ASTM INTERNATIONAL

BEYOND BOUNDARIES

2022 ANNUAL REPORT

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ASTM International developed a set of **Core Values** that exemplify ASTM's mission and embody our beliefs and organizational priorities:

WE WELCOME

everyone to our open and global community of belonging where every voice is unique and every voice matters.

WE SERVE

with passion, commitment, and integrity, striving to exceed the expectations of each other, our members, and all those who rely on us.

WE COLLABORATE

to discover and deliver the best solutions through diversity of thought, open minds, and teamwork.

WE BELIEVE

in our ability to make a positive difference in people's lives through standards and services, helping our world work better.

WE INNOVATE

by embracing new possibilities, challenging ourselves, thinking boldly, driving change, and evolving as an organization.

BEYOND BOUNDARIES

As you flip through this year's Annual Report, you'll be able to see specific callouts to updates and activities that demonstrate corresponding Core Values reflected in the bottom of respective pages.

BEYOND BOUNDARIES

Throughout ASTM International's history, whenever a challenge has been presented, ASTM's industrious volunteer members, enthusiastic partners, and dedicated staff have always found a way to meet it head on. The boundaries and challenges we conquered over the last few years are a testament to the organization's ability to adapt, evolve, and operate beyond boundaries.

2022 was no different. Last year, ASTM International experienced a healthy return to in-person standards development meetings after years of virtual efforts, forged important global partnerships, and established exciting new activities to combat unique and emerging challenges.

As you'll shortly discover reading through the pages of this year's report, ASTM spearheaded significant and important standards development that:

- Underpinned the safety of our water;
- Ensured the performance of important consumer products;
- Bolstered construction and infrastructure projects, and so much more.

In 2022, we launched ASTM Xcellerate, an emerging technology program focused on strengthening the world's emerging technology from research to standards. We debuted a new committee to address standards for digital information in the supply chain. And we took standards efforts to new heights, literally, as astronaut and chair of ASTM's commercial spaceflight committee (F47) Michael López-Alegría joined an ASTM executive committee meeting from the International Space Station.

Together, we grew ASTM's robust Emerging Professionals program, launched a new Student Chapter at University of Central Lancashire in the U.K., and expanded ASTM's portfolio of products and services through the launch of engaging new features, products, and publications.

While 2022 was a year filled with exciting new activities, in a way, it was business as usual. At ASTM, we're in the business of breaking through boundaries, charting new paths, and continuously identifying new ways of helping our world work better. We encourage you to take a moment to peruse the report and celebrate the accomplishments of 2022.

At ASTM, we're in the business of breaking through boundaries, charting new paths, and continuously identifying new ways of helping our world work better

At ASTM, we know our standards help our world work best, when they're championed by a diverse array of unique voices. Creating an environment that fosters and welcomes everyone has been a key factor in ASTM's expanded diversity, equity, inclusion, and belonging efforts in 2022. That tenant served as a foundation for last year's efforts to expand ASTM's Memorandum of Understanding program with the inclusion of Argentina and Sudan. And it's what drove the creation of key industry partnerships to support carbon-neutral concrete, cannabis, biopharmaceuticals, and uncrewed aircraft systems.

Cesar A. Constantino
2022 Board Chair
ChemAI

Katharine E. Morgan
President
ASTM International

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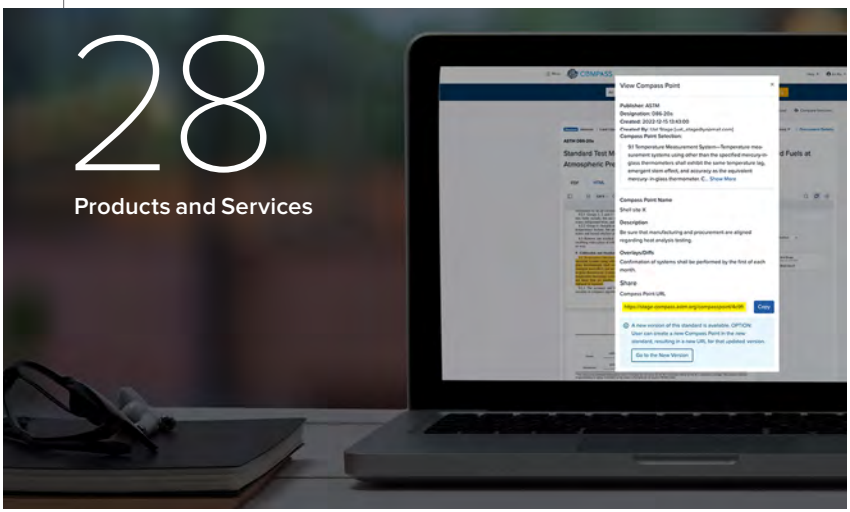
CORE VALUE: **WE COLLABORATE**



