease of $102.1 million or 1.5% compared with $6,912.4 million in 2023. The decrease in orders was due to a 2% organic order decrease, a 1% unfavorable effect of foreign currency translation, partially offset by a 2% increase from acquisitions. The organic orders decrease is due to customer inventory normalization in our automation and engineered solutions core businesses. The Company's backlog of unfilled orders at December 31, 2024 was $3,403.2 million, a decrease of $130.9 million or 3.7%, compared with $3,534.1 million at December 31, 2023.

Segment operating income for 2024 was $1,884.9 million, an increase of $77.4 million or 4.3%, compared with segment operating income of $1,807.5 million in 2023. Segment operating income, as a percentage of net sales, decreased to 27.2% in 2024, compared with 27.4% in 2023. Segment operating income and operating margins in 2024 included $29.2 million of integration costs related to the Paragon acquisition, which negatively impacted segment operating margins by 40 basis points. The dilutive impact of the 2023 acquisitions negatively impacted segment operating margins by 110 basis points in 2024. Excluding the dilutive impact of the 2023 acquisitions and the Paragon integration costs, segment operating margins increased 130 basis points compared to 2023, due to the continued benefits from the Company's Operational Excellence initiatives.

Cost of sales for 2024 was $4,464.7 million or 64.3% of net sales, an increase of $252.2 million or 6.0%, compared with $4,212.5 million or 63.9% of net sales for 2023. The cost of sales increase was primarily due to the net sales increase discussed above.

Selling, general and administrative expenses for 2024 were $696.9 million or 10.0% of net sales, an increase of $19.9 million or 2.9%, compared with $677.0 million or 10.3% of net sales in 2023. Selling expenses increased primarily due to the increase in net sales discussed above. General and administrative expenses for 2024 were $105.3 million, compared with $100.1 million in 2023.

Consolidated operating income was $1,779.6 million or 25.6% of net sales for 2024, an increase of $72.1 million or 4.2%, compared with $1,707.5 million or 25.9% of net sales in 2023.

Other expense, net was $5.1 million for 2024, compared with $19.3 million of other expense in 2023, a change of $14.2 million. During 2024, the Company recorded higher pension income of $6.5 million and lower acquisition-related due diligence expense compared to 2023.

The effective tax rate for 2024 was 17.2%, compared with 18.3% in 2023. See Note 9 to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for further details.

Net income for 2024 was $1,376.1 million, an increase of $62.9 million or 4.8%, compared with $1,313.2 million in 2023.

Diluted earnings per share for 2024 were $5.93, an increase of $0.26 or 4.5%, compared with $5.67 per diluted share in 2023.

Segment Results

EIG's net sales totaled a record $4,659.9 million for 2024, an increase of $35.6 million or 0.8%, compared with $4,624.3 million in 2023. The net sales increase was due to a 2% increase from acquisitions, partially offset by a 1% organic sales decrease.

EIG's operating income was a record $1,428.4 million for 2024, an increase of $117.4 million or 9.0%, compared with $1,311.0 million in 2023. EIG's operating margins were a record 30.7% of net sales for 2024, compared with 28.3% of net sales in 2023. EIG's operating margins increased in 2024 compared to 2023 due to the continued benefits from the Company's Operational Excellence initiatives.

EMG's net sales totaled a record $2,281.3 million for 2024, an increase of $308.6 million or 15.6%, compared with $1,972.7 million in 2023. The net sales increase was due to a 20% increase from acquisitions, partially offset by a 5% organic sales decrease. The organic sales decrease for 2024 is due to customer inventory normalization in our automation and engineered solutions core businesses.

EMG's operating income was $456.5 million for 2024, a decrease of $40.1 million or 8.1%, compared with $496.6 million in 2023. EMG's operating margins were 20.0% of net sales for 2024, compared with 25.2% of net sales in 2023. EMG's operating margins were negatively impacted by the dilutive impact of the 2023 acquisitions. EMG's operating income and operating margins for 2024 included $29.2 million of integration costs related to the Paragon acquisition, which negatively impacted segment operating margins by 130 basis points. The dilutive impact of the 2023 acquisitions negatively impacted EMG operating margins by 270 basis points in 2024. Excluding the dilutive impact of the 2023 acquisitions and the Paragon integration costs, EMG operating margins decreased 120 basis points compared to 2023, due to the organic sales decrease discussed above.

Liquidity and Capital Resources

Cash provided by operating activities totaled $1,828.8 million in 2024, an increase of $93.5 million or 5.4%, compared with cash provided by operating activities of $1,735.3 million in 2023. The increase in cash provided by operating activities for 2023 was primarily due to higher net income, net of higher noncash depreciation and amortization expense related to recent acquisitions, and improved working capital management.

Free cash flow (cash flow provided by operating activities less capital expenditures) was $1,701.7 million in 2024, compared with $1,599.1 million in 2023. EBITDA (earnings before interest, income taxes, depreciation and amortization) was $2,151.7 million in 2024, compared with $2,014.7 million in 2023. Free cash flow and EBITDA are presented because the Company is aware that they are measures used by third parties in evaluating the Company. (See "Non-GAAP Financial Measures" for a reconciliation of U.S. GAAP measures to comparable non-GAAP measures).

Cash used by investing activities totaled $244.8 million in 2024, compared with cash used by investing activities of $2,376.4 million in 2023. In 2024, the Company paid $117.5 million, net of cash acquired, to purchase Virtek Vision International, compared to $2,237.9 million, net of cash acquired, to purchase Bison Gear & Engineering Corp., United Electronic Industries, Amplifier Research Corp. and Paragon Medical in 2023. Additions to property, plant and equipment totaled $127.1 million in 2024, compared with $136.2 million in 2023.

Cash used by financing activities totaled $1,602.5 million in 2024, compared with $697.3 million of cash provided by financing activities in 2023. At December 31, 2024, total debt, net was $2,079.7 million, compared with $3,313.3 million at December 31, 2023. In 2024, total borrowings decreased by $1,189.7 million, compared with an increase of $892.3 million in 2023. At December 31, 2024, the Company had available borrowing capacity of $2,020.3 million under its revolving credit facility and term loan, excluding the $700 million accordion feature.

At December 31, 2024, the Company had $230.0 million outstanding on the revolver with a maturity date of May 2027. The amount outstanding under the revolver that the Company expects, but is not required, to repay in 2025 is recorded in current liabilities on the consolidated balance sheet at December 31, 2024.

In the third quarter of 2024, the Company paid in full, at maturity, a $300 million in aggregate principal amount of 3.73% senior notes. The debt-to-capital ratio was 17.7% at December 31, 2024, compared with 27.5% at December 31, 2023. The net debt-to-capital ratio (total debt, net less cash and cash equivalents divided by the sum of net debt and stockholders' equity) was 15.0% at December 31, 2024, compared with 25.0% at December 31, 2023. The net debt-to-capital ratio is presented because the Company is aware that this measure is used by third parties in evaluating the Company. (See "Non-GAAP Financial Measures" for a reconciliation of U.S. GAAP measures to comparable non-GAAP measures).

In 2024, the Company repurchased approximately 1.2 million shares of its common stock for $212.0 million, compared with $7.8 million used for repurchases of approximately 0.1 million shares in 2023. At December 31, 2024, $604.1 million was available under the Company's Board of Directors authorization for future share repurchases.

Additional financing activities for 2024 included cash dividends paid of $258.8 million, compared with $230.3 million in 2023. Effective February 9, 2024, the Company's Board of Directors approved a 12% increase in the quarterly cash dividend on the Company's common stock to $0.28 per common share from $0.25 per common share. Proceeds from the exercise of employee stock options were $66.9 million in 2024, compared with $50.9 million in 2023.

As a result of all of the Company's cash flow activities in 2024, cash and cash equivalents at December 31, 2024 totaled $374.0 million, compared with $409.8 million at December 31, 2023. At December 31, 2024, the Company had $361.5 million in cash outside the United States, compared with $375.9 million at December 31, 2023. The Company utilizes this cash to fund its international operations, as well as to acquire international businesses. The Company is in compliance with all covenants, including financial covenants, for all of its debt agreements. The Company believes it has sufficient cash-generating capabilities from domestic and unrestricted foreign sources, available credit facilities and access to long-term capital funds to enable it to meet its operating needs and contractual obligations for the foreseeable future.

Subsequent Events

On January 6, 2025, the Company established a commercial paper program under which it may issue short-term, unsecured commercial paper notes. Amounts available under the commercial paper program may be borrowed, repaid and re-borrowed, with the aggregate face or principal amount of the notes outstanding under the commercial paper program at any time not to exceed $2.3 billion. The notes will have maturities of up to 364 days from the date of issue. The Company intends the commercial paper program to provide additional financing flexibility for various purposes including acquisitions. The Company expects that outstanding indebtedness of the Company under both the revolving credit facility and the commercial paper program will not exceed $2.3 billion at any time.

Effective February 7, 2025, the Company's Board of Directors approved an 11% increase in the quarterly cash dividend on its common stock to $0.31 per share from $0.28 per share.

Effective February 7, 2025, the Company's Board of Directors approved a $1.25 billion share repurchase authorization. This new authorization replaces the previous $1 billion share repurchase authorization approved in May 2022.

Acquisition subsequent to December 31, 2024

In January 2025, the Company acquired Kern Microtechnik ("Kern"), a leading manufacturer of high-precision machining and optical inspection solutions supporting a wide range of applications within the medical, semiconductor, research, and space markets. Kern has annual sales of approximately 50 million Euros. Kern will join EIG.

Contractual Obligations and Other Commitments

Material contractual obligations arising in the normal course of business primarily consist of purchase obligations, long-term debt and related interest payments, and leases. See Note 10 to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for more information on the nature and timing of debt obligations.

Leases expire over a range of years from 2025 to 2038. Most of the leases contain renewal or purchase options, subject to various terms and conditions. See Note 14 to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for more information on the nature and timing of lease obligations.

Purchase obligations primarily consist of contractual commitments to purchase certain inventories at fixed prices. At December 31, 2024, the Company had $695.9 million of purchase obligations due within one year and $66.0 million of purchase obligations due in more than one year.

The Company has standby letters of credit and surety bonds of $173.1 million related to performance and payment guarantees at December 31, 2024. Based on experience with these arrangements, the Company believes that any obligations that may arise will not be material to its financial position.

Non-GAAP Financial Measures

EBITDA represents earnings before interest, income taxes, depreciation and amortization. EBITDA is presented because the Company is aware that it is used by rating agencies, securities analysts, investors and other parties in evaluating the Company. It should not be considered, however, as an alternative to operating income as an indicator of the Company's operating performance or as an alternative to cash flows as a measure of the Company's overall liquidity as presented in the Company's consolidated financial statements. Furthermore, EBITDA measures shown for the Company may not be comparable to similarly titled measures used by other companies. The following table presents the reconciliation of net income reported in accordance with U.S. generally accepted accounting principles ("GAAP") to EBITDA:

	Year Ended December 31,		
	2024	**2023**	**2022**
		(In millions)	
Net income	**$ 1,376.1**	$ 1,313.2	$ 1,159.5
Add (deduct):			
Interest expense	**113.0**	81.8	83.2
Interest income	**(5.8)**	(11.1)	(1.7)
Income taxes	**285.4**	293.2	269.2
Depreciation	**135.3**	122.5	113.7
Amortization	**247.7**	215.1	205.8
Total adjustments	**775.6**	701.5	670.2
EBITDA	**$ 2,151.7**	$ 2,014.7	$ 1,829.7

Free cash flow represents cash flow from operating activities less capital expenditures. Free cash flow is presented because the Company is aware that it is used by rating agencies, securities analysts, investors and other parties in evaluating the Company. The following table presents the reconciliation of cash flow from operating activities reported in accordance with U.S. GAAP to free cash flow:

	Year Ended December 31,		
	2024	2023	2022
	(In millions)		
Cash provided by operating activities	**$ 1,828.8**	$ 1,735.3	$ 1,149.4
Deduct: Capital expenditures	**(127.1)**	(136.2)	(139.0)
Free cash flow	**$ 1,701.7**	$ 1,599.1	$ 1,010.4

Net debt represents total debt, net minus cash and cash equivalents. Net debt is presented because the Company is aware that it is used by rating agencies, securities analysts, investors and other parties in evaluating the Company. The following table presents the reconciliation of total debt, net reported in accordance with U.S. GAAP to net debt:

	December 31,	
	2024	2023
	(In millions)	
Total debt, net	**$ 2,079.7**	$ 3,313.3
Less: Cash and cash equivalents	**(374.0)**	(409.8)
Net debt	**1,705.7**	2,903.5
Stockholders' equity	**9,655.3**	8,730.2
Capitalization (net debt plus stockholders' equity)	**$ 11,361.0**	$ 11,633.7
Net debt as a percentage of capitalization	**15.0 %**	25.0 %

Internal Reinvestment

Capital Expenditures

Capital expenditures were $127.1 million or 1.8% of net sales in 2024, compared with $136.2 million or 2.1% of net sales in 2023. Capital expenditures in 2025 are expected to be approximately 2% of net sales, with a continued emphasis on spending to improve productivity.

Research, Development and Engineering

The Company is committed to, and has consistently invested in, research, development and engineering activities to design and develop new and improved products and solutions. Research, development and engineering costs were $371.9 million in 2024, $351.7 million in 2023 and $322.1 million in 2022. These amounts included research and development expenses of $236.6 million, $220.8 million and $198.8 million in 2024, 2023, and 2022, respectively. All such expenditures were directed toward the development of new products and solutions and the improvement of existing products and solutions.

Environmental Matters

Information with respect to environmental matters is set forth in Note 13 to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

Critical accounting policies are those policies that can have a significant impact on the presentation of the Company's financial condition and results of operations and that require the use of complex and subjective estimates based on the Company's historical experience and management's judgment. Because of the uncertainty inherent in such estimates, actual results may differ materially from the estimates used. Below are the policies used in preparing the Company's financial statements that management believes are the most dependent upon the application of estimates and assumptions. A complete list of the Company's significant accounting policies is in Note 1 to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

- *Business Combinations.* The Company allocates the purchase price of an acquired company, including when applicable, the acquisition date fair value of contingent consideration between tangible and intangible assets acquired and liabilities assumed from the acquired business based on their estimated fair values, with the residual of the purchase price recorded as goodwill. Third party appraisal firms and other consultants are engaged to assist management in determining the fair values of certain assets acquired and liabilities assumed. In the absence of a third party appraisal, the Company uses internal valuation estimates based on pertinent data from comparable prior acquisitions. Estimating fair values requires significant judgments, estimates and assumptions, including but not limited to: discount rates, future cash flows and the economic lives of trade names, technology, and customer relationships. These estimates are based on historical experience and information obtained from the management of the acquired companies and are inherently uncertain.

- *Goodwill and Other Intangible Assets.* Goodwill and other intangible assets with indefinite lives, primarily trademarks and trade names, are not amortized; rather, they are tested for impairment at least annually. The Company performs either a qualitative or quantitative analysis to determine if it is more likely than not that the fair values of its reporting units are less than the respective carrying values of those reporting units. The Company elected to bypass performing the qualitative screen and performed a quantitative analysis of the goodwill impairment test in the current year. The Company may elect to perform a qualitative analysis in future periods.

  The Company principally relies on a discounted cash flow analysis to determine the fair value of each reporting unit, which considers cash flows discounted at an appropriate discount rate. The annual goodwill impairment test requires the Company to make a number of assumptions and estimates concerning future levels of revenue growth, operating margins, depreciation, amortization and working capital requirements, which are based on the Company's long-range plan and are considered level 3 inputs. The discount rate is an estimate of the overall after-tax rate of return required by a market participant whose weighted average cost of capital includes both equity and debt, including a risk premium. While the Company uses the best available information to prepare its cash flow and discount rate assumptions, actual future cash flows or market conditions could differ significantly resulting in future impairment charges related to recorded goodwill balances. While there are always changes in assumptions to reflect changing business and market conditions, the Company's overall methodology and the population of assumptions used have remained unchanged. In order to evaluate the sensitivity of the goodwill impairment test to changes in the fair value calculations, the Company applied a hypothetical 10% decrease in fair values of each reporting unit. The 2024 results (expressed as a percentage of carrying value for the respective reporting unit) showed that, despite the hypothetical 10% decrease in fair value, the fair values of the Company's reporting units still exceeded their respective carrying values by 95% to 388%.