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Products and Services

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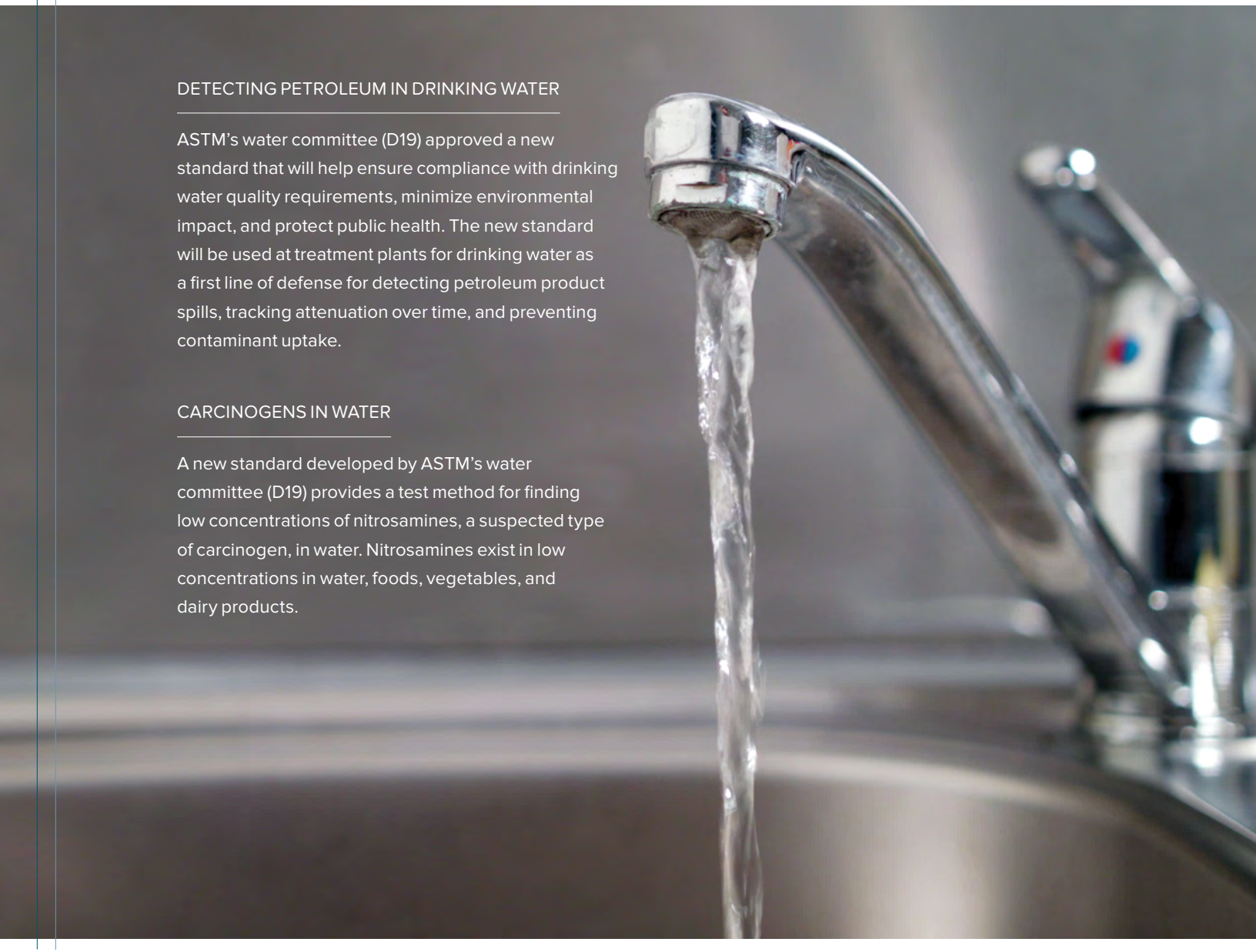
PRESIDENT

Katharine E. Morgan

THE ENVIRONMENT AND ENERGY



DETECTING PETROLEUM IN DRINKING WATER

ASTM's water committee (D19) approved a new standard that will help ensure compliance with drinking water quality requirements, minimize environmental impact, and protect public health. The new standard will be used at treatment plants for drinking water as a first line of defense for detecting petroleum product spills, tracking attenuation over time, and preventing contaminant uptake.

CARCINOGENS IN WATER

A new standard developed by ASTM's water committee (D19) provides a test method for finding low concentrations of nitrosamines, a suspected type of carcinogen, in water. Nitrosamines exist in low concentrations in water, foods, vegetables, and dairy products.

STAKEHOLDER ENGAGEMENT ON ENVIRONMENTAL RISK MANAGEMENT

ASTM's environmental assessment, risk management and corrective action committee (E50) approved a new standard for stakeholder engagement on environmental risk management and climate. The standard includes guidance and best practices that can be applied to site remediation, brownfields development, natural resource management, and much more.

GASEOUS FUELS

A new ASTM standard developed by the gaseous fuels committee (D03) provides a test method for measuring siloxanes and trimethylsilanol (TMSOL) in gaseous fuels. This includes gas grids and elements of generating electricity such as engines, turbines, and catalysts.

PETROLEUM LAB PROFESSIONAL CERTIFICATION PROGRAM

ASTM International launched a series of certifications specially designed for petroleum lab professionals. The new program covers such product areas as aviation fuel, motor gasoline, crude oil, diesel fuel and others. The credentials offered are meant to help both labs and individual technicians demonstrate their awareness and commitment to industry standards.

DETECTION OF LEGIONNAIRES' DISEASE BACTERIA

ASTM's water committee (D19) approved a new standard that provides an easy and accurate culture method for detecting the primary bacteria responsible for Legionnaires' disease. Legionnaires' disease is a potentially lethal pneumonia contracted from the inhalation of *Legionella pneumophila* that has been aerosolized by contaminated water sources such as showers, pools and spas, or cooling towers.

DRY FILTERABILITY OF LUBRICANTS

ASTM's committee on petroleum products, liquid fuels, and lubricants (D02) developed a new standard that provides a test method for dry filterability of lubricants and hydraulic fluids by mass flow technique. This test method differs from existing standards because the user assesses filterability based on mass flow rates, which lends itself to automation and is less vulnerable to error.

CONSTRUCTION AND INFRASTRUCTURE

CONCRETE PIPE IN TRENCHLESS CONSTRUCTION

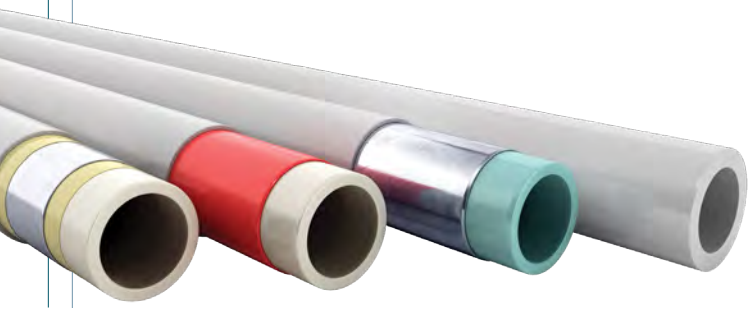
ASTM's concrete pipe committee (C13) approved a new standard that will help in manufacturing circular concrete pipe that is installed using pipe jacking techniques. This type of pipe is typically used to convey sewage, industrial wastes, stormwater, or utilities.

VINYL SHEET PILING

A new standard from ASTM's geosynthetics committee (D35) will help engineers, designers, and specifiers who work with vinyl sheet piling. Applications for such piling include the construction of seawalls, retaining walls, and chemical cut-off walls.