  The impairment test for indefinite-lived intangibles other than goodwill (primarily trademarks and trade names) consists of a comparison of the estimated fair value of the indefinite-lived intangible asset to the carrying value of the asset as of the impairment testing date. The Company can elect to perform a qualitative analysis to determine if it is more likely than not that the fair values of its indefinite-lived intangible assets are less than the respective carrying values of those assets. The Company elected to bypass the performing the qualitative screen. The Company may elect to perform the qualitative analysis in future periods. The Company estimates the fair value of its indefinite-lived intangibles using the relief from royalty method using level 3 inputs, which is a widely used valuation technique for such assets. The fair value derived from the relief from royalty method is determined by applying a royalty rate to a projection of net revenues discounted using an appropriate discount rate. Each royalty rate is determined based on the profitability of the trade name to which it relates and observed market royalty rates. Certain impairment models have discount rates calculated based on a debt/equity cost of capital. While the Company uses the best available information to prepare its cash flow and discount rate assumptions, actual future cash flows or market conditions could differ significantly resulting in future impairment charges related to recorded intangible balances. While there are always changes in assumptions to reflect changing business and market conditions, the Company's overall methodology and the population of assumptions used have remained unchanged.

The Company's acquisitions have generally included a significant goodwill component and the Company expects to continue to make acquisitions. At December 31, 2024, goodwill and other indefinite-lived intangible assets totaled $7,579.2 million or 51.8% of the Company's total assets. The Company completed its required annual impairment tests in the fourth quarter of 2024 and determined that the carrying values of the Company's goodwill and indefinite-lived intangibles were not impaired. There can be no assurance that goodwill or indefinite-lived intangibles impairment will not occur in the future.

- *Income Taxes.* The process of providing for income taxes and determining the related balance sheet accounts requires management to assess uncertainties, make judgments regarding outcomes and utilize estimates. The Company conducts a broad range of operations around the world and is therefore subject to complex tax regulations in numerous international taxing jurisdictions, resulting at times in tax audits, disputes and potential litigation, the outcome of which is uncertain. Management must make judgments currently about such uncertainties and determine estimates of the Company's tax assets and liabilities. To the extent the final outcome differs, future adjustments to the Company's tax assets and liabilities may be necessary.

  The Company assesses the realizability of its deferred tax assets, taking into consideration the Company's forecast of future taxable income, available net operating loss carryforwards and available tax planning strategies that could be implemented to realize the deferred tax assets. Based on this assessment, management must evaluate the need for, and the amount of, valuation allowances against the Company's deferred tax assets. To the extent facts and circumstances change in the future, adjustments to the valuation allowances may be required.

  The Company assesses the uncertainty in its tax positions by applying a minimum recognition threshold which a tax position is required to meet before a tax benefit is recognized in the financial statements. Once the minimum threshold is met, using a more likely than not standard, a series of probability estimates is made for each item to properly measure and record a tax benefit. The tax benefit recorded is generally equal to the highest probable outcome that is more than 50% likely to be realized after full disclosure and resolution of a tax examination. The underlying probabilities are determined based on the best available objective evidence such as recent tax audit outcomes, published guidance, external expert opinion, or by analogy to the outcome of similar issues in the past. There can be no assurance that these estimates will ultimately be realized given continuous changes in tax policy, legislation and audit practice. The Company recognizes interest and penalties accrued related to uncertain tax positions in income tax expense.

Recent Accounting Pronouncements

See Note 2, Recent Accounting Pronouncements, to the Company's Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for information regarding recently issued accounting pronouncements.

Forward-Looking Information

Certain matters discussed in this Form 10-K are "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995 ("PSLRA"), which involve risk and uncertainties that exist in the Company's operations and business environment and can be affected by inaccurate assumptions, or by known or unknown risks and uncertainties. Many such factors will be important in determining the Company's actual future results. The Company wishes to take advantage of the "safe harbor" provisions of the PSLRA by cautioning readers that numerous important factors in some cases have caused, and in the future could cause, the Company's actual results to differ materially from those expressed in any forward-looking statements made by, or on behalf of, the Company. Some, but not all, of the factors or uncertainties that could cause actual results to differ from present expectations are set forth above and under Item 1A. Risk Factors. The Company undertakes no obligation to publicly update any forward-looking statements, whether as a result of new information, subsequent events or otherwise, unless required by the securities laws to do so.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

The Company's primary exposures to market risk are fluctuations in interest rates and foreign currency exchange rates, which could impact its financial condition and results of operations. The Company addresses its exposure to these risks through its normal operating and financing activities. The Company's differentiated and global business activities help to reduce the impact that any particular market risk may have on its operating income as a whole.

The Company's short-term debt carries variable interest rates and generally its long-term debt carries fixed rates. These financial instruments are more fully described in the Notes to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

The foreign currencies to which the Company has the most significant exchange rate exposure are the Euro, the British pound, the Japanese yen, the Chinese renminbi, the Canadian dollar, and the Mexican peso. The Company evaluates foreign currency exposures on a centralized basis and aims to balance, where possible, non-functional currency denominated assets to non-functional currency denominated liabilities to have a natural hedge and minimize foreign exchange impacts. In the event a natural hedge is not available, the Company takes steps to mitigate foreign currency risk through the use of local borrowings and occasional derivative financial instruments in the currency affected. The effect of translating foreign subsidiaries' balance sheets into U.S. dollars is included in other comprehensive income within stockholders' equity. Foreign currency transactions have not had a significant effect on the operating results reported by the Company because revenues and costs associated with the revenues are generally transacted in the same foreign currencies.

Based on a hypothetical ten percent adverse movement in interest rates or foreign currency exchange rates, the Company's best estimate is that the potential losses in future earnings, fair value of risk-sensitive financial instruments and cash flows are not material, although the actual effects may differ materially from the hypothetical analysis.

Item 8. Financial Statements and Supplementary Data

Index to Financial Statements (Item 15(a)(1))

Financial Statement Schedules (Item 15(a)(2))

Financial statement schedules have been omitted because either they are not applicable, or the required information is included in the financial statements or the notes thereto.

Management’s Responsibility for Financial Statements

Management has prepared and is responsible for the integrity of the consolidated financial statements and related information. The statements are prepared in conformity with U.S. generally accepted accounting principles consistently applied and include certain amounts based on management’s best estimates and judgments. Historical financial information elsewhere in this report is consistent with that in the financial statements.

In meeting its responsibility for the reliability of the financial information, management maintains a system of internal accounting and disclosure controls, including an internal audit program. The system of controls provides for appropriate division of responsibility and the application of written policies and procedures. That system, which undergoes continual reevaluation, is designed to provide reasonable assurance that assets are safeguarded, and records are adequate for the preparation of reliable financial data.

Management is responsible for establishing and maintaining adequate internal control over financial reporting. AMETEK, Inc. maintains a system of internal controls that is designed to provide reasonable assurance as to the fair and reliable preparation and presentation of the consolidated financial statements; however, there are inherent limitations in the effectiveness of any system of internal controls.

Management recognizes its responsibility for conducting the Company’s activities according to the highest standards of personal and corporate conduct. That responsibility is characterized and reflected in a code of business conduct for all employees and in a financial code of ethics for the Chief Executive Officer and Senior Financial Officers, as well as in other key policy statements publicized throughout the Company.

The Audit Committee of the Board of Directors, which is composed solely of independent directors who are not employees of the Company, meets with the independent registered public accounting firm, the internal auditors and management to satisfy itself that each is properly discharging its responsibilities. The report of the Audit Committee is included in the Company’s Proxy Statement for the 2025 Annual Meeting of Stockholders. Both the independent registered public accounting firm and the internal auditors have direct access to the Audit Committee.

The Company’s independent registered public accounting firm, Ernst & Young LLP, is engaged to render an opinion as to whether management’s financial statements present fairly, in all material respects, the Company’s financial position and operating results. This report is included herein.

Management’s Report on Internal Control over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in the Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, AMETEK, Inc. conducted an evaluation of the effectiveness of the Company’s internal control over financial reporting as of December 31, 2024 based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on that evaluation, our management concluded that the Company’s internal control over financial reporting was effective as of December 31, 2024.

The Company acquired Virtek Vision International ("Virtek") in October 2024. As permitted by the U.S. Securities and Exchange Commission staff interpretative guidance for newly acquired businesses, the Company excluded Virtek from management’s assessment of the effectiveness of the Company’s internal control over financial reporting as of December 31, 2024. Virtek constituted 0.9% of total assets as of December 31, 2024 and 0.2% of net sales for the year then ended.

The Company’s internal control over financial reporting as of December 31, 2024 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

/s/ DAVID A. ZAPICO	/s/ DALIP M. PURI
Chairman of the Board and Chief Executive Officer	Executive Vice President – Chief Financial Officer

February 20, 2025

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM ON INTERNAL CONTROL OVER FINANCIAL REPORTING

To the Shareholders and the Board of Directors of AMETEK, Inc.

Opinion on Internal Control over Financial Reporting

We have audited AMETEK, Inc.'s internal control over financial reporting as of December 31, 2024, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, AMETEK, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2024, based on the COSO criteria.

As indicated in the accompanying *Management's Report on Internal Control over Financial Reporting*, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Virtek Vision International ("Virtek"), which are included in the 2024 consolidated financial statements of the Company and constituted 0.9% of total assets as of December 31, 2024 and 0.2% of net sales for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of Virtek.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of AMETEK, Inc. as of December 31, 2024 and 2023, the related consolidated statements of income, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2024, and the related notes and our report dated February 20, 2025 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying *Management's Report on Internal Control over Financial Reporting*. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ ERNST & YOUNG LLP

Philadelphia, Pennsylvania

February 20, 2025

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of AMETEK, Inc.:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of AMETEK, Inc. (the Company) as of December 31, 2024 and 2023, the related consolidated statements of income, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2024, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2024 and 2023, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2024, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2024, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 20, 2025 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing a separate opinion on the critical audit matters or on the accounts or disclosures to which they relate.

Impairment Assessment of Indefinite-Lived Intangible Assets (other than Goodwill)

Description of the Matter	At December 31, 2024, the Company's indefinite-lived intangible assets (other than goodwill) totaled $1,023.3 million, consisting of trademarks and trade names. As described in Note 1 to the consolidated financial statements, indefinite-lived intangible assets are not amortized but are tested for impairment at least annually in the Company's fourth quarter. Auditing management's indefinite-lived intangible asset impairment tests was complex and highly judgmental due to the significant measurement uncertainty in estimating the fair value of the trademarks and trade names. In particular, the fair value estimates were sensitive to significant assumptions such as discount rate, forecasted revenues and royalty rates, which are affected by expectations about future market or economic conditions.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's indefinite-lived intangible asset impairment process. For example, we tested controls over management's review of the valuation models and significant assumptions, including forecasted financial information, as well as management's controls to validate that the data used in the valuations was complete and accurate. To test the estimated fair value of the Company's indefinite-lived intangible assets, we performed audit procedures that included, among others, assessing the fair value methodologies utilized by management and the significant assumptions discussed above, including the underlying data used in the analyses. For example, when evaluating the significant assumptions, we compared them to current financial and operating plans, market and industry studies, historical trends, and royalty rates used in prior periods. We also assessed the historical accuracy of management's forecasts and performed sensitivity analyses of significant assumptions to evaluate the changes in the fair value estimates of the trademarks and trade names that would result from changes in the assumptions. We involved our valuation specialists to assist in evaluating the discount rate, royalty rate and valuation methodologies used by the Company.

Estimating the Fair Value of the Intangibles from the Acquisition of Paragon Medical

Description of the Matter	As described in Note 6 to the consolidated financial statements, the Company completed the acquisition of Paragon Medical in December 2023 for consideration of $1.9 billion, net of cash acquired. The preliminary estimates of the fair value of intangible assets made as of the acquisition date were revised during the measurement period in 2024 as the third-party valuation was received and finalized. This third-party valuation resulted in adjustments to the preliminary estimates of the fair value of the intangible assets for the indefinite-lived trade name, customer relationships, and purchased technology. As of December 31, 2024, the purchase price allocated to intangible assets (other than goodwill) was $852.3 million. Auditing the Company's accounting for its acquisition of Paragon Medical was complex due to the significant estimation uncertainty, particularly in estimating the fair values of the customer relationships and the trade name intangible assets. The Company used the multi-period excess earnings method to value the customer relationship intangible asset and relief from royalty method to value the trade name intangible asset. The significant assumptions used to estimate the fair value of customer relationships included the forecasted revenue growth, forecasted EBITDA margin and discount rate. The significant assumptions used to estimate the fair value of the trade name included the forecasted revenue growth and royalty rate. All of these significant assumptions are affected by expectations about future market or economic conditions.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's estimation of the fair value of the material acquired intangible assets of Paragon Medical. For example, we tested controls over the valuation of acquired identifiable intangible assets, including controls over management's review of the valuation models and the significant assumptions described above, review of forecasted financial information, as well as verification of underlying data used in the analyses. To test the estimated fair value of the customer relationship and trade name intangible assets for Paragon Medical, we performed audit procedures that included, among others, assessing the fair value methodologies utilized by management and the significant assumptions discussed above, including the accuracy of the underlying data used in the analyses. For example, when evaluating the significant assumptions, we compared them to current financial and operating plans, market and industry studies, and historical trends. We also performed sensitivity analyses to evaluate the changes in the fair value of the customer relationship and trade name intangible assets that would result from changes in the significant assumptions. We involved our valuation specialists to assist in evaluating the discount rate, royalty rate and valuation methodologies used by the Company.

/s/ ERNST & YOUNG LLP

We have served as the Company's auditor since 1930.

Philadelphia, Pennsylvania

February 20, 2025

AMETEK, Inc.
Consolidated Statement of Income
(In thousands, except per share amounts)

	Year Ended December 31,		
	2024	**2023**	**2022**
Net sales	**$ 6,941,180**	$ 6,596,950	$ 6,150,530
Cost of sales	**4,464,713**	4,212,485	4,005,261
Selling, general and administrative	**696,905**	677,006	644,577
Total operating expenses	**5,161,618**	4,889,491	4,649,838
Operating income	**1,779,562**	1,707,459	1,500,692
Interest expense	**(112,962)**	(81,795)	(83,186)
Other (expense) income, net	**(5,061)**	(19,252)	11,186
Income before income taxes	**1,661,539**	1,606,412	1,428,692
Provision for income taxes	**285,415**	293,224	269,150
Net income	**$ 1,376,124**	$ 1,313,188	$ 1,159,542
Basic earnings per share	**$ 5.95**	$ 5.70	$ 5.04
Diluted earnings per share	**$ 5.93**	$ 5.67	$ 5.01
Weighted average common shares outstanding:			
Basic shares	**231,256**	230,519	230,208
Diluted shares	**232,168**	231,509	231,536

See accompanying notes.

AMETEK, Inc.
Consolidated Statement of Comprehensive Income
(In thousands)

	Year Ended December 31,		
	2024	**2023**	**2022**
Net income	**$ 1,376,124**	$ 1,313,188	$ 1,159,542
Other comprehensive income (loss):			
Amounts arising during the period – gains (losses), net of tax (expense) benefit:			
Foreign currency translation:			
Translation adjustments	**(124,959)**	88,613	(123,756)
Change in long-term intercompany notes	**(2,748)**	5,420	(21,419)
Net investment hedge instruments gain (loss), net of tax of $(11,207), $8,058 and ($17,070) in 2024, 2023 and 2022, respectively	**34,409**	(24,744)	52,416
Defined benefit pension plans:			
Net actuarial gain (loss), net of tax of $(4,936), $(3,396) and $4,769 in 2024, 2023 and 2022, respectively	**15,145**	11,869	(18,238)
Amortization of net actuarial loss, net of tax of ($2,341), ($2,801) and ($2,111) in 2024, 2023 and 2022, respectively	**7,278**	8,769	6,420
Amortization of prior service costs, net of tax of $(26), ($25) and ($25) in 2024, 2023 and 2022, respectively	**78**	76	76
Other comprehensive (loss) income	**(70,797)**	90,003	(104,501)
Total comprehensive income	**$ 1,305,327**	$ 1,403,191	$ 1,055,041

See accompanying notes.

AMETEK, Inc.
Consolidated Balance Sheet
(In thousands, except share amounts)

	December 31,	
	2024	**2023**
ASSETS		
Current assets:		
Cash and cash equivalents	**$ 373,999**	$ 409,804
Receivables	**948,830**	1,012,932
Inventories, net	**1,021,713**	1,132,471
Other current assets	**258,490**	269,461
Total current assets	**2,603,032**	2,824,668
Property, plant and equipment, net	**818,611**	891,293
Right of use assets, net	**235,666**	229,723
Goodwill	**6,555,877**	6,447,629
Other intangibles, net	**3,915,173**	4,165,317
Investments and other assets	**502,810**	464,903
Total assets	**$ 14,631,169**	$ 15,023,533
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings and current portion of long-term debt, net	**$ 654,346**	$ 1,417,915
Accounts payable	**523,332**	516,588
Customer advanced payments	**363,555**	375,513
Income taxes payable	**84,428**	69,567
Accrued liabilities and other	**472,926**	502,990
Total current liabilities	**2,098,587**	2,882,573
Long-term debt, net	**1,425,375**	1,895,432
Deferred income taxes	**831,030**	836,695
Other long-term liabilities	**620,873**	678,642
Total liabilities	**4,975,865**	6,293,342
Stockholders' equity:		
Preferred stock,$0.01 par value; authorized 5,000,000 shares; none issued	**—**	—
Common stock, $0.01 par value; authorized 800,000,000 shares; issued: 2024 – 270,064,222 shares; 2023 – 269,284,250 shares	**2,720**	2,709
Capital in excess of par value	**1,264,670**	1,168,694
Retained earnings	**11,057,684**	9,940,343
Accumulated other comprehensive loss	**(555,739)**	(484,942)
Treasury stock: 2024 – 39,364,801 shares; 2023 – 38,354,154 shares	**(2,114,031)**	(1,896,613)
Total stockholders' equity	**9,655,304**	8,730,191
Total liabilities and stockholders' equity	**$ 14,631,169**	$ 15,023,533

See accompanying notes.