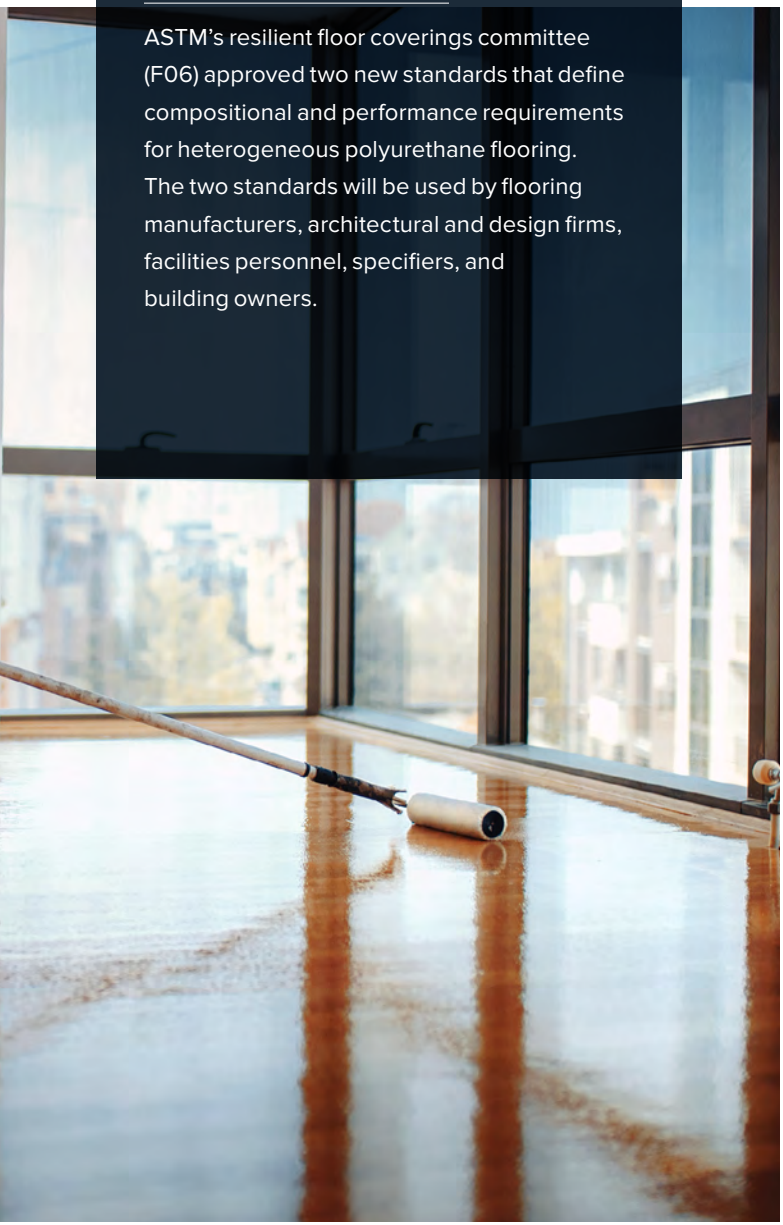
EVALUATING RESISTANCE OF POLYPROPYLENE PRESSURE PIPING TO DISINFECTANTS

ASTM's plastic piping systems committee (F17) approved a new standard test method that will help ensure polypropylene pressure piping materials are suitably resistant to the presence of disinfectants in potable water systems.



PERFORMANCE REQUIREMENTS FOR POLYURETHANE FLOORING

ASTM's resilient floor coverings committee (F06) approved two new standards that define compositional and performance requirements for heterogeneous polyurethane flooring. The two standards will be used by flooring manufacturers, architectural and design firms, facilities personnel, specifiers, and building owners.



FLUID AND GAS TRANSPORT

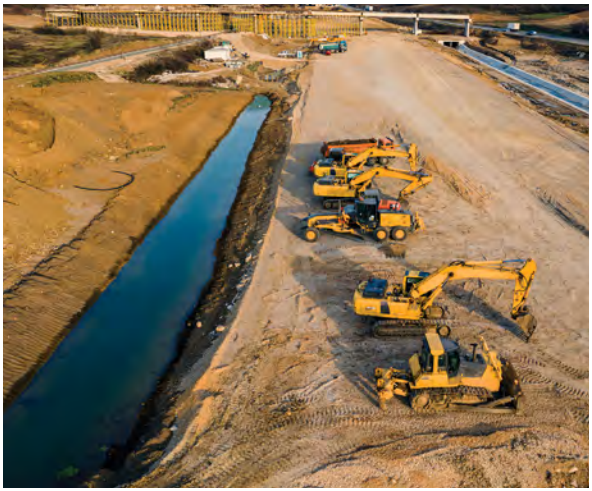
ASTM's plastic piping systems committee (F17) also approved a new standard that will aid in the manufacture of piping systems to transport fluids and gases.

GEOHAZARD NETTING MEASUREMENT

ASTM's soil and rock committee (D18) approved a new standard that will help design engineers and regulators when using rockfall mitigation nettings on construction projects. Geohazard nettings are often used in mountainous regions to prevent falling rocks from penetrating into the roadways.

WATER CONTENT AT ROAD CONSTRUCTION SITES

The soil and rock committee (D18) also approved a new standard that will help road construction professionals to better determine on-site water content in soil and rock.



CONSTRUCTION AND INFRASTRUCTURE

TINY HOUSES

ASTM International's committee on performance of buildings (E06) approved a new subcommittee on tiny houses. This new subcommittee intends to develop standards for several proposed subject areas for tiny houses, including best building practices, quality assurance programs, and minimum construction requirements.

WATER-RESISTIVE BARRIERS IN BUILDING CONSTRUCTION

A new ASTM standard will describe in detail the design and specification process for water vapor transmission properties of water-resistive barriers and air barriers (WRB/AB) in building construction. ASTM's performance of buildings committee (E06) developed the new standard.

RESILIENT FLOORING ADHESIVE SYSTEMS

ASTM's adhesives committee (D14) approved a new standard that will serve as a guideline for developing adhesive systems used in the installation of resilient flooring. The standard establishes minimum requirements for adhesives used for installing resilient floor covering, within a climate-controlled structure, when adhered directly and permanently to a structurally sound and recommended substrate.

BELOW-GRADE WATERPROOFING SYSTEMS

ASTM's roofing and waterproofing committee (D08) approved a new standard that provides guidelines and limitations for below-grade foundation waterproofing systems. The standard specifically covers applications of sodium bentonite needle-punched geotextile waterproofing systems.

QUANTIFYING ORGANIC CONTAMINANTS

A new ASTM standard will provide a test method related to quantifying volatile organic compounds through mass spectrometry. The standard was developed by ASTM's soil and rock committee (D18).

ASTM INTERNATIONAL AND NEU SIGN MEMORANDUM OF UNDERSTANDING

ASTM International and NEU, an ACI Center of Excellence for Carbon-Neutral Concrete, signed a memorandum of understanding (MoU) aimed at reducing and eliminating the carbon footprint of concrete in the built environment. The MoU will allow both organizations to effectively collaborate and reduce redundant efforts on issues related to carbon-neutral concrete.

CANNABIS

CANNABIS SUPPLIER LIFECYCLE MANAGEMENT

ASTM International's cannabis committee (D37) developed a new practice for supplier lifecycle management. The standard provides cannabis and hemp operations with the definitive steps covering seven key supplier lifecycle activities.

CANNABIS SAFETY

The committee also approved a new standard on medicinal-use cannabis inflorescence. The standard provides specifications for cannabis flower that can be used to support sound and reproducible research.

LICENSING AGREEMENT FOR CANNABIS CERTIFICATION

ASTM International and the Colombian Institute of Technical Standards and Certification (ICONTEC) signed a licensing agreement related to certifications for the cannabis industry. Per the new agreement, ASTM International will allow use of its CANNQ/HEMPQ certification program for cultivators, as well as ASTM's Certification Mark, while ICONTEC will allow use of its Certification Good Agricultural Practices in Cannabis (BPARC).

ASTM CANNABIS COMMITTEE APPROVES SUITE OF NEW CANNABIS STANDARDS

ASTM's cannabis committee (D37) also approved a suite of six new standards that will benefit those working within the cannabis industry, as well as regulators and consumers of cannabis and cannabis-related products.