AMETEK, Inc.
Consolidated Statement of Stockholders' Equity
(In thousands)

	Year Ended December 31,		
	2024	**2023**	**2022**
Capital stock			
Preferred stock, $0.01 par value	$ —	$ —	$ —
Common stock, $0.01 par value			
Balance at the beginning of the year	**2,709**	2,700	2,689
Shares issued	**11**	9	11
Balance at the end of the year	**2,720**	2,709	2,700
Capital in excess of par value			
Balance at the beginning of the year	**1,168,694**	1,094,236	1,012,526
Issuance of common stock under employee stock plans	**48,113**	28,259	34,335
Share-based compensation costs	**47,863**	46,199	47,375
Balance at the end of the year	**1,264,670**	1,168,694	1,094,236
Retained earnings			
Balance at the beginning of the year	**9,940,343**	8,857,485	7,900,113
Net income	**1,376,124**	1,313,188	1,159,542
Cash dividends paid	**(258,782)**	(230,329)	(202,169)
Other	**(1)**	(1)	(1)
Balance at the end of the year	**11,057,684**	9,940,343	8,857,485
Accumulated other comprehensive (loss) income			
Foreign currency translation:			
Balance at the beginning of the year	**(298,835)**	(368,124)	(275,365)
Translation adjustments	**(124,959)**	88,613	(123,756)
Change in long-term intercompany notes	**(2,748)**	5,420	(21,419)
Net investment hedge instruments (loss) gain, net of tax of $(11,207), $8,058 and ($17,070) in 2024, 2023 and 2022, respectively	**34,409**	(24,744)	52,416
Balance at the end of the year	**(392,133)**	(298,835)	(368,124)
Defined benefit pension plans:			
Balance at the beginning of the year	**(186,107)**	(206,821)	(195,079)
Net actuarial gain (loss), net of tax of $(4,936), $(3,396) and $4,769 in 2024, 2023 and 2022, respectively	**15,145**	11,869	(18,238)
Amortization of net actuarial loss, net of tax of ($2,341), ($2,801) and ($2,111) in 2024, 2023 and 2022, respectively	**7,278**	8,769	6,420
Amortization of prior service costs, net of tax of $(26), ($25) and ($25) in 2024, 2023 and 2022, respectively	**78**	76	76
Balance at the end of the year	**(163,606)**	(186,107)	(206,821)
Accumulated other comprehensive loss at the end of the year	**(555,739)**	(484,942)	(574,945)
Treasury stock			
Balance at the beginning of the year	**(1,896,613)**	(1,902,964)	(1,573,000)
Issuance of common stock under employee stock plans	**5,654**	14,123	2,857
Purchase of treasury stock	**(223,072)**	(7,772)	(332,821)
Balance at the end of the year	**(2,114,031)**	(1,896,613)	(1,902,964)
Total stockholders' equity	**$ 9,655,304**	$ 8,730,191	$ 7,476,512

See accompanying notes.

AMETEK, Inc.
Consolidated Statement of Cash Flows
(In thousands)

	Year Ended December 31,		
	2024	**2023**	**2022**
Cash provided by (used for):			
Operating activities:			
Net income	**$ 1,376,124**	$ 1,313,188	$ 1,159,542
Adjustments to reconcile net income to total operating activities:			
Depreciation and amortization	**382,927**	337,636	319,427
Deferred income taxes	**(12,943)**	(91,903)	(67,818)
Share-based compensation expense	**47,863**	46,199	47,375
Gain on sale of business/investment	**—**	—	(3,584)
Gain on sale of facilities	**(995)**	(120)	(7,054)
Changes in assets and liabilities, net of acquisitions:			
Decrease (increase) in receivables	**53,488**	8,451	(86,713)
Decrease (increase) in inventories and other current assets	**72,997**	56,619	(322,467)
(Decrease) increase in payables, accruals and income	**(18,480)**	10,433	95,481
(Decrease) increase in other long-term liabilities	**(41,332)**	67,283	47,226
Pension contributions	**(8,694)**	(8,671)	(8,959)
Other, net	**(22,107)**	(3,819)	(23,083)
Total operating activities	**1,828,848**	1,735,296	1,149,373
Investing activities:			
Additions to property, plant and equipment	**(127,075)**	(136,249)	(139,005)
Purchases of businesses, net of cash acquired	**(117,514)**	(2,237,910)	(429,714)
Proceeds from sale of business/investment	**—**	—	3,734
Proceeds from sale of facilities	**4,246**	880	11,754
Other, net	**(4,465)**	(3,151)	471
Total investing activities	**(244,808)**	(2,376,430)	(552,760)
Financing activities:			
Net change in short-term borrowings	**(889,737)**	892,282	(73,691)
Repayments of long-term borrowings	**(300,000)**	—	—
Repurchases of common stock	**(212,027)**	(7,772)	(332,821)
Cash dividends paid	**(258,782)**	(230,329)	(202,169)
Proceeds from stock option exercises	**66,868**	50,850	49,937
Other, net	**(8,776)**	(7,748)	(16,955)
Total financing activities	**(1,602,454)**	697,283	(575,699)
Effect of exchange rate changes on cash and cash equivalents	**(17,391)**	8,269	(22,300)
(Decrease) increase in cash and cash equivalents	**(35,805)**	64,418	(1,386)
Cash and cash equivalents:			
Beginning of year	409,804	345,386	346,772
End of year	**$ 373,999**	$ 409,804	$ 345,386

See accompanying notes.

1. Significant Accounting Policies

Basis of Consolidation

The accompanying consolidated financial statements reflect the results of operations, financial position and cash flows of AMETEK, Inc. (the "Company"), and include the accounts of the Company and subsidiaries, after elimination of all intercompany transactions in the consolidation.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates and assumptions.

Cash Equivalents, Securities and Other Investments

All highly liquid investments with maturities of three months or less when purchased are considered cash equivalents.

Accounts Receivable

The Company maintains allowances for estimated credit losses resulting from the inability of customers to meet their financial obligations to the Company. The Company recognizes an allowance for credit losses, on all accounts receivable and contract assets, which considers risk of future credit losses based on factors such as historical experience, contract terms, as well as general and market business conditions, country, and political risk. Balances are written off when considered uncollectible. The following table provides a roll forward of the allowance for estimated credit losses:

	2024	2023
	(in thousands)	
Balance at January 1	**$ 13,167**	$ 14,102
Bad debt expense	**2,546**	3,984
Amounts written off charged against allowance	**(2,506)**	(4,908)
Foreign currency translation and other	**(175)**	(11)
Balance at December 31	**$ 13,032**	$ 13,167

Inventories

The Company predominantly uses the first-in, first-out ("FIFO") method of inventory accounting, which approximates current replacement cost, at December 31, 2024. The last-in, first-out ("LIFO") method of accounting is used to determine cost for 10% of the Company's inventory at December 31, 2024. For inventories where cost is determined by the LIFO method, the FIFO value would have been $40.8 million and $39.0 million higher than the LIFO value reported in the consolidated balance sheet at December 31, 2024 and 2023, respectively. The Company provides estimated inventory reserves for slow-moving and obsolete inventory based on current assessments about future demand, market conditions, customers who may be experiencing financial difficulties and related management initiatives.

Business Combinations

The Company allocates the purchase price of an acquired company, including when applicable, the acquisition date fair value of contingent consideration between tangible and intangible assets acquired and liabilities assumed from the acquired business based on their estimated fair values, with the residual of the purchase price recorded as goodwill. The results of operations of the acquired business are included in the Company's operating results from the date of acquisition.

Property, Plant and Equipment

Property, plant and equipment are stated at cost. Expenditures for additions to plant facilities, or that extend their useful lives, are capitalized. The cost of minor tools, jigs and dies, and maintenance and repairs is charged to expense as incurred. Depreciation of plant and equipment is calculated principally on a straight-line basis over the estimated useful lives of the related assets. The range of lives for depreciable assets is generally three to 10 years for machinery and equipment, five to 27 years for leasehold improvements and 25 to 50 years for buildings. Depreciation expense was $135.3 million, $122.5 million and $113.7 million for the years ended December 31, 2024, 2023, and 2022, respectively.

Goodwill and Other Intangible Assets

Goodwill and other intangible assets with indefinite lives, primarily trademarks and trade names, are not amortized; rather, they are tested for impairment at least annually.

The Company identifies its reporting units at the component level, which is one level below its operating segments. Generally, goodwill arises from acquisitions of specific operating companies and is assigned to the reporting unit in which the operating company resides. The Company's reporting units are divisions that are one level below its operating segments and for which discrete financial information is prepared and regularly reviewed by segment management.

The Company principally relies on a discounted cash flow analysis to determine the fair value of each reporting unit, which considers cash flows discounted at an appropriate discount rate. The Company believes that market participants would use a discounted cash flow analysis to determine the fair value of its reporting units in a sale transaction. The annual goodwill impairment test requires the Company to make a number of assumptions and estimates concerning future levels of revenue growth, operating margins, depreciation, amortization and working capital requirements, which are based on the Company's long-range plan and are considered level 3 inputs. The Company's long-range plan is updated as part of its annual planning process and is reviewed and approved by management. The discount rate is an estimate of the overall after-tax rate of return required by a market participant whose weighted average cost of capital includes both equity and debt, including a risk premium.

The impairment test for indefinite-lived intangibles other than goodwill (primarily trademarks and trade names) consists of a comparison of the estimated fair value of the indefinite-lived intangible asset to the carrying value of the asset as of the impairment testing date. The Company estimates the fair value of its indefinite-lived intangibles using the relief from royalty method using level 3 inputs for revenue growth rates and royalty rates. The fair value derived from the relief from royalty method is measured as the discounted cash flow savings realized from owning such trademarks and trade names and not having to pay a royalty for their use.

The Company completed its required annual impairment tests as of October 1, 2024, 2023, and 2022 and determined that the carrying values of the Company's goodwill were not impaired. The Company completed its required annual indefinite-lived intangibles impairment test as of October 1, 2024 and determined that the carrying values of the Company's trademarks and trade names with indefinite lives were not impaired. The Company completed its required annual impairment test in the fourth quarter of 2023 and 2022 and determined that the carrying values of certain of the Company's trademarks and trade names with indefinite lives were impaired and as a result, during the fourth quarter of 2023 and 2022, the Company recorded an immaterial non-cash impairment charge related to certain of the Company's trade names.

Other intangible assets with finite lives are evaluated for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. The carrying value of other intangible assets with finite lives is considered impaired when the total projected undiscounted cash flows from the asset group are less than the carrying value. In that event, a loss is recognized based on the amount by which the carrying value exceeds the fair value of those assets. Fair value is determined primarily using present value techniques based on projected cash flows from the asset group.

Intangible assets, other than goodwill, with definite lives are amortized over their estimated useful lives. Patents and technology are being amortized over useful lives of nine to 20 years, with a weighted average life of 15 years. Customer relationships are being amortized over a period of ten to 20 years, with a weighted average life of 20 years. On a quarterly basis, the Company evaluates the reasonableness of the estimated useful lives of these intangible assets.

Financial Instruments and Foreign Currency Translation

Assets and liabilities of foreign operations are translated using exchange rates in effect at the balance sheet date and their results of operations are translated using average exchange rates for the year. Certain transactions of the Company and its subsidiaries are denominated in currencies other than their functional currency. Exchange gains and losses from those transactions are included in operating results for the year.

The Company makes infrequent use of derivative financial instruments. Forward contracts are primarily entered into from time to time to hedge debt or foreign currency transactions, thereby minimizing the Company’s exposure to foreign currency fluctuation.

In instances where transactions are designated as hedges of an underlying item, the gains and losses on those transactions are included in accumulated other comprehensive income within stockholders’ equity to the extent they are effective as hedges. An evaluation of hedge effectiveness is performed by the Company at inception and on an ongoing basis and any changes in the hedge are made as appropriate.

Leases

The Company determines if an arrangement is a lease at inception. This determination generally depends on whether the arrangement conveys to the Company the right to control the use of an explicitly or implicitly identified fixed asset for a period of time in exchange for consideration. The Company has lease agreements which include lease and non-lease components, which the Company has elected to account for as a single lease component for all classes of underlying assets. Lease expense for variable lease components are recognized when the obligation is probable.

Operating leases are included in right-of-use ("ROU") assets, accrued liabilities and other, and other long-term liabilities on our consolidated balance sheets. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. Operating lease payments are recognized as lease expense on a straight-line basis over the lease term. The Company primarily leases buildings (real estate) and automobiles which are classified as operating leases.

The lease term for all of the Company’s leases includes the non-cancellable period of the lease plus any additional periods covered by either a Company option to extend (or not to terminate) the lease that the Company is reasonably certain to exercise, or an option to extend (or not to terminate) the lease controlled by the lessor. Options for lease renewals have been excluded from the lease term (and lease liability) for the majority of the Company’s leases as the reasonably certain threshold is not met.

Lease payments included in the measurement of the lease liability are comprised of fixed and variable payments that depend on an index or rate.

Variable lease payments not dependent on a rate or index associated with the Company’s leases are recognized when the events, activities, or circumstances in the lease agreement on which those payments are assessed are probable. Variable lease payments are presented as operating expense in the Company’s income statement in the same line item as expense arising from fixed lease payments. Cash used in operations for operating leases is not materially different than total lease costs.

Revenue Recognition

Revenue is derived from sales of products and services. The Company's products and services are marketed and sold worldwide through two operating groups: EIG and EMG. See Note 15 *Descriptive Information about Reportable Segments.*

The majority of the Company's revenues on product sales were recognized at a point in time when the customer obtains control of the product. The transfer in control of the product to the customer was typically evidenced by one or more of the following: the customer having legal title to the product, the Company's present right to payment, the customer's physical possession of the product, the customer accepting the product, or the customer having the benefits of ownership or risk of loss. For a small percentage of sales where title and risk of loss transfers at the point of delivery, the Company recognized revenue upon delivery to the customer, which is the point that control transferred, assuming all other criteria for revenue recognition were met.

The Company determined that revenues from certain of its customer contracts met the criteria of satisfying its performance obligations over time, primarily in the areas of the manufacture of custom-made equipment and for service repairs of customer-owned equipment. Recognizing revenue over time for custom-manufactured equipment is based on the Company's judgment that, in certain contracts, the product does not have an alternative use and the Company has an enforceable right to payment for performance completed to date.

The Company recognizes incremental cost of obtaining contracts as an expense when incurred if the amortization period of the contract cost assets that the Company would have otherwise recognized is one year or less. These costs are included in Selling, general and administrative expenses in the consolidated statement of income.

The determination of the revenue to be recognized in each period for performance obligations satisfied over time is based on the input method. The Company recognizes revenue over time as it performs on these contracts because the transfer of control to the customer occurs over time. Revenue is recognized based on the extent of progress towards completion of the performance obligation. The Company generally uses the total cost-to-cost input method of progress because it best depicts the transfer of control to the customer that occurs as costs are incurred. Under the cost-to-cost method, the extent of progress towards completion is measured based on the proportion of costs incurred to date to the total estimated costs at completion of the performance obligation. On certain contracts, labor hours are used as the measure of progress when it is determined to be a better depiction of the transfer of control to the customer due to the timing and pattern of labor hours incurred.

Performance obligations also include post-delivery service, installation and training. Post-delivery service revenues are recognized over the contract term. Installation and training revenues are recognized over the period the service is provided. Warranty terms in customer contracts can also be considered separate performance obligations if the warranty provides services beyond assurance that a product complies with agreed-upon specification or if a warranty can be purchased separately. The Company does not incur significant obligations for customer returns and refunds.

The Company has certain contracts with variable consideration in the form of volume discounts, rebates and early payment options, which may affect the transaction price used as the basis for revenue recognition.