1. **D8375** will provide a method to establish cannabinoid content in cannabis and hemp samples.
2. **D8399** will aid laboratories in analyzing cannabis and hemp samples to establish pesticide concentration levels – or lack thereof – to ensure products meet regulatory requirements within appropriate jurisdictions.
3. **D8442** will provide a method to test for terpenes and cannabinoids in cannabis using gas chromatography.
4. **D8469** will aid manufacturers, regulatory bodies, and other cannabis industry stakeholders by providing a new test method for metals in cannabis.
5. **D8440** will provide credible and achievable specifications for food-grade hempseed products.
6. **D8441/D8441M** establishes an international symbol that indicates whether a product contains intoxicating cannabinoids.

As a not-for-profit organization that develops voluntary consensus standards, ASTM International defers to appropriate government authorities to determine the legal and regulatory framework concerning the control and use of cannabis.

HEALTH AND SAFETY

SURFACE CONTAMINATION TESTING

ASTM International's committee on pesticides, antimicrobials, and alternative control agents (E35) approved a new standard that will be used to help mimic how surfaces are contaminated by microbial material.

CONTINUOUS MANUFACTURING

A new standard from ASTM's manufacture of pharmaceutical and biopharmaceutical products committee (E55) will help advance the use of continuous manufacturing (CM) technologies in the biopharmaceutical industry. In a CM process, individual unit operations are integrated into a connected flow which provides multiple efficiencies in terms of scale and productivity.

ASTM INTERNATIONAL AND BIOPHORUM SIGN MEMORANDUM OF UNDERSTANDING

ASTM International and the biopharmaceutical industry collaboration group BioPhorum signed a memorandum of understanding (MoU) aimed at accelerating standardization within the biopharmaceutical industry. The MoU is focused on advancement in bio and new modality manufacturing to bring solutions to patients faster. By formalizing this relationship, BioPhorum and ASTM aim to ensure the best prioritization to advance biopharmaceutical industry standards.

INNOVATION

STUMBLING-RELATED FALL RISK

A new ASTM standard from ASTM's exoskeletons and exosuits committee (F48) will help to evaluate the effect of exoskeletons on fall risk due to stumbling. The new standard is a product of ASTM's Exo Technology Center of Excellence's Research to Standards efforts.