Payment terms generally begin upon shipment of the product. The Company does have contracts with multiple billing terms that are all due within one year from when the product is delivered. No significant financing component exists. Payment terms are generally 30-60 days from the time of shipment or customer acceptance, but terms can be shorter or longer, not exceeding one year. For customer contracts that have revenue recognized over time, revenue is generally recognized prior to a payment being due from the customer. In such cases, the Company recognizes a contract asset at the time the revenue is recognized. When payment becomes due based on the contract terms, the Company reduces the contract asset and records a receivable. In contracts with billing milestones or in other instances with a long production cycle or concerns about credit, customer advance payments are received. The

Company may receive a payment in excess of revenue recognized to that date. In these circumstances, a contract liability is recorded. Contract liabilities are derecognized when the performance obligations are satisfied, and revenue is recognized.

Research and Development

Research and development costs are included in Cost of sales as incurred and were $236.6 million in 2024, $220.8 million in 2023 and $198.8 million in 2022.

Shipping and Handling Costs

Shipping and handling costs are included in Cost of sales and were $87.6 million in 2024, $77.9 million in 2023 and $103.7 million in 2022.

Share-Based Compensation

The Company expenses the fair value of share-based awards made under its share-based plans in the consolidated financial statements over their requisite service period of the grants.

Income Taxes

The Company conducts a broad range of operations around the world and is therefore subject to complex tax regulations in numerous international taxing jurisdictions, resulting at times in tax audits, disputes and potential litigation, the outcome of which is uncertain. Management must make judgments currently about such uncertainties and determine estimates of the Company’s tax assets and liabilities. To the extent the final outcome differs, future adjustments to the Company’s tax assets and liabilities may be necessary.

The Company assesses the realizability of its deferred tax assets, taking into consideration the Company’s forecast of future taxable income, available net operating loss carryforwards and available tax planning strategies that could be implemented to realize the deferred tax assets. Based on this assessment, management must evaluate the need for, and amount of, valuation allowances against the Company’s deferred tax assets.

The Company assesses the uncertainty in its tax positions, by applying a minimum recognition threshold which a tax position is required to meet before a tax benefit is recognized in the financial statements. Once the minimum threshold is met, using a more likely than not standard, a series of probability estimates is made for each item to properly measure and record a tax benefit. The tax benefit recorded is generally equal to the highest probable outcome that is more than 50% likely to be realized after full disclosure and resolution of a tax examination. The underlying probabilities are determined based on the best available objective evidence such as recent tax audit outcomes, published guidance, external expert opinion, or by analogy to the outcome of similar issues in the past. There can be no assurance that these estimates will ultimately be realized given continuous changes in tax policy, legislation and audit practice. The Company recognizes interest and penalties accrued related to uncertain tax positions in income tax expense.

Pensions

The Company has U.S. and foreign defined benefit and defined contribution pension plans. The key assumptions in determining the Company’s pension income or expense are the assumed pension liability discount rate and the expected return on plan assets. All unrecognized prior service costs, remaining transition obligations or assets and actuarial gains and losses have been recognized, net of tax effects, as a charge to accumulated other comprehensive income in stockholders’ equity and will be amortized as a component of net periodic pension cost. The Company uses a measurement date of December 31 (its fiscal year end) for its U.S. and foreign defined benefit plans.

Earnings Per Share

The calculation of basic earnings per share is based on the weighted average number of common shares considered outstanding during the periods. The calculation of diluted earnings per share reflects the effect of all potentially dilutive securities (principally outstanding stock options and restricted stock grants). The number of weighted average shares used in the calculation of basic earnings per share and diluted earnings per share was as follows for the years ended December 31:

	2024	2023	2022
		(In thousands)	
Weighted average shares:			
Basic shares	**231,256**	230,519	230,208
Equity-based compensation plans	**912**	990	1,328
Diluted shares	**232,168**	231,509	231,536

The calculation of diluted earnings per share for 2022 excluded an immaterial number of stock options because the exercise prices of these stock options exceeded the average market price of the Company's common shares, and the effect of their inclusion would have been antidilutive. There were no antidilutive shares in 2024 and 2023.

2. Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncement

In November 2023, the FASB issued ASU No. 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures ("ASU 2023-07"), which requires disclosure of significant segment expenses and other segment items on an annual and interim basis under ASC 280. The Company retrospectively adopted ASU 2023-07, effective December 31, 2024, and the adoption resulted in additional disclosures in the Reportable Segments footnote.

Recent Accounting Pronouncements

In November 2024, the FASB issued ASU 2024-03, Income Statement—Reporting Comprehensive Income —Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses, which requires additional disclosures about significant expenses included in certain expense captions presented on the face of the income statement. ASU 2024-03 is effective for annual periods beginning after December 15, 2026, and interim reporting periods beginning after December 15, 2027. Prospective or retrospective application is allowed and early adoption is permitted. The Company has not determined the impact ASU 2024-03 may have on the Company's financial statement disclosures.

In December 2023, the FASB issued ASU No. 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures ("ASU 2023-09"), which improves income tax disclosures by requiring (1) consistent categories and greater disaggregation of information in the rate reconciliation and (2) income taxes paid disaggregated by jurisdiction. It also includes certain other amendments to improve the effectiveness of income tax disclosures. ASU 2023-09 is effective for annual periods beginning after December 15, 2024. Early adoption is permitted. The ASU indicates that all entities will apply its guidance prospectively with an option for retrospective application to each period in the financial statements. The Company has not determined the impact ASU 2023-09 may have on the Company's financial statement disclosures.

3. Revenues

The outstanding contract asset and liability accounts were as follows:

	2024	2023
	(In thousands)	
Contract assets – January 1	$ 140,826	$ 119,741
Contract assets – December 31	**136,432**	140,826
Change in contract assets – (decrease) increase	**(4,394)**	21,085
Contract liabilities – January 1	432,830	398,692
Contract liabilities – December 31	**400,689**	432,830
Change in contract liabilities – decrease (increase)	**32,141**	(34,138)
Net change	**$ 27,747**	$ (13,053)

The net change in 2024 and 2023 was primarily driven by lower advance payments from customers on long term contracts. For the years ended December 31, 2024 and 2023, the Company recognized revenue of $359 million and $345 million, respectively, that was previously included in the beginning balance of contract liabilities.

Contract assets are reported as a component of Other current assets in the consolidated balance sheet. At December 31, 2024 and 2023, $37.1 million and $57.3 million, respectively, of Customer advanced payments (contract liabilities) were recorded in Other long-term liabilities in the consolidated balance sheet.

The remaining performance obligations exceeding one year as of December 31, 2024 and 2023 were $541.8 million and $607.5 million, respectively. Remaining performance obligations represent the transaction price of firm, non-cancelable orders, with expected delivery dates to customers greater than one year from the balance sheet date, for which the performance obligation is unsatisfied or partially unsatisfied. These performance obligations will be substantially satisfied within two to three years.

Geographic Areas

Net sales were attributed to geographic areas based on the location of the customer. Information about the Company's operations in different geographic areas was as follows for the year ended December 31:

	2024		
	EIG	EMG	Total
		(In thousands)	
United States	**$ 2,302,951**	**$ 1,346,483**	**$ 3,649,434**
International[1]:			
United Kingdom	**106,678**	**126,846**	**233,524**
European Union countries	**549,446**	**427,239**	**976,685**
Asia	**1,213,403**	**218,770**	**1,432,173**
Other foreign countries	**487,437**	**161,927**	**649,364**
Total international	**2,356,964**	**934,782**	**3,291,746**
Consolidated net sales	**$ 4,659,915**	**$ 2,281,265**	**$ 6,941,180**

(1) Includes U.S. export sales of $1,880.8 million.

	2023		
	EIG	EMG	Total
		(In thousands)	
United States	$ 2,377,316	$ 1,091,468	$ 3,468,784
International[(1)]:			
United Kingdom	99,718	114,770	214,488
European Union countries	518,758	426,219	944,977
Asia	1,175,703	202,425	1,378,128
Other foreign countries	452,755	137,818	590,573
Total international	2,246,934	881,232	3,128,166
Consolidated net sales	$ 4,624,250	$ 1,972,700	$ 6,596,950

(1) Includes U.S. export sales of $1,732.4 million.

	2022		
	EIG	EMG	Total
		(In thousands)	
United States	$ 2,171,684	$ 982,579	$ 3,154,263
International[(1)]:			
United Kingdom	92,668	117,788	210,456
European Union countries	510,052	420,756	930,808
Asia	1,050,843	266,011	1,316,854
Other foreign countries	404,106	134,043	538,149
Total international	2,057,669	938,598	2,996,267
Consolidated net sales	$ 4,229,353	$ 1,921,177	$ 6,150,530

(1) Includes U.S. export sales of $1,688.7 million

Major Products and Services

The Company's major products and services in the reportable segments were as follows for the year ended December 31:

	2024		
	EIG	EMG	Total
		(In thousands)	
Process and analytical instrumentation	**$ 3,232,918**	**$ —**	**$ 3,232,918**
Aerospace and power	**1,426,997**	**624,570**	**2,051,567**
Automation and engineered solutions	**—**	**1,656,695**	**1,656,695**
Consolidated net sales	**$ 4,659,915**	**$ 2,281,265**	**$ 6,941,180**

	2023		
	EIG	EMG	Total
	(In thousands)		
Process and analytical instrumentation	$ 3,267,698	$ —	$ 3,267,698
Aerospace and power	1,356,552	588,446	1,944,998
Automation and engineered solutions	—	1,384,254	1,384,254
Consolidated net sales	$ 4,624,250	$ 1,972,700	$ 6,596,950

	2022		
	EIG	EMG	Total
	(In thousands)		
Process and analytical instrumentation	$ 3,061,263	$ —	$ 3,061,263
Aerospace and power	1,168,090	549,735	1,717,825
Automation and engineered solutions	—	1,371,442	1,371,442
Consolidated net sales	$ 4,229,353	$ 1,921,177	$ 6,150,530

Timing of Revenue Recognition

The Company's timing of revenue recognition was as follows for the year ended December 31:

	2024		
	EIG	EMG	Total
	(In thousands)		
Products transferred at a point in time	**$ 3,739,209**	**$ 2,052,862**	**$ 5,792,071**
Products and services transferred over time	**920,706**	**228,403**	**1,149,109**
Consolidated net sales	**$ 4,659,915**	**$ 2,281,265**	**$ 6,941,180**

	2023		
	EIG	EMG	Total
	(In thousands)		
Products transferred at a point in time	$ 3,831,321	$ 1,772,329	$ 5,603,650
Products and services transferred over time	792,929	200,371	993,300
Consolidated net sales	$ 4,624,250	$ 1,972,700	$ 6,596,950

	2022		
	EIG	EMG	Total
	(In thousands)		
Products transferred at a point in time	$ 3,471,118	$ 1,680,558	$ 5,151,676
Products and services transferred over time	758,235	240,619	998,854
Consolidated net sales	$ 4,229,353	$ 1,921,177	$ 6,150,530

Product Warranties

The Company provides limited warranties in connection with the sale of its products. The warranty periods for products sold vary among the Company's operations, but the majority do not exceed one year. The Company calculates its warranty expense provision based on its historical warranty experience and adjustments are made periodically to reflect actual warranty expenses. Product warranty obligations are reported as a component of Accrued liabilities and other in the consolidated balance sheet.

Changes in the accrued product warranty obligation were as follows:

	2024	2023	2022
	(In thousands)		
Balance at the beginning of the year	$ 37,087	$ 26,487	$ 27,478
Accruals for warranties issued during the year	**24,775**	23,308	11,414
Settlements made during the year	**(22,953)**	(14,219)	(11,835)
Warranty accruals related to acquired businesses and other during the year	**(354)**	1,511	(570)
Balance at the end of the year	**$ 38,555**	$ 37,087	$ 26,487

4. Fair Value Measurements

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability in an orderly transaction between market participants on the measurement date. The Company utilizes a hierarchy for disclosure of the inputs to the valuations used to measure fair value. The hierarchy prioritizes the inputs into three broad levels as follows:

Level 1 - quoted prices (unadjusted) in active markets for identical assets or liabilities

Level 2 - quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument

Level 3 - unobservable inputs based on the Company’s own assumptions used to measure assets and liabilities at fair value

A financial asset or liability’s classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following tables provide the Company’s assets and liabilities that are measured at fair value on a recurring basis at December 31:

	2024			
	Total	Level 1	Level 2	Level 3
	(In thousands)			
Mutual fund investments	**$ 9,124**	**$ 9,124**	**$ —**	**$ —**
Foreign currency forward contracts	**—**	**—**	**—**	**—**

	2023			
	Total	Level 1	Level 2	Level 3
	(In thousands)			
Mutual fund investments	$ 11,922	$ 11,922	$ —	$ —
Foreign currency forward contracts	2,035	—	2,035	—

The fair value of mutual fund investments is based on quoted market prices. The mutual fund investments are shown as a component of long-term assets in the consolidated balance sheet. For the years ended December 31, 2024 and 2023, gains and losses on the investments were not material.

Foreign Currency

At December 31, 2024, the Company had no forward contracts outstanding. At December 31, 2023, the Company had a Euro forward contract for a total notional value of 50.0 million Euros. Foreign currency forward contracts are valued as level 2 assets as they are corroborated by foreign currency exchange rates and shown as a component of other current assets in the consolidated balance sheet. For the year ended December 31, 2024 and 2023, realized gains and losses on foreign currency forward contracts were not significant. The Company does not typically designate its foreign currency forward contracts as accounting hedges.

Financial Instruments

Cash, cash equivalents and mutual fund investments are recorded at fair value at December 31, 2024 and 2023 in the consolidated balance sheet.

The fair value of short-term borrowings, net approximates the carrying value. The Company's long-term debt, net is all privately held with no public market for this debt, therefore, the fair value of long-term debt, net was computed based on comparable current market data for similar debt instruments and is considered to be a level 3 liability. At December 31, 2024 and 2023, the fair value of long-term debt (including current portion) was $1,778.7 million and $2,087.6 million and the recorded amount of long-term debt (including current portion) was $1,851.9 million and $2,197.5 million, respectively. See Note 10 for long-term debt principal amounts, interest rates and maturities.

5. Hedging Activities

The Company has designated certain foreign-currency-denominated long-term borrowings as hedges of the net investment in certain foreign operations. As of December 31, 2024, and 2023, these net investment hedges included British-pound and Euro-denominated long-term debt. These borrowings were designed to create net investment hedges in each of the designated foreign subsidiaries. The Company designated the British-pound and Euro-denominated loans referred to above as hedging instruments to offset translation gains or losses on the net investment due to changes in the British pound and Euro exchange rates. These net investment hedges are evidenced by management's contemporaneous documentation supporting the hedge designation. Any gain or loss on the hedging instruments (the debt) following hedge designation is reported in accumulated other comprehensive income in the same manner as the translation adjustment on the hedged investment based on changes in the spot rate, which is used to measure hedge effectiveness.

At December 31, 2024 and 2023, the Company had $281.7 million and $286.6 million, respectively, of British-pound denominated loans, and $595.2 million and $580.8 million, respectively, in Euro-denominated loans, which were designated as a hedge against the net investment in Euro and British pound functional currency foreign subsidiaries. As a result of the British-pound and Euro-denominated loans being designated and 100% effective as net investment hedges, $45.6 million of pre-tax currency remeasurement gains and $32.8 million of pre-tax currency remeasurement losses have been included in the foreign currency translation component of other comprehensive income for the years ended December 31, 2024 and 2023, respectively.

6. Acquisitions

The Company spent $117.5 million in cash, net of cash acquired to acquire Virtek Vision International ("Virtek") in October 2024. Virtek is a leading provider of advanced laser-based projection and inspection systems. Virtek is part of EIG.

The following table represents the allocation of the purchase price for the net assets of Virtek based on the estimated fair values at acquisition (in millions):

Goodwill	$	**70.7**
Other intangible assets		**60.0**
Deferred income taxes		**(15.9)**
Net working capital and other[(1)]		**2.7**
Total cash paid	**$**	**117.5**

(1) Includes $6.6 million in accounts receivable, whose fair value, contractual cash flows and expected cash flows are approximately equal.

The amount allocated to goodwill is reflective of the benefits the Company expects to realize from the acquisitions. Virtek's advanced 3D laser projectors, smart cameras, and quality control inspection systems complement the Company's existing Creaform business capabilities.

At December 31, 2024, the purchase price allocated to other intangible assets of $60.0 million consists of $9.6 million of indefinite-lived intangible trade names, which are not subject to amortization. The remaining $50.4 million of other intangible assets consists of $40.8 million of customer relationships, which are being amortized over a period of 17 years and $9.6 million of purchased technology, which is being amortized over a period of 17 years. Amortization expense for each of the next five years for the acquisitions is expected to be $3.0 million per year.

The Virtek acquisition had an immaterial impact on reported net sales, net income, and diluted earnings per share for the year ended December 31, 2024. Had the acquisition been made at the beginning of 2024 or 2023, unaudited pro forma net sales, net income and diluted earnings per share for the year ended December 31, 2024 and 2023, would not have been materially different than the amounts reported. The Company has not finalized its measurements of certain tangible, intangible assets and liabilities and income taxes for the Virtek acquisition.

The Company finalized its measurements of certain tangible and intangible assets and liabilities for its August 2023 acquisition of United Electronic Industries and its October 2023 acquisition of Amplifier Research Corp, which had no material impact to the consolidated statement of income and balance sheet.

The Company finalized its measurements of certain tangible and intangible assets and liabilities, as well as income tax considerations, for the December 2023 Paragon Medical acquisition. The adjustments include an increase to goodwill of $62.2 million, a decrease to fixed assets of $42.4 million, and a decrease to intangibles of $21.7 million. The final balances for Paragon Medical at December 31, 2024 were $969.2 million of goodwill, $169.0 million of fixed assets, and $852.3 million of intangibles. There was no material impact to the consolidated statement of income.

In 2023, the Company spent $2,237.9 million in cash, net of cash acquired, to acquire Paragon Medical ("Paragon") in December 2023, Amplifier Research Corp. ("Amplifier Research") in October 2023, United Electronic Industries ("UEI") in August 2023, and Bison Gear & Engineering Corp. ("Bison") in March 2023. Paragon is a leading provider of highly engineered medical components and instruments. Amplifier Research is a leading manufacturer of radio frequency and microwave amplifiers and electromagnetic compatibility testing equipment. Bison is a leading manufacturer of highly engineered motion control solutions serving diverse markets and applications. UEI is a leading provider of data acquisition and control solutions for the aerospace, defense, energy and semiconductor industries. UEI and Amplifier Research are part of EIG. Paragon and Bison are part of EMG.

In 2022, the Company spent $429.7 million in cash, net of cash acquired, to acquire Navitar, Inc.("Navitar") in September 2022 and RTDS Technologies Inc. ("RTDS") in October 2022. Navitar is a market leader in the design, development and manufacturing of customized, fully integrated optical imaging systems, cameras, components and software. RTDS is a leading provider of real-time power simulation systems used by utilities, and research and education institutions in the development and testing of the electric power grid and renewable energy applications. Navitar and RTDS are part of EIG.

Acquisition subsequent to December 31, 2024

In January 2025, the Company acquired Kern Microtechnik ("Kern"), a leading manufacturer of high-precision machining and optical inspection solutions supporting a wide range of applications within the medical, semiconductor, research, and space markets. Kern has annual sales of approximately 50 million Euros. Kern will join EIG.

7. Goodwill and Other Intangible Assets

The changes in the carrying amounts of goodwill by segment were as follows:

	EIG	EMG	Total
		(In millions)	
Balance at December 31, 2022	$ 4,236.1	$ 1,136.5	$ 5,372.6
Goodwill acquired	79.3	932.4	1,011.7
Purchase price allocation adjustments and other	24.8	—	24.8
Foreign currency translation adjustments	24.8	13.7	38.5
Balance at December 31, 2023	4,365.0	2,082.6	6,447.6
Goodwill acquired	**70.7**	**—**	**70.7**
Purchase price allocation adjustments and other	**30.7**	**61.7**	**92.4**
Foreign currency translation adjustments	**(41.5)**	**(13.3)**	**(54.8)**
Balance at December 31, 2024	**$ 4,424.9**	**$ 2,131.0**	**$ 6,555.9**

Other intangible assets were as follows at December 31:

	2024	2023
	(In thousands)	
Definite-lived intangible assets (subject to amortization):		
Patents	**$ 46,043**	$ 47,239
Purchased technology	**815,088**	914,100
Customer lists	**3,823,907**	3,743,457
	4,685,038	4,704,796
Accumulated amortization:		
Patents	**(37,977)**	(38,105)
Purchased technology	**(378,102)**	(334,229)
Customer lists	**(1,377,094)**	(1,190,906)
	(1,793,173)	(1,563,240)
Net intangible assets subject to amortization	**2,891,865**	3,141,556
Indefinite-lived intangible assets (not subject to amortization):		
Trademarks and trade names	**1,023,308**	1,023,761
	$ 3,915,173	$ 4,165,317

Amortization expense was $247.7 million, $215.1 million, and $205.8 million for the years ended December 31, 2024, 2023 and 2022, respectively. Amortization expense for each of the next five years is expected to approximate $256 million per year, not considering the impact of potential future acquisitions.

8. Other Consolidated Balance Sheet Information

	December 31, 2024	December 31, 2023
	(In thousands)	
INVENTORIES, NET		
Finished goods and parts	**$ 80,491**	$ 136,003
Work in process	**171,084**	165,914
Raw materials and purchased parts	**770,138**	830,554
	$ 1,021,713	$ 1,132,471
PROPERTY, PLANT AND EQUIPMENT, NET		
Land	**$ 67,640**	$ 67,195
Buildings	**449,314**	455,015
Machinery and equipment	**1,443,288**	1,479,702
	1,960,242	2,001,912
Less: Accumulated depreciation	**(1,141,631)**	(1,110,619)
	$ 818,611	$ 891,293
ACCRUED LIABILITIES AND OTHER		
Employee compensation and benefits	**$ 202,605**	$ 228,389
Product warranty obligation	**38,555**	37,087
Realignment	**55,175**	41,540
Short term lease liability	**54,736**	61,055
Other	**121,855**	134,919
	$ 472,926	$ 502,990

9. Income Taxes

The components of income before income taxes and the details of the provision for income taxes were as follows for the years ended December 31:

	2024	2023	2022
	(In thousands)		
Income before income taxes:			
Domestic	**$ 991,681**	$ 1,026,113	$ 893,478
Foreign	**669,858**	580,299	535,214
Total	**$ 1,661,539**	$ 1,606,412	$ 1,428,692
Provision for income taxes:			
Current:			
Federal	**$ 120,367**	$ 206,477	$ 183,619
Foreign	**155,055**	144,476	119,148
State	**22,936**	34,173	34,201
Total current	**298,358**	385,126	336,968
Deferred:			
Federal	**(437)**	(69,956)	(37,810)
Foreign	**(14,317)**	(15,113)	(20,818)
State	**1,811**	(6,833)	(9,190)
Total deferred	**(12,943)**	(91,902)	(67,818)
Total provision	**$ 285,415**	$ 293,224	$ 269,150

Significant components of the deferred tax (asset) liability were as follows at December 31:

	2024	2023
	(In thousands)	
Non-current deferred tax (asset) liability:		
Differences in basis of property and accelerated depreciation [1]	**$ 49,513**	$ 63,447
Reserves not currently deductible	**(117,420)**	(130,761)
Pensions	**89,508**	75,834
Differences in basis of intangible assets and accelerated amortization	**849,768**	880,666
Net operating loss carryforwards	**(116,611)**	(109,065)
Share-based compensation	**(14,614)**	(14,296)
Foreign Tax Credit Carryforwards	**(2,840)**	(9,327)
Unremitted earnings	**13,906**	15,033
Other	**(19,626)**	(25,893)
	731,584	745,638
Less: Valuation allowance	**21,305**	16,766
	752,889	762,404
Portion included in non-current assets	**78,141**	74,291
Gross non-current deferred tax liability	**$ 831,030**	$ 836,695

(1) Presented net of deferred tax assets of approximately $48.8 million and $49.6 million at December 31, 2024 and 2023, respectively, resulting from lease obligations.

The Company's effective tax rate reconciles to the U.S. Federal statutory rate as follows for the years ended December 31:

	2024	2023	2022
U.S. Federal statutory rate	**21.0 %**	21.0 %	21.0 %
State income taxes, net of federal income tax benefit	**1.4**	1.3	1.6
Foreign operations, net	**0.5**	0.4	(1.0)
U.S. Benefits for Manufacturing, Export and credits	**(3.4)**	(3.2)	(2.9)
Uncertain Tax Items	**(1.9)**	1.0	1.0
Stock compensation	**(0.5)**	(0.6)	(0.9)
U.S. Tax / (Benefit) on Foreign Earnings	**(0.3)**	(2.0)	(0.5)
Other	**0.4**	0.4	0.5
Consolidated effective tax rate	**17.2 %**	18.3 %	18.8 %

The Company elected to pay the cash tax cost of the one-time mandatory tax on previously deferred earnings of non-U.S. subsidiaries over an eight-year period. As of December 31, 2024, the Company has a remaining cash tax obligation of $27.4 million, $15.2 million of which is classified as non-current.

The Company has evaluated the impact of the global intangible low-taxed income ("GILTI") section of the Tax Act and has made a tax accounting policy election to record the annual tax cost of GILTI as a current period expense when incurred and, as such, will not be measuring an impact of GILTI in its determination of deferred taxes.

As a result of the one-time mandatory deemed repatriation and the taxable inclusions under the GILTI provisions of the Tax Act, the Company has approximately $1.4 billion in previously taxed income ("PTI") as of December 31, 2024 which can be repatriated without incremental U.S. Federal tax. The Company intends to reinvest its earnings indefinitely in operations outside the United States except to the extent of the PTI. There has been no provision for U.S. deferred income taxes for the undistributed earnings over PTI of approximately $235.8 million and $385.4 million at December 31, 2024 and 2023 respectively because determination of the amount of the unrecognized deferred income tax liability on these undistributed earnings is not practicable.

As of December 31, 2024, and 2023, the Company recorded deferred income taxes totaling $13.9 million and $15.0 million respectively in state income and foreign withholding taxes expected to be incurred when the cash amounts related to the previously taxed income are ultimately repatriated to the U.S.

The Company is acquisitive and at times acquires entities with tax attributes (net operating losses or tax credits) that carry over to post-acquisition tax periods of the Company. At December 31, 2024, the Company had tax effected benefits, net of uncertain tax positions of $116.6 million related to net operating loss carryforwards, which will be available to offset future income taxes payable, subject to certain annual or other limitations based on foreign and U.S. tax laws. This amount includes net operating loss carryforwards of $0.2 million for federal income tax purposes with no valuation allowance for the U.S. consolidated group, $9.0 million for state income tax purposes with a valuation allowance of $3.0 million, and $107.4 million for foreign income tax purposes with a valuation allowance of $5.6 million. The federal and state net operating loss carryforwards, if not used, will expire between 2025 and 2044. The majority of the foreign net operating loss carryforwards can be carried forward indefinitely with the remaining portion set to expire between 2030 and 2044, if not used.

At December 31, 2024, the Company had tax effected benefits of $13.6 million related to tax credit carryforwards, which will be available to offset future income taxes payable, subject to certain annual or other limitations based on foreign and U.S. tax laws. This primarily includes foreign tax credit carryforwards of $2.9 million with no valuation allowance, $9.2 million for state income tax purposes with a valuation allowance of

$8.0 million, and $1.5 million for foreign income tax purposes with a valuation allowance of $0.5 million. These tax credit carryforwards, if not used, will expire between 2025 and 2044.

As of December 31, 2024, the Company has no remaining carryforwards relating to interest expense limitations under IRC Section 163(j). At December 31, 2023, the Company had $13.2 million of IRC Section 163(j) interest expense limitation carryforwards.

The Company maintains a valuation allowance to reduce certain deferred tax assets to amounts that are more likely than not to be realized. This allowance relates to deferred tax assets established for federal, state, and foreign net operating losses, credit carryforwards, and other miscellaneous timing items. In 2024, the Company recorded a net increase of $4.5 million in the valuation allowance.

The increase in the valuation allowance primarily relates to $5.3 million recorded against state tax credits which have been deemed more likely than not to go unused.

At December 31, 2024, the Company had gross unrecognized tax benefits of $201.6 million, of which $158.2 million, if recognized, would impact the effective tax rate. At December 31, 2023, the Company had gross unrecognized tax benefits of $233.5 million, of which $185.2 million, if recognized, would impact the effective tax rate.

At December 31, 2024 and 2023, the Company reported $15.3 million and $18.3 million, respectively, related to interest and penalties as a component of other long term liabilities in the consolidated balance sheet. During 2024, the Company recognized a net benefit of $3.0 million, and in 2023 net expense of $5.9 million, for interest and penalties related to uncertain tax positions in the consolidated statement of income as a component of income tax expense.

Approximately 51% of the Company's overall tax liability is incurred in the United States. The Company files income tax returns in various other state and foreign tax jurisdictions, in some cases for multiple legal entities per jurisdiction. Generally, the Company has open tax years subject to tax audit on average of between three and six years in these jurisdictions. The Company was notified by the Internal Revenue Service ("IRS") that the U.S. consolidated tax group was selected for audit for the 2022 tax year. A preliminary meeting with the IRS and company representatives has been scheduled. The Company has not materially extended any other statutes of limitation for any significant location and has reviewed and accrued for, where necessary, tax liabilities for open periods including state and foreign jurisdictions that remain subject to examination. There have been no penalties asserted or imposed by the IRS related to substantial understatement of income, gross valuation misstatement or failure to disclose a listed or reportable transaction.

During 2024, the Company added $65.5 million of tax, interest and penalties related to identified uncertain tax positions and reversed $100.5 million of tax and interest related to statute expirations and settlement of prior uncertain positions. During 2023, the Company added $75.5 million of tax, interest and penalties related to identified uncertain tax positions and reversed $10.7 million of tax and interest related to statute expirations and settlement of prior uncertain positions.

The following is a reconciliation of the liability for uncertain tax positions at December 31:

	2024	2023	2022
	(In millions)		
Balance at the beginning of the year	**$ 233.5**	$ 174.7	$ 147.0
Additions for tax positions related to the current year	**37.2**	32.1	29.3
Additions for tax positions of prior years	**18.1**	34.0	2.1
Reductions for tax positions of prior years	**(22.8)**	(0.6)	(1.0)
Reductions related to settlements with taxing authorities	**(1.3)**	(0.1)	(0.2)
Reductions due to statute expirations	**(63.1)**	(6.6)	(2.5)
Balance at the end of the year	**$ 201.6**	$ 233.5	$ 174.7

In 2024, the additions above primarily reflect the increase in tax liabilities for uncertain tax positions related to higher transfer pricing risks, and incentives for R&D related activities. The reductions above primarily relate to statute expirations. The net decrease of $31.9 million in uncertain tax positions resulted in a decrease of $25.6 million to income tax expense and the remainder in other balance sheet accounts. At December 31, 2024, tax, interest and penalties of $212.8 million were classified as a non-current liability and $4.2 million was reflected as a reduction against deferred tax assets.

10. Debt

Long-term debt, net consisted of the following at December 31:

	2024	2023
	(In thousands)	
U.S. dollar 3.73% senior notes due September 2024	**$ —**	$ 300,000
U.S. dollar 3.91% senior notes due June 2025	**50,000**	50,000
U.S. dollar 3.96% senior notes due August 2025	**100,000**	100,000
U.S. dollar 4.18% senior notes due December 2025	**275,000**	275,000
U.S. dollar 3.83% senior notes due September 2026	**100,000**	100,000
U.S. dollar 4.32% senior notes due December 2027	**250,000**	250,000
U.S. dollar 4.37% senior notes due December 2028	**50,000**	50,000
U.S. dollar 3.98% senior notes due September 2029	**100,000**	100,000
U.S. dollar 4.45% senior notes due August 2035	**50,000**	50,000
British pound 2.59% senior note due November 2028	**187,803**	191,076
British pound 2.70% senior note due November 2031	**93,917**	95,543
Euro 1.34% senior notes due October 2026	**310,514**	331,770
Euro 1.71% senior notes due December 2027	**77,628**	82,945
Euro 1.53% senior notes due October 2028	**207,011**	221,203
Revolving credit facility borrowings	**230,000**	1,116,000
Other, principally foreign	**1,906**	5,534
Less: Debt issuance costs	**(4,058)**	(5,724)
Total debt, net	**2,079,721**	3,313,347
Less: Current portion, net	**(654,346)**	(1,417,915)
Total long-term debt, net	**$ 1,425,375**	$ 1,895,432

Maturities of long-term debt borrowings outstanding at December 31, 2024 were as follows: $410.5 million in 2026; $327.6 million in 2027; $444.8 million in 2028; $100.0 million in 2029; none in 2030; and $142.5 million in 2031 and thereafter.

In the third quarter of 2024, the Company paid in full, at maturity, a $300.0 million in aggregate principal amount of 3.73% senior notes.

In December 2018, the Company completed a private placement agreement to sell $575 million and 75 million Euros in senior notes to a group of institutional investors (the "2018 Private Placement") utilizing two funding dates. The first funding occurred in December 2018 for $475 million and 75 million Euros ($77.6 million at December 31, 2024). The second funding was in January 2019 for $100 million. The 2018 Private Placement senior notes carry a weighted average interest rate of 3.93% and are subject to certain customary covenants, including financial covenants that, among other things, require the Company to maintain certain debt-to-EBITDA (earnings before interest, income taxes, depreciation and amortization) and interest coverage ratios.