POWDER BED FUSION DESIGN GUIDANCE

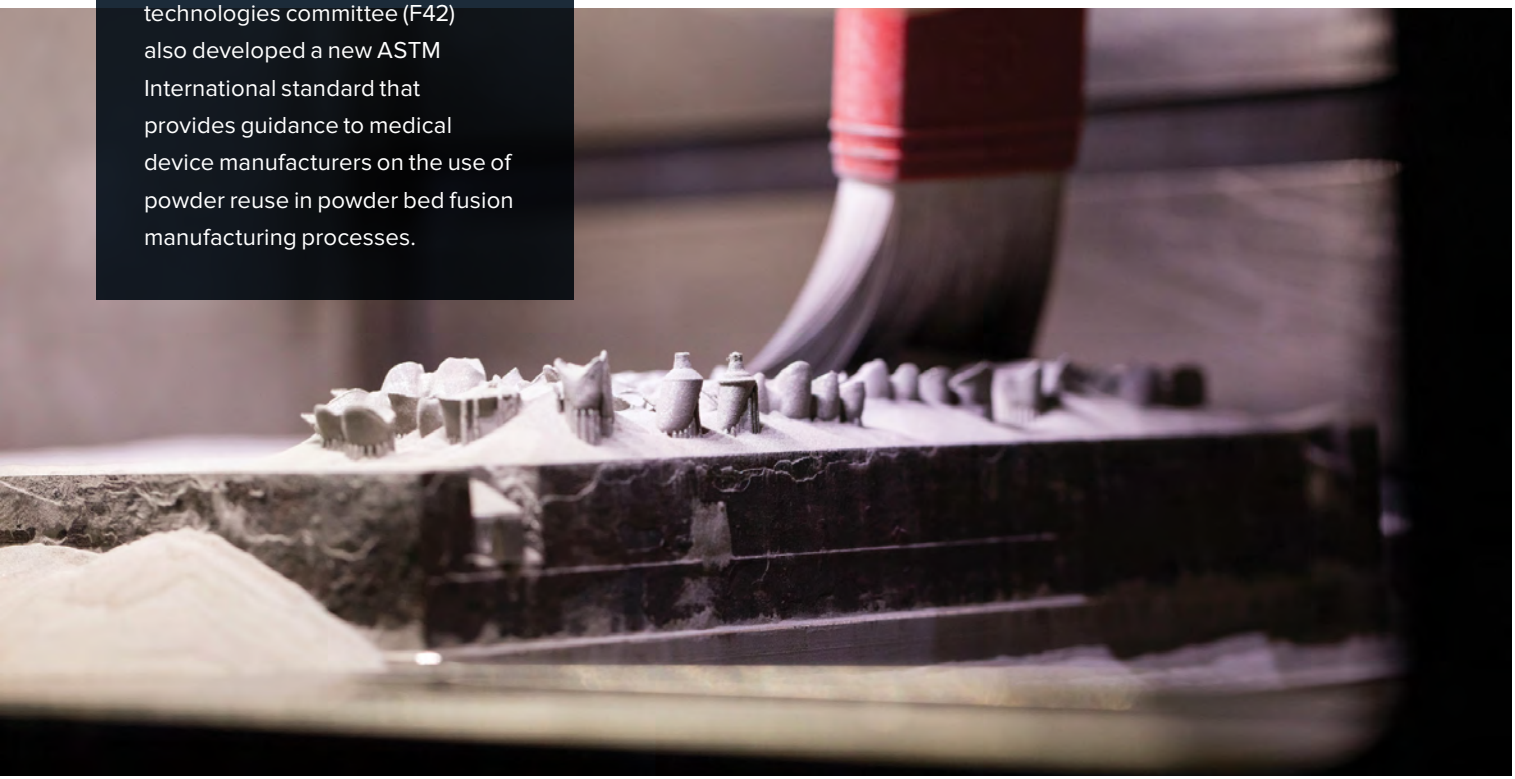
ASTM's additive manufacturing committee (F42) developed a new standard that will provide advice for designers considering building parts using the powder bed fusion for metals process. The new guide provides an overview of the commonly used post-processing operations, challenges in carrying out those operations, and best practices on how to address these challenges.