In September 2014, the Company issued $300 million in aggregate principal amount of 3.73% senior notes due September 2024, $100 million in aggregate principal amount of 3.83% senior notes due September 2026 and $100 million in aggregate principal amount of 3.98% senior notes due September 2029. In June 2015, the Company issued $50 million in aggregate principal amount of 3.91% senior notes due June 2025. In August 2015, the Company issued $100 million in aggregate principal amount of 3.96% senior notes due August 2025 and $50 million in aggregate principal amount of 4.45% senior notes due August 2035.

In October 2016, the Company issued 300 million Euros ($310.5 million at December 31, 2024) in aggregate principal amount of 1.34% senior notes due October 2026 and 200 million Euros ($207.0 million at December 31, 2024) in aggregate principal amount of 1.53% senior notes due October 2028. In November 2016, the Company issued 150 million British pounds ($187.8 million at December 31, 2024) in aggregate principal amount of 2.59% senior notes due November 2028 and 75 million British pounds ($93.9 million at December 31, 2024) in aggregate principal amount of 2.70% senior notes due November 2031.

On May 12, 2022, the Company along with certain of its foreign subsidiaries amended its credit agreement dated as of September 22, 2011, as amended and restated as of March 10, 2016 and as further amended and restated as of October 30, 2018 (the "Credit Agreement"). The Credit Agreement amends and restates the Company's existing revolving credit facility to increase the size from $1.5 billion to $2.3 billion. The Credit Agreement consists of a five-year revolving credit facility with a final maturity date in May 2027. The revolving credit facility total borrowing capacity excludes an accordion feature that permits the Company to request up to an additional $700 million in revolving credit commitments at any time during the life of the Credit Agreement under certain conditions. The credit agreement places certain restrictions on allowable additional indebtedness. At December 31, 2024, the Company had available borrowing capacity of $2,020.3 million under its revolving credit facility, excluding the $700 million accordion feature.

Interest rates on outstanding borrowings under the revolving credit facility are at the applicable benchmark rate plus a negotiated spread or at the U.S. prime rate. At December 31, 2024 and 2023, the Company had $230.0 million and $1,116.0 million of borrowings outstanding under the revolving credit facility, respectively. The weighted average interest rate on the revolving credit facility for the years ended December 31, 2024 and 2023 was 6.31% and 6.22%, respectively. The Company had outstanding letters of credit primarily under the revolving credit facility totaling $49.7 million and $54.7 million at December 31, 2024 and 2023, respectively.

The private placements, the senior notes and the revolving credit facility are subject to certain customary covenants, including financial covenants that, among other things, require the Company to maintain certain debt-to-EBITDA and interest coverage ratios. The Company was in compliance with all provisions of the debt arrangements at December 31, 2024.

Foreign subsidiaries of the Company had available credit facilities with local foreign lenders of $75.6 million and $73.8 million at December 31, 2024 and 2023, respectively. At December 31, 2024, foreign subsidiaries had

$1.9 million in debt borrowings outstanding, which was reported in short-term borrowings. At December 31, 2023, foreign subsidiaries had $5.5 million of debt borrowings outstanding.

The weighted average interest rate on total debt borrowings outstanding at December 31, 2024 and 2023 was 3.4% and 4.2%, respectively.

Subsequent Event

On January 6, 2025, the Company established a commercial paper program under which it may issue short-term, unsecured commercial paper notes. Amounts available under the commercial paper program may be borrowed, repaid and re-borrowed, with the aggregate face or principal amount of the notes outstanding under the commercial paper program at any time not to exceed $2.3 billion. The notes will have maturities of up to 364 days from the date of issue. The Company intends the commercial paper program to provide additional financing flexibility for various purposes including acquisitions. The Company expects that outstanding indebtedness of the Company under both the revolving credit facility and the commercial paper program will not exceed $2.3 billion at any time.

11. Share-Based Compensation

Under the terms of the Company's stockholder-approved share-based plans, performance restricted stock units ("PRSUs"), incentive and non-qualified stock options and restricted stock have been, and may be, issued to the Company's officers, management-level employees and members of its Board of Directors. Stock options granted generally vest at a rate of one-third on each of the first three anniversaries of the grant date and have a maximum contractual term of ten years. Restricted stock granted to employees generally vests one-third on each of the first three anniversaries of the grant date. Restricted stock granted to non-employee directors generally vests two years after the grant date (cliff vesting) and is subject to accelerated vesting due to certain events, including doubling of the grant price of the Company's common stock as of the close of business during any five consecutive trading days.

Share Based Compensation Expense

The Company measures and records compensation expense related to all stock awards by recognizing the grant date fair value of the awards over their requisite service periods in the financial statements. For grants under any of the Company's plans that are subject to graded vesting based on a service condition, the Company recognizes expense on a straight-line basis over the requisite service period for the entire award.

Total share-based compensation expense was as follows for the years ended December 31:

	2024	2023	2022
		(In thousands)	
Stock option expense	**$ 13,892**	$ 14,284	$ 13,021
Restricted stock expense	**20,422**	20,792	20,115
PRSU expense	**13,549**	11,123	14,239
Total pre-tax expense	**$ 47,863**	$ 46,199	$ 47,375

Pre-tax share-based compensation expense is included in the consolidated statement of income in either Cost of sales or Selling, general and administrative expenses, depending on where the recipient's cash compensation is reported.

Stock Options

The fair value of each stock option grant is estimated on the date of grant using a Black-Scholes-Merton option pricing model. The following weighted average assumptions were used in the Black-Scholes-Merton model to estimate the fair values of stock options granted during the years indicated:

	2024	2023	2022
Expected volatility	**28.2 %**	26.0 %	24.5 %
Expected term (years)	**5.0**	5.0	5.0
Risk-free interest rate	**4.31 %**	3.54 %	2.33 %
Expected dividend yield	**0.62 %**	0.72 %	0.65 %
Black-Scholes-Merton fair value per stock option granted	**$ 56.42**	$ 38.11	$ 32.54

Expected volatility is based on the historical volatility of the Company's stock over the stock options' expected term. The Company used historical exercise data to estimate the stock options' expected term, which represents the period of time that the stock options granted are expected to be outstanding. Management anticipates that the future stock option holding periods will be similar to the historical stock option holding periods. The risk-free interest rate for periods within the expected term of the stock option is based on the U.S. Treasury yield curve at the time of grant. The expected dividend yield is calculated by dividing the Company's annual dividend, based on the most recent quarterly dividend rate, by the Company's closing common stock price on the grant date. Compensation expense recognized for all share-based awards is net of estimated forfeitures. The Company's estimated forfeiture rates are based on its historical experience.

The following is a summary of the Company's stock option activity and related information for the year ended December 31, 2024:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life	Aggregate Intrinsic Value
	(In thousands)		(Years)	(In millions)
Outstanding at the beginning of the year	2,741	$ 101.20		
Granted	**231**	**181.93**		
Exercised	**(779)**	**85.77**		
Forfeited	**(53)**	**150.00**		
Outstanding at the end of the year	**2,140**	**$ 114.33**	**6.5**	**$ 141.4**
Exercisable at the end of the year	**1,514**	**$ 98.55**	**5.7**	**$ 123.7**

The aggregate intrinsic value of stock options exercised during 2024, 2023 and 2022 was $73.5 million, $54.9 million and $50.3 million, respectively. The total fair value of stock options vested during 2024, 2023 and 2022 was $14.9 million, $12.8 million and $11.4 million, respectively.

The following is a summary of the Company's non-vested stock option activity and related information for the year ended December 31, 2024:

	Shares	Weighted Average Grant Date Fair Value
	(In thousands)	
Non-vested stock options outstanding at the beginning of the year	910	$ 34.98
Granted	**231**	**56.42**
Vested	**(462)**	**32.26**
Forfeited	**(53)**	**44.68**
Non-vested stock options outstanding at the end of the year	**626**	**$ 44.32**

As of December 31, 2024, there was approximately $16 million of expected future pre-tax compensation expense related to the 0.6 million non-vested stock options outstanding, which is expected to be recognized over a weighted average period of less than two years.

Restricted Stock

The fair value of restricted shares under the Company's restricted stock arrangement is determined by the product of the number of shares granted and the Company's closing common stock price on the grant date. Upon the grant of restricted stock, the fair value of the restricted shares (unearned compensation) at the grant date is charged as a reduction of capital in excess of par value in the Company's consolidated balance sheet and is amortized to expense on a straight-line basis over the vesting period, which is the same as the calculated derived service period as determined on the grant date.

The following is a summary of the Company's non-vested restricted stock activity and related information for the year ended December 31, 2024:

	Shares	Weighted Average Grant Date Fair Value
	(In thousands)	
Non-vested restricted stock outstanding at the beginning of the year	296	$ 135.39
Granted	**149**	**181.74**
Vested	**(141)**	**132.82**
Forfeited	**(27)**	**155.27**
Non-vested restricted stock outstanding at the end of the year	**277**	**$ 159.71**

The total fair value of restricted stock vested during 2024, 2023 and 2022 was $20.0 million, $20.5 million and $17.7 million, respectively. The weighted average fair value of restricted stock granted per share during 2024 and 2023 was $181.74 and $139.08, respectively. As of December 31, 2024, there was approximately $27 million of expected future pre-tax compensation expense related to the 0.3 million non-vested restricted shares outstanding, which is expected to be recognized over a weighted average period of less than two years.

Performance Restricted Stock Units

The PRSUs vest over a period up to three years from the grant date based on continuous service, with the number of shares earned (0% to 200% of the target award) depending upon the extent to which the Company achieves certain financial and market performance targets measured over the period from January 1 of the year of grant through December 31 of the third year. Half of the PRSUs are valued in a manner similar to restricted stock as the financial targets are based on the Company's operating results. The grant date fair value of these PRSUs are recognized as compensation expense over the vesting period based on the number of awards expected to vest at each reporting date. The other half of the PRSUs were valued using a Monte Carlo model as the performance target is related to the Company's total shareholder return compared to a group of peer companies, which represents a market condition. The Company recognizes the grant date fair value of these awards as compensation expense ratably over the vesting period.

The following is a summary of the Company's non-vested performance restricted stock activity and related information for the year ended December 31, 2024:

	Shares	Weighted Average Grant Date Fair Value
	(In thousands)	
Non-vested performance restricted stock outstanding at the beginning of the year	239	$ 131.90
Granted	**77**	**167.79**
Performance assumption change [1]	**24**	**121.91**
Vested	**(99)**	**121.91**
Forfeited	**(6)**	**155.83**
Non-vested performance restricted stock outstanding at the end of the year	**235**	**$ 150.92**

[1] Reflects the number of PRSUs above target levels based on performance metrics.

As of December 31, 2024, there was approximately $5 million of expected future pre-tax compensation expense related to the 0.2 million non-vested performance restricted shares outstanding, which is expected to be recognized over a weighted average period of less than one year.

The Company issues previously unissued shares when stock units are exercised, and shares are issued from treasury stock upon the award of restricted stock.

12. Retirement Plans and Other Postretirement Benefits

Retirement and Pension Plans

The Company sponsors several retirement and pension plans covering eligible salaried and hourly employees. The plans generally provide benefits based on participants' years of service and/or compensation. The following is a brief description of the Company's retirement and pension plans.

The Company maintains contributory and non-contributory defined benefit pension plans. Benefits for eligible salaried and hourly employees under all defined benefit plans are funded through trusts established in conjunction with the plans. The Company's funding policy with respect to its defined benefit plans is to contribute amounts that provide for benefits based on actuarial calculations and the applicable requirements of U.S. federal and local foreign laws. The Company estimates that it will make both required and discretionary cash contributions of approximately $7 million to $10 million to its worldwide defined benefit pension plans in 2025.

The Company uses a measurement date of December 31 (its fiscal year end) for its U.S. and foreign defined benefit pension plans.

The Company sponsors a 401(k) retirement and savings plan for eligible U.S. employees. Participants in the retirement and savings plan may contribute a specified portion of their compensation on a pre-tax basis, Roth basis, or after-tax basis, which varies by location. The Company matches employee contributions ranging from 33% to 100%, up to a maximum percentage ranging from 1% to 8% of eligible compensation or up to a maximum of $1,200 per participant in some locations.

The Company’s retirement and savings plan has a defined contribution retirement feature principally to cover U.S. salaried employees joining the Company after December 31, 1996. Under the retirement feature, the Company makes contributions for eligible employees based on a pre-established percentage of the covered employee’s salary subject to pre-established vesting. Employees of certain of the Company’s foreign operations participate in various local defined contribution plans.

The Company has non-qualified unfunded retirement plans for certain Directors and retired employees. It also provides supplemental retirement benefits, through contractual arrangements and/or a Supplemental Executive Retirement Plan (“SERP”) covering certain current and former executives of the Company. These supplemental benefits are designed to compensate the executive for retirement benefits that would have been provided under the Company’s primary retirement plan, except for statutory limitations on compensation that must be taken into account under those plans. The plan permits deferred amounts to be deemed invested in either, or a combination of, an interest-bearing account, phantom mutual fund or collective investment trust accounts or the equivalent of a fund which invests in shares of the Company’s common stock on behalf of the employee. The amount owed to participants is an unfunded and unsecured general obligation which is payable out of either the general assets of the Company or a grant of shares of the Company's common stock upon retirement or termination. The Company is providing for these obligations by charges to earnings over the applicable periods.

The following tables set forth the changes in net projected benefit obligation and the fair value of plan assets for the funded and unfunded defined benefit plans for the years ended December 31:

U.S. Defined Benefit Pension Plans:

	2024	2023
	(In thousands)	
Change in projected benefit obligation:		
Net projected benefit obligation at the beginning of the year	$ 366,248	$ 383,143
Service cost	**1,177**	1,205
Interest cost	**18,998**	20,840
Actuarial (gains) losses	**(10,115)**	10,229
Gross benefits paid	**(30,000)**	(49,169)
Net projected benefit obligation at the end of the year	**$ 346,308**	$ 366,248
Change in plan assets:		
Fair value of plan assets at the beginning of the year	$ 599,886	$ 569,049
Actual return on plan assets	**46,900**	79,366
Employer contributions	**650**	640
Gross benefits paid	**(30,000)**	(49,169)
Fair value of plan assets at the end of the year	**$ 617,436**	$ 599,886

Foreign Defined Benefit Pension Plans:

	2024	2023
	(In thousands)	
Change in projected benefit obligation:		
Net projected benefit obligation at the beginning of the year	$ 215,482	$ 198,744
Service cost	**1,623**	1,615
Interest cost	**9,087**	9,369
Foreign currency translation adjustments	**(5,162)**	10,312
Actuarial (gains) losses	**(18,872)**	7,575
Expenses paid from assets	**(579)**	(552)
Gross benefits paid	**(10,776)**	(11,581)
Net projected benefit obligation at the end of the year	**$ 190,803**	$ 215,482
Change in plan assets:		
Fair value of plan assets at the beginning of the year	$ 174,443	$ 159,592
Actual return on plan assets	**(2,327)**	10,132
Employer contributions	**8,044**	8,031
Foreign currency translation adjustments	**(3,038)**	8,821
Expenses paid from assets	**(579)**	(552)
Gross benefits paid	**(10,776)**	(11,581)
Fair value of plan assets at the end of the year	**$ 165,767**	$ 174,443

The projected benefit obligation assumptions impacting net actuarial losses (gains) primarily consist of changes in discount and mortality rates.

The accumulated benefit obligation consisted of the following at December 31:

U.S. Defined Benefit Pension Plans:

	2024	2023
	(In thousands)	
Funded plans	**$ 339,029**	$ 357,498
Unfunded plans	**2,214**	2,558
Total	**$ 341,243**	$ 360,056

Foreign Defined Benefit Pension Plans:

	2024	2023
	(In thousands)	
Funded plans	**$ 155,368**	$ 178,854
Unfunded plans	**35,246**	36,360
Total	**$ 190,614**	$ 215,214

Weighted average assumptions used to determine benefit obligations at December 31:

	2024	2023
U.S. Defined Benefit Pension Plans:		
Discount rate	**5.74 %**	5.38 %
Rate of compensation increase (where applicable)	**3.75 %**	3.75 %
Foreign Defined Benefit Pension Plans:		
Discount rate	**5.20 %**	4.36 %
Rate of compensation increase (where applicable)	**3.00 %**	3.00 %

The following is a summary of the fair value of plan assets for U.S. plans at December 31:

	2024				2023		
Asset Class	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2
				(In thousands)			
Corporate debt instruments	**$ 2,595**	**$ —**	**$ 2,595**	**$ —**	$ 5,295	$ —	$ 5,295
Corporate debt instruments – Preferred	**18,027**	**—**	**18,027**	**—**	16,004	—	16,004
Corporate stocks – Common	**56,258**	**56,258**	**—**	**—**	43,287	43,287	—
Municipal bonds	**1,456**	**—**	**1,456**	**—**	1,253	—	1,253
Hedge Funds	**31,900**	**—**	**—**	**31,900**	—	—	—
Registered investment companies	**145,380**	**145,380**	**—**	**—**	169,794	169,794	—
U.S. Government securities	**1,141**	**—**	**1,141**	**—**	1,262	—	1,262
Total investments	**256,757**	**201,638**	**23,219**	**31,900**	236,895	213,081	23,814
Investments measured at net asset value	**360,679**	**—**	**—**	**—**	362,991	—	—
Total investments	**$617,436**	**$201,638**	**$ 23,219**	**$ 31,900**	$599,886	$213,081	$ 23,814

U.S. equity securities and global equity securities categorized as level 1 are traded on national and international exchanges and are valued at their closing prices on the last trading day of the year. Some U.S. equity securities and global equity securities are public investment vehicles valued using the Net Asset Value ("NAV") provided by the fund manager. The NAV is the total value of the fund divided by the number of shares outstanding.

Fixed income securities categorized as level 2 are valued by the trustee using pricing models that use verifiable observable market data, bids provided by brokers or dealers or quoted prices of securities with similar characteristics. Hedge funds are considered level 3 investments as their values are determined by the sponsor using unobservable market data.

The following is a summary of the changes in the fair value of the U.S. plans' level 3 investments (fair value determined using significant unobservable inputs):

	Hedge Funds
	(In thousands)
Balance, December 31, 2023	$ —
Actual return on assets:	
Unrealized losses relating to instruments still held at the end of the year	—
Realized gains (losses) relating to assets sold during the year	—
Purchases, sales, issuances and settlements, net	31,900
Balance, December 31, 2024	$ 31,900

The expected long-term rate of return on these plan assets was 7.46% in 2024 and 7.59% in 2023. Equity securities included 200,057 shares of AMETEK, Inc. common stock with a market value of $36.1 million (5.8% of total plan investment assets) at December 31, 2024 and 232,710 shares of AMETEK, Inc. common stock with a market value of $38.4 million (6.4% of total plan investment assets) at December 31, 2023.

The objectives of the Company's U.S. defined benefit plans' investment strategy are to maximize the plans' funded status and minimize Company contributions and plan expense. Because the goal is to optimize returns over the long term, an investment policy that favors equity holdings has been established. Since there may be periods of time where both equity and mutual fund markets provide poor returns, an allocation to alternative assets may be made to improve the overall portfolio's diversification and return potential. The Company periodically reviews its asset allocation, taking into consideration plan liabilities, plan benefit payment streams and the investment strategy of the pension plans. The actual asset allocation is monitored frequently relative to the established targets and ranges and is re-balanced when necessary. The target allocations for the U.S. defined benefits plans are approximately 51% equity securities, 29% fixed income securities and 20% other securities and/or cash.

The equity portfolio is diversified by market capitalization and style. The equity portfolio also includes international components.

The objective of the mutual fund portion of the pension assets is to provide interest rate sensitivity for a portion of the assets and to provide diversification. The mutual fund portfolio is diversified within certain quality and maturity guidelines to minimize the adverse effects of interest rate fluctuations.

Certain investments are prohibited and include venture capital, private placements, unregistered or restricted stock, margin trading, commodities, short selling and rights and warrants. Foreign currency futures, options and forward contracts may be used to manage foreign currency exposure.

The following is a summary of the fair value of plan assets for foreign defined benefit pension plans at December 31:

Asset Class	2024 Total	2024 Level 3	2023 Total	2023 Level 3
	(In thousands)			
Life insurance	**$ 10,766**	**$ 10,766**	$ 12,619	$ 12,619
Total investments	**10,766**	**10,766**	12,619	12,619
Investments measured at net asset value	**155,001**	**—**	161,824	—
Total investments	**$ 165,767**	**$ 10,766**	$ 174,443	$ 12,619

Life insurance assets are considered level 3 investments as their values are determined by the sponsor using unobservable market data.

Life insurance assets categorized as level 3 are valued based on unobservable inputs and cannot be corroborated using verifiable observable market data. Investments in level 3 funds are redeemable, however, cash reimbursement may be delayed, or a portion held back until asset finalization.

The following is a summary of the changes in the fair value of the foreign plans' level 3 investments (fair value determined using significant unobservable inputs):

	Life Insurance
	(In thousands)
Balance, December 31, 2022	$ 13,043
Actual return on assets:	
Unrealized losses relating to instruments still held at the end of the year	$ (424)
Realized gains (losses) relating to assets sold during the year	$ —
Purchases, sales, issuances and settlements, net	$ —
Balance, December 31, 2023	$ 12,619
Actual return on assets:	
Unrealized losses relating to instruments still held at the end of the year	**$ (1,853)**
Realized gains (losses) relating to assets sold during the year	$ —
Purchases, sales, issuances and settlements, net	**$ —**
Balance, December 31, 2024	**$ 10,766**

The objective of the Company's foreign defined benefit plans' investment strategy is to maximize the long-term rate of return on plan investments, subject to a reasonable level of risk. Liability studies are also performed on a regular basis to provide guidance in setting investment goals with an objective to balance risks against the current and future needs of the plans. The trustees consider the risk associated with the different asset classes, relative to the plans' liabilities and how this can be affected by diversification, and the relative returns available on equities, mutual fund investments, real estate and cash. Also, the likely volatility of those returns and the cash flow requirements of the plans are considered. It is expected that equities will outperform mutual fund investments over the long term. However, the trustees recognize the fact that mutual fund investments may better match the liabilities for pensioners. Because of the relatively young active employee group covered by the plans and the immature nature of the plans, the trustees have chosen to adopt an asset allocation strategy more heavily weighted toward equity investments. This asset allocation strategy will be reviewed, from time to time, in view of changes in market conditions and in the plans' liability profile. The target allocations for the foreign defined benefit plans are approximately 23% equity securities, 70% fixed income securities and 7% other securities, insurance or cash.

The assumption for the expected return on plan assets was developed based on a review of historical investment returns for the investment categories for the defined benefit pension assets. This review also considered current capital market conditions and projected future investment returns. The estimates of future capital market returns by asset class are lower than the actual long-term historical returns. Therefore, the assumed rate of return for U.S. plans is 7.13% and 5.78% for foreign plans in 2025.

The projected benefit obligation, accumulated benefit obligation and fair value of plan assets for pension plans with a projected benefit obligation in excess of plan assets and pension plans with an accumulated benefit obligation in excess of plan assets were as follows at December 31:

U.S. Defined Benefit Pension Plans:

	Projected Benefit Obligation Exceeds Fair Value of Assets		Accumulated Benefit Obligation Exceeds Fair Value of Assets	
	2024	**2023**	**2024**	**2023**
	(In thousands)			
Benefit obligation	**$ 2,214**	$ 2,558	**$ 2,214**	$ 2,558
Fair value of plan assets	**—**	—	**—**	—

Foreign Defined Benefit Pension Plans:

	Projected Benefit Obligation Exceeds Fair Value of Assets		Accumulated Benefit Obligation Exceeds Fair Value of Assets	
	2024	**2023**	**2024**	**2023**
	(In thousands)			
Benefit obligation	**$ 35,435**	$ 132,796	**$ 35,246**	$ 132,527
Fair value of plan assets	**2,316**	88,028	**2,316**	88,028

The following table provides the amounts recognized in the consolidated balance sheet at December 31:

	2024	**2023**
	(In thousands)	
Funded status asset (liability):		
Fair value of plan assets	**$ 783,203**	$ 774,329
Projected benefit obligation	**(537,111)**	(581,730)
Funded status at the end of the year	**$ 246,092**	$ 192,599
Amounts recognized in the consolidated balance sheet consisted of:		
Non-current asset for pension benefits (other assets)	**$ 281,425**	$ 239,925
Current liabilities for pension benefits	**(2,294)**	(2,816)
Non-current liability for pension benefits	**(33,039)**	(44,510)
Net amount recognized at the end of the year	**$ 246,092**	$ 192,599

The following table provides the amounts recognized in accumulated other comprehensive income, net of taxes, at December 31:

Net amounts recognized:	**2024**	**2023**
	(In thousands)	
Net actuarial loss	**$ 162,086**	$ 184,489
Prior service costs	**1,519**	1,616
Transition asset	**1**	2
Total recognized	**$ 163,606**	$ 186,107

The following table provides the components of net periodic pension benefit expense (income) for the years ended December 31:

	2024	**2023**	**2022**
		(In thousands)	
Defined benefit plans:			
Service cost	**$ 2,800**	$ 2,820	$ 4,919
Interest cost	**28,085**	30,209	20,124
Expected return on plan assets	**(54,672)**	(52,289)	(60,104)
Settlement	**—**	—	(58)
Amortization of:			
Net actuarial loss	**9,619**	11,569	8,531
Prior service costs	**103**	101	100
Transition asset	**1**	1	1
Total net periodic benefit income	**(14,064)**	(7,589)	(26,487)
Other plans:			
Defined contribution plans	**44,898**	43,044	39,326
Foreign plans and other	**8,575**	9,015	8,373
Total other plans	**53,473**	52,059	47,699
Total net pension expense	**$ 39,409**	$ 44,470	$ 21,212

The total net periodic benefit expense (income) is included in Cost of sales, General and administrative expense and Other income and expense in the consolidated statement of income. Unrecognized gains and losses are amortized into future net periodic pension cost using the 10% corridor method over the expected remaining life of the employee group.

The following weighted average assumptions were used to determine the above net periodic pension benefit income for the years ended December 31:

	2024	2023	2022
U.S. Defined Benefit Pension Plans:			
Discount rate	**5.38 %**	5.65 %	3.02 %
Expected return on plan assets	**7.46 %**	7.59 %	6.75 %
Rate of compensation increase (where applicable)	**3.75 %**	3.75 %	3.75 %
Foreign Defined Benefit Pension Plans:			
Discount rate	**4.36 %**	4.73 %	1.78 %
Expected return on plan assets	**6.49 %**	6.41 %	5.85 %
Rate of compensation increase (where applicable)	**3.00 %**	2.50 %	2.50 %

Estimated Future Benefit Payments

The estimated future benefit payments for U.S. and foreign plans are as follows: 2025 – $42.9 million; 2026 – $43.2 million; 2027 – $43.0 million; 2028 – $43.2 million; 2029 – $42.8 million; 2030 to 2034 - $208.1 million. Future benefit payments primarily represent amounts to be paid from pension trust assets. Amounts included that are to be paid from the Company’s assets are not significant in any individual year.

Postretirement Plans and Post-employment Benefits

The Company provides limited postretirement benefits other than pensions for certain retirees and a small number of former employees. Benefits under these arrangements are not funded and are not significant.

The Company also provides limited post-employment benefits for certain former or inactive employees after employment but before retirement. Those benefits are not significant in amount.

The Company has a deferred compensation plan, which allows employees whose compensation exceeds the statutory IRS limit for retirement benefits to defer a portion of earned bonus compensation. The plan permits deferred amounts to be deemed invested in either, or a combination of, an interest-bearing account, phantom mutual fund accounts or the equivalent of a fund which invests in shares of the Company’s common stock on behalf of the employee. The amount owed to participants is an unfunded and unsecured general obligation which is payable out of either the general assets of the Company or a grant of shares of the Company's common stock. The amount deferred under the plan, including income earned, was $44.5 million and $35.9 million at December 31, 2024 and 2023, respectively. Administrative expense for the deferred compensation plan is borne by the Company and is not significant.

13. Contingencies

Indemnifications

In conjunction with certain acquisition and divestiture transactions, the Company may agree to make payments to compensate or indemnify other parties for possible future unfavorable financial consequences resulting from specified events (e.g., breaches of contract obligations or retention of previously existing environmental, tax or employee liabilities) whose terms range in duration and often are not explicitly defined. Where appropriate, the obligation for such indemnifications is recorded as a liability. Because the amount of these types of indemnifications generally is not specifically stated, the overall maximum amount of the obligation under such indemnifications cannot be reasonably estimated. Further, the Company indemnifies its directors and officers for claims against them in connection with their positions with the Company. Historically, any such costs incurred to settle claims related to these indemnifications have been minimal for the Company. The Company believes that future payments, if any, under all existing indemnification agreements would not have a material impact on its consolidated results of operations, financial position or cash flows.

Asbestos Litigation

The Company (including its subsidiaries) has been named as a defendant in a number of asbestos-related lawsuits. Certain of these lawsuits relate to a business which was acquired by the Company and do not involve products which were manufactured or sold by the Company. In connection with these lawsuits, the seller of such business has agreed to indemnify the Company against these claims (the "Indemnified Claims"). The Indemnified Claims have been tendered to, and are being defended by, such seller. The seller has met its obligations, in all respects, and the Company does not have any reason to believe such party would fail to fulfill its obligations in the future. To date, no judgments have been rendered against the Company as a result of any asbestos-related lawsuit. The Company believes that it has good and valid defenses to each of these claims and intends to defend them vigorously.

Environmental Matters

Certain historic processes in the manufacture of products have resulted in environmentally hazardous waste by-products as defined by federal and state laws and regulations. At December 31, 2024, the Company is named a Potentially Responsible Party ("PRP") at 13 non-AMETEK-owned former waste disposal or treatment sites (the "non-owned"sites). The Company is identified as a "de minimis" party in a majority of these sites based on the low volume of waste attributed to the Company relative to the amounts attributed to other named PRPs. The Company is participating in the investigation and/or related required remediation as part of a PRP Group and reserves have been established sufficient to satisfy the Company's expected obligations. The Company historically has resolved these issues within established reserve levels and reasonably expects this result will continue. In addition to these non-owned sites, the Company has an ongoing practice of providing reserves for probable remediation activities at certain of its current or previously owned manufacturing locations (the "owned" sites). For claims and proceedings against the Company with respect to other environmental matters, reserves are established once the Company has determined that a loss is probable and estimable. This estimate is refined as the Company moves through the various stages of investigation, risk assessment, feasibility study and corrective action processes. In certain instances, the Company has developed a range of estimates for such costs and has recorded a liability based on the best estimate. It is reasonably possible that the actual cost of remediation of the individual sites could vary from the current estimates and the amounts accrued in the consolidated financial statements; however, the amounts of such variances are not expected to result in a material change to the consolidated financial statements. In estimating the Company's liability for remediation, the Company also considers the likely proportionate share of the anticipated remediation expense and the ability of the other PRPs to fulfill their obligations.

Total environmental reserves at December 31, 2024 and 2023 were \$29.8 million and \$37.1 million, respectively, for both non-owned and owned sites. In 2024, the Company recorded \$9.7 million in reserves. Additionally, in 2024 the Company spent \$17.0 million on environmental matters. The total environmental expense is included in Other income and expense in the consolidated statement of income.

The Company has agreements with other former owners of certain of its acquired businesses, as well as new owners of previously owned businesses. Under certain of the agreements, the former or new owners retained, or assumed and agreed to indemnify the Company against, certain environmental and other liabilities under certain circumstances. The Company and some of these other parties also carry insurance coverage for some environmental matters.

The Company believes it has established reserves for the environmental matters described above, which are sufficient to perform all known responsibilities under existing claims and consent orders. In the opinion of management, based on presently available information and the Company's historical experience related to such matters, an adequate provision for probable costs has been made and the ultimate cost resulting from these actions is not expected to materially affect the consolidated results of operations, financial position or cash flows of the Company.

14. Leases and Other Commitments

Leases

The Company has commitments under operating leases for certain facilities, vehicles and equipment used in its operations. Cash used in operations for operating leases was not materially different from operating lease expense for the years ended December 31, 2024 and 2023. Our leases have initial lease terms ranging from 1 month to 15 years.

The components of lease expense were as follows:

	2024	2023	2022
		(In thousands)	
Operating lease cost	**$ 76,315**	$ 63,049	$ 59,296
Variable lease cost	**11,730**	11,384	11,096
Total lease cost	**$ 88,045**	$ 74,433	$ 70,392

Supplemental balance sheet information related to leases was as follows:

	December 31,	
	2024	2023
	(In thousands)	
Right of use assets, net	**$ 235,666**	$ 229,723
Lease liabilities included in Accrued liabilities and other	**54,736**	61,055
Lease liabilities included in Other long-term liabilities	**190,017**	182,436
Total lease liabilities	**$ 244,753**	$ 243,491

Supplemental cash flow information and other information related to leases was as follows for the year ended December 31:

	2024	2023
	(In thousands)	
Right-of-use assets obtained in exchange for new operating liabilities	**$ 44,079**	**$ 95,052**
Weighted-average remaining lease terms – operating leases (years)	**6.49**	**6.66**
Weighted-average discount rate – operating leases	**4.74 %**	**4.48 %**

Maturities of lease liabilities as of December 31, 2024 were as follows:

Lease Liability Maturity Analysis	Operating Leases
	(In thousands)
2025	$ 61,789
2026	52,241
2027	39,654
2028	29,419
2029	23,576
Thereafter	71,426
Total lease payments	278,105
Less: imputed interest	33,352
	$ 244,753

The Company does not have any significant leases that have not yet commenced.

Other Commitments

As of December 31, 2024, and 2023, the Company had $761.9 million and $790.0 million, respectively, in purchase obligations outstanding, which primarily consisted of contractual commitments to purchase certain inventories at fixed prices.

The Company does not provide significant guarantees on a routine basis. The Company primarily issues guarantees, stand-by letters of credit and surety bonds in the ordinary course of its business to provide financial or performance assurance to third parties on behalf of its consolidated subsidiaries to support or enhance the subsidiary’s stand-alone creditworthiness. The amounts subject to certain of these agreements vary depending on the covered contracts outstanding at any particular point in time. At December 31, 2024, the maximum amount of future payment obligations relative to these various guarantees was $261.2 million and the outstanding liability under certain of those guarantees was $173.1 million.

15. Reportable Segments and Geographic Areas Information

Descriptive Information about Reportable Segments

The Company has two reportable segments, EIG and EMG. The Company’s operating segments are determined based on information utilized by the Chief Executive Officer, its chief operating decision maker ("CODM"). Certain of the Company’s operating segments have been aggregated for segment reporting purposes primarily on the basis of product type, production processes, distribution methods and similarity of economic characteristics.

EIG manufactures advanced instruments for the process, power and industrial, and aerospace markets. It provides process and analytical instruments for the oil and gas, petrochemical, pharmaceutical, semiconductor, automation, and food and beverage industries. EIG also provides instruments to the laboratory equipment, ultra-precision manufacturing, medical, and test and measurement markets. It makes power quality monitoring and metering devices, uninterruptible power supplies, programmable power equipment, electromagnetic compatibility test equipment and gas turbines sensors. EIG also provides dashboard instruments for heavy trucks and other vehicles, as well as instrumentation and controls for the food and beverage industries. It supplies the aerospace and defense industry with aircraft and engine sensors, embedded computing systems, monitoring systems, power supplies, fuel and fluid measurement systems, and data acquisition systems.

EMG designs and manufactures highly engineered medical components and devices, automation solutions, thermal management systems, specialty metals and electrical interconnects. EMG products include single-use and consumable surgical instruments, implantable components, and drug delivery systems used across a wide range of medical applications. It also manufactures highly engineered electrical connectors and electronic packaging used to protect sensitive electronic devices. EMG makes precision motion control products for data storage, medical devices, business equipment, automation and other applications. It supplies high-purity powdered metals, strip and foil, specialty clad metals and metal matrix composites. EMG also manufactures motors used in commercial appliances, food and beverage machines, hydraulic pumps and industrial blowers. It produces motor-blower systems and heat exchangers used in thermal management and other applications on a variety of military and commercial aircraft and military ground vehicles. EMG also operates a global network of aviation maintenance, repair and overhaul facilities.

Measurement of Segment Results

The CODM reviews segment operating income statements in order to assess performance and allocate resources to each segment. Sales and operating income are key metrics monitored by the CODM when determining each segment's financial condition and operating performance. In addition, the CODM receives depreciation, amortization, research, development, and engineering costs, capital spending, and assets of each segment on a quarterly basis to monitor cash flow and asset needs of each segment.

Segment operating income represents net sales less all direct costs and expenses (including certain administrative and other expenses) applicable to each segment but does not include interest expense. Net sales by segment are reported after elimination of intra- and inter-segment sales and profits, which are insignificant in amount. Reported segment assets include allocations directly related to the segment's operations. Corporate assets consist primarily of investments, pensions, insurance deposits and deferred taxes.

Reportable Segment Financial Information (in thousands):

	EMG	EIG	Corporate	Total Consolidated
2024				
Net Sales	$ 2,281,265	$ 4,659,915	$ —	$ 6,941,180
Cost of sales [1]	1,736,694	2,728,019	—	4,464,713
Selling expense	88,070	503,487	—	591,557
Segment Operating Income	456,501	1,428,409	—	1,884,910
Corporate G&A	—	—	105,348	105,348
Operating Income	456,501	1,428,409	(105,348)	1,779,562
Interest expense	—	—	(112,962)	(112,962)
Other (expense) income, net	—	—	(5,061)	(5,061)
Income before Income Taxes	$ 456,501	$ 1,428,409	$ (223,371)	$ 1,661,539
Depreciation	$ 58,049	$ 71,351	$ 5,866	$ 135,266
Amortization	74,452	173,209	—	247,661
Total depreciation and amortization	$ 132,501	$ 244,560	$ 5,866	$ 382,927
Research, Development & Engineering costs [2]	$ 72,434	$ 299,441	$ —	$ 371,875
Assets	$ 4,758,856	$ 9,302,031	$ 570,282	$ 14,631,169
Capital Expenditures [3]	$ 41,022	$ 58,859	$ 28,277	$ 128,158

(1) Includes $29.2 million in EMG in for Paragon integration costs.

(2) Included in cost of sales.

(3) Includes $1.1 million in EIG from acquired businesses.

	EMG	EIG	Corporate	Total Consolidated
2023				
Net Sales	$ 1,972,700	$ 4,624,250	$ —	$ 6,596,950
Cost of sales	1,393,086	2,819,399	—	4,212,485
Selling expense	83,045	493,889	—	576,934
Segment Operating Income	496,569	1,310,962	—	1,807,531
Corporate G&A	—	—	100,072	100,072
Operating Income	496,569	1,310,962	(100,072)	1,707,459
Interest expense	—	—	(81,795)	(81,795)
Other (expense) income, net	—	—	(19,252)	(19,252)
Income before Income Taxes	$ 496,569	$ 1,310,962	$ (201,119)	$ 1,606,412
Depreciation	$ 40,443	$ 77,344	$ 4,715	$ 122,502
Amortization	43,471	171,663	—	215,134
Total depreciation and amortization	$ 83,914	$ 249,007	$ 4,715	$ 337,636
Research, Development & Engineering costs (1)	$ 68,960	$ 282,701	$ —	$ 351,661
Assets	$ 4,957,944	$ 9,559,282	$ 506,307	$ 15,023,533
Capital Expenditures (2)	$ 272,060	$ 86,616	$ 12,385	$ 371,061

(1) Included in cost of sales.

(2) Includes $223.7 million in EMG, and $11.1 million in EIG from acquired businesses.

	EMG	EIG	Corporate	Total Consolidated
2022				
Net Sales	$ 1,921,177	$ 4,229,353	$ —	$ 6,150,530
Cost of sales (1)	1,337,108	2,668,153	—	4,005,261
Selling expense	80,476	471,471	—	551,947
Segment Operating Income	503,593	1,089,729	—	1,593,322
Corporate G&A	—	—	92,630	92,630
Operating Income	503,593	1,089,729	(92,630)	1,500,692
Interest expense	—	—	(83,186)	(83,186)
Other income (expense), net	—	—	11,186	11,186
Income before Income Taxes	$ 503,593	$ 1,089,729	$ (164,630)	$ 1,428,692
Depreciation	$ 37,474	$ 73,093	$ 3,095	$ 113,662
Amortization	40,422	165,343	—	205,765
Total depreciation and amortization	$ 77,896	$ 238,436	$ 3,095	$ 319,427
Research, Development & Engineering costs (2)	$ 63,892	$ 258,178	$ —	$ 322,070
Assets	$ 2,617,685	$ 9,430,797	$ 382,638	$ 12,431,120
Capital Expenditures (3)	$ 38,186	$ 93,505	$ 19,757	$ 151,448

(1) Includes $7.1 million in EMG from a gain on the sale of a facility.

(2) Included in cost of sales.

(3) Includes $12.3 million in EIG and $0.1 million in Corporate from acquired businesses.

Geographic Areas

Information about the Company’s operations in different geographic areas for the years ended December 31, 2024 and 2023 is shown below.

	2024	2023
	(In thousands)	
Long-lived assets from continuing operations (excluding intangible assets):		
United States	**$ 590,386**	$ 646,381
International[1]:		
United Kingdom	**68,239**	73,328
European Union countries	**84,707**	95,781
Asia	**12,416**	13,351
Other foreign countries	**62,863**	62,452
Total international	**228,225**	244,912
Total consolidated	**$ 818,611**	$ 891,293

(1) Represents long-lived assets of foreign-based operations only.

16. Additional Consolidated Income Statement and Cash Flow Information

Included in other income (expense), net are interest and other investment income of $6.8 million, $12.0 million and $1.0 million for 2024, 2023 and 2022, respectively. Income taxes paid in 2024, 2023 and 2022 were $302.2 million, $336.2 million and $299.3 million, respectively. Cash paid for interest was $113.9 million, $66.3 million and $80.2 million in 2024, 2023 and 2022, respectively.

17. Stockholders’ Equity

In 2023, the Company repurchased approximately 0.1 million shares of its common stock for $7.8 million in cash under its share repurchase authorization. On May 5, 2022, the Company's Board of Directors approved a $1 billion authorization of its common stock, which replaced the previous $500 million authorization announced in February 2019. In 2024, the Company repurchased approximately 1.3 million shares of its common stock for $223.1 million in cash under its share repurchase authorization. At December 31, 2024, $593.1 million was available under the Company’s Board of Directors authorization for future share repurchases.

Effective February 9, 2024, the Company’s Board of Directors approved a 12% increase in the quarterly cash dividend on the Company’s common stock to $0.28 per common share from $0.25 per common share.

At December 31, 2024, the Company held 39.4 million shares in its treasury at a cost of $2,114.0 million, compared with 38.4 million shares at a cost of $1,896.6 million at December 31, 2023. The number of shares outstanding at December 31, 2024 was 230.7 million shares, compared with 230.9 million shares at December 31, 2023.

Subsequent Events

Effective February 7, 2025, the Company's Board of Directors approved an 11% increase in the quarterly cash dividend on its common stock to $0.31 per share from $0.28 per share.

Effective February 7, 2025, the Company's Board of Directors approved a $1.25 billion share repurchase authorization. This new authorization replaces the previous $1 billion share repurchase authorization approved in May 2022.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

The Company maintains a system of disclosure controls and procedures that is designed to provide reasonable assurance that information, which is required to be disclosed, is accumulated and communicated to management in a timely manner. Under the supervision and with the participation of our management, including the Company's principal executive officer and principal financial officer, we have evaluated the effectiveness of our system of disclosure controls and procedures as required by Exchange Act Rule 13a-15(b) as of December 31, 2024. Based on that evaluation, the Company's principal executive officer and principal financial officer concluded that the Company's disclosure controls and procedures are effective at the reasonable assurance level.

Such evaluation did not identify any change in the Company's internal control over financial reporting during the quarter ended December 31, 2024 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Internal Control over Financial Reporting

Management's report on the Company's internal controls over financial reporting is included in Part II, Item 8 of this Annual Report on Form 10-K.The report of the independent registered public accounting firm with respect to the effectiveness of internal control over financial reporting is included in Part II, Item 8 of this Annual Report on Form 10-K.

Item 9B. Other Information

Insider Trading Arrangements and Policies

During the quarter ended December 31, 2024, no director or officer of the Company adopted or terminated a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement," as each term is defined in Item 408(a) of Regulation S-K.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

a) Directors of the Registrant.

Information with respect to Directors of the Company is set forth under the heading “Election of Directors” in the Company’s Proxy Statement for the 2025 Annual Meeting of Stockholders and is incorporated herein by reference.

b) Executive Officers of the Registrant.

Information with respect to executive officers of the Company is set forth under the heading “Executive Officers” in the Company’s Proxy Statement for the 2025 Annual Meeting of Stockholders and is incorporated herein by reference.

c) Identification of the Audit Committee.

Information concerning the audit committee of the Company is set forth under the heading “Committees of the Board” in the Company’s Proxy Statement for the 2025 Annual Meeting of Stockholders and is incorporated herein by reference.

d) Audit Committee Financial Experts.

Information concerning the audit committee financial experts of the Company is set forth under the heading “Committees of the Board” in the Company’s Proxy Statement for the 2025 Annual Meeting of Stockholders and is incorporated herein by reference.

e) Corporate Governance/Nominating Committee.

Information concerning any material changes to the way in which security holders may recommend nominees to the Company’s Board of Directors is set forth under the heading “Information about the 2026 Annual Meeting” in the Company’s Proxy Statement for the 2025 Annual Meeting of Stockholders and is incorporated herein by reference.

f) Code of Ethics for Chief Executive Officer and Senior Financial Officers.

The Company has adopted a Code of Ethics for the principal executive officer, principal financial officer and principal accounting officer, which may be found on the Company’s website at www.ametek.com. Any amendments to the Code of Ethics or any grant of a waiver from the provisions of the Code of Ethics requiring disclosure under applicable U.S. Securities and Exchange Commission rules will be disclosed on the Company’s website.

Item 11. Executive Compensation

Information regarding executive compensation, including the “Compensation Discussion and Analysis,” the “Compensation Committee Report,” “Compensation Tables” and “Potential Payments Upon Termination or Change of Control” is set forth under the heading “Executive Compensation” in the Company’s Proxy Statement for the 2025 Annual Meeting of Stockholders and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information regarding security ownership of certain beneficial owners and management appearing under "Stock Ownership of Executive Officers and Directors" and "Beneficial Ownership of Principal Stockholders" in the Company's Proxy Statement for the 2025 Annual Meeting of Stockholders is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information appearing under "Certain Relationships and Related Transactions" and "Independence" in the Company's Proxy Statement for the 2025 Annual Meeting of Stockholders is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

Information appearing under "Ratification of Appointment of Independent Registered Public Accounting Firm" in the Company's Proxy Statement for the 2025 Annual Meeting of Stockholders is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

AMETEK, Inc.

By: /s/ DAVID A. ZAPICO
David A. Zapico
Chief Executive Officer

Date : February 20, 2025

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ DAVID A. ZAPICO David A. Zapico	Chairman of the Board of Directors and Chief Executive Officer (Principal Executive Officer)	February 20, 2025
/s/ DALIP M. PURI Dalip M. Puri	Executive Vice President – Chief Financial Officer (Principal Financial Officer)	February 20, 2025
/s/ THOMAS M. MONTGOMERY Thomas M. Montgomery	Senior Vice President – Comptroller (Principal Accounting Officer)	February 20, 2025
/s/ THOMAS A. AMATO Thomas A. Amato	Director	February 20, 2025
/s/ TOD E. CARPENTER Tod E. Carpenter	Director	February 20, 2025
/s/ ANTHONY J. CONTI Anthony J. Conti	Director	February 20, 2025
/s/ STEVEN W. KOHLHAGEN Steven W. Kohlhagen	Director	February 20, 2025
/s/ GRETCHEN W. MCCLAIN Gretchen W. McClain	Director	February 20, 2025
/s/ KARLEEN M. OBERTON Karleen M. Oberton	Director	February 20, 2025
/s/ DEAN SEAVERS Dean Seavers	Director	February 20, 2025
/s/ SUZANNE L. STEFANY Suzanne L. Stefany	Director	February 20, 2025

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SHAREHOLDER INFORMATION

Corporate Office

AMETEK, Inc.
1100 Cassatt Road
Berwyn, PA 19312-1177 U.S.A.
610-647-2121 or 800-473-1286

Investor Communications

Investors seeking additional information about the company may call or write Investor Relations at the Corporate Office or e-mail investor.relations@ametek.com. AMETEK earnings announcements, press releases, SEC filings and other investor information are available at the Investors section of AMETEK's website: ametek.com.

Annual Meeting

Wednesday, May 7, 2025
11:00 a.m. Eastern Time
Via webcast:
virtualshareholdermeeting.com/AME2025

All shareholders are invited to attend.

Stock Exchange Listing

New York Stock Exchange
Symbol: AME

Shareholder Services

Equiniti Trust Company, LLC
Attn: Shareholder Services
P.O. Box 500
Newark, NJ 07101
(800) 937-5449 or (718) 921-8124
equiniti.com/us/ast-access/individuals

Inquiries may also be sent via email to helpAST@equiniti.com.

AMETEK's transfer agent responds to inquiries regarding dividend payments, direct deposit of dividends, stock transfers, address changes, and replacement of lost dividend payments and lost stock certificates.

Independent Registered Public Accounting Firm

Ernst & Young LLP
Philadelphia, Pennsylvania

For the most up-to-date investor information, scan this code with your smartphone to be taken to the Investors section of ametek.com.

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