ROBOTIC GRASPING AND MANIPULATION

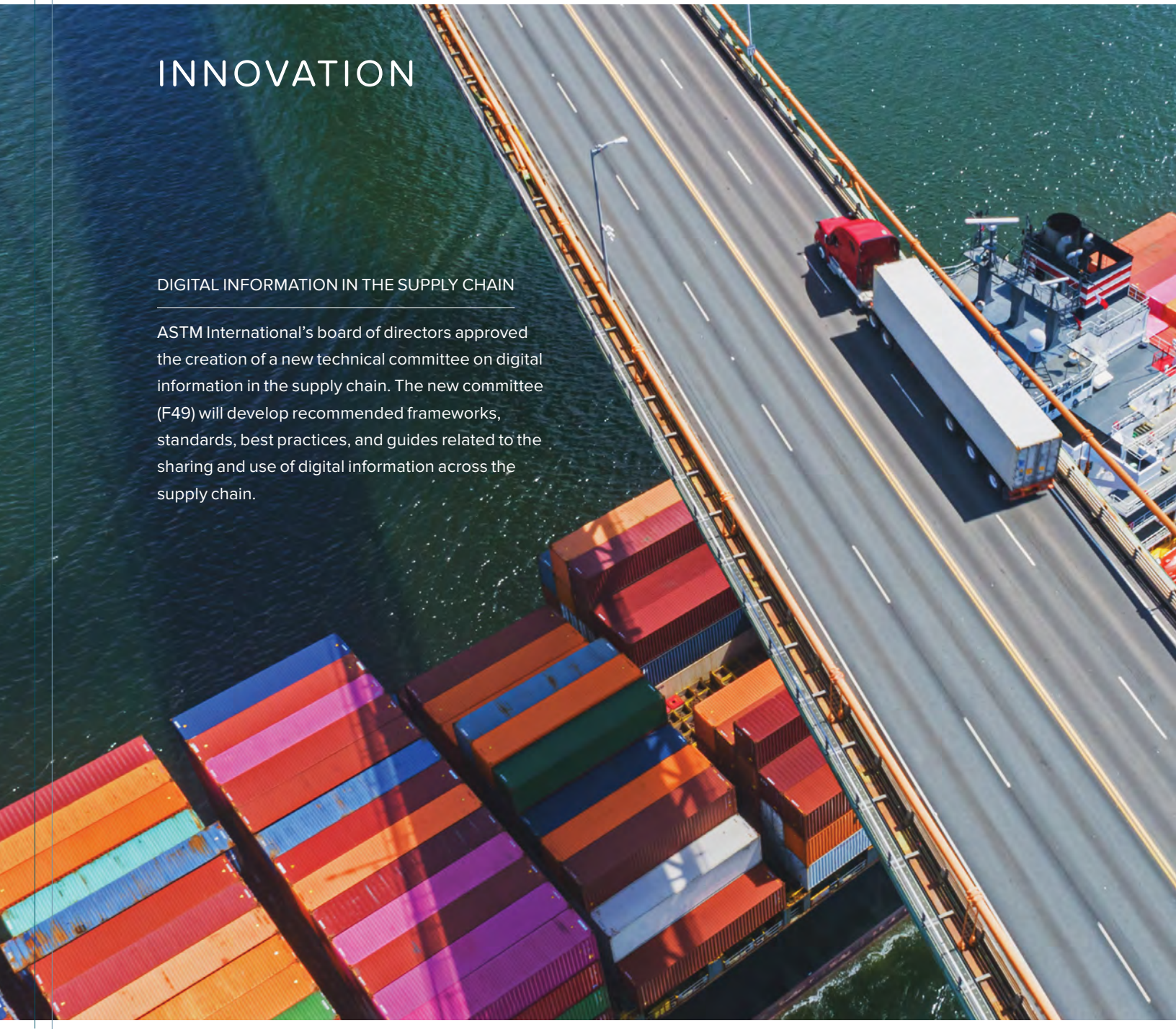
ASTM International's committee on robotics, automation, and autonomous systems (F45) formed a new subcommittee on grasping and manipulation. This new subcommittee (F45.05) will develop standards that evaluate performance in several major areas of robotic manipulation. The first three task groups of the committee will develop standards for performance of grasping type end-effectors, mobile manipulators, and robotic assembly systems, covering their use in both fixed and mobile base systems.

POWDER BED FUSION IN MEDICAL DEVICE MANUFACTURING

The additive manufacturing technologies committee (F42) also developed a new ASTM International standard that provides guidance to medical device manufacturers on the use of powder reuse in powder bed fusion manufacturing processes.



INNOVATION



DIGITAL INFORMATION IN THE SUPPLY CHAIN

ASTM International's board of directors approved the creation of a new technical committee on digital information in the supply chain. The new committee (F49) will develop recommended frameworks, standards, best practices, and guides related to the sharing and use of digital information across the supply chain.

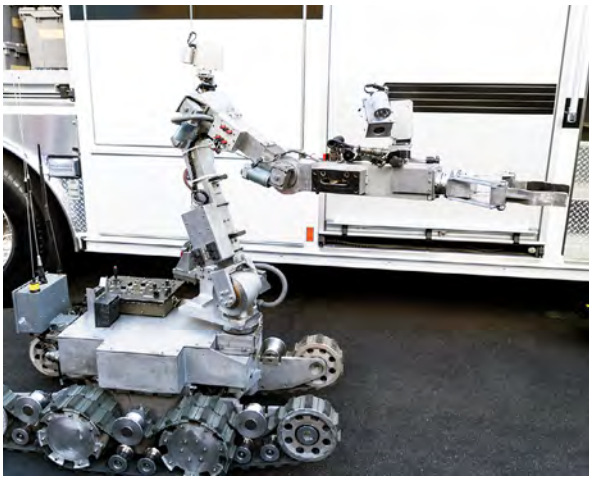
SEVEN NEW ADDITIVE MANUFACTURING PROJECTS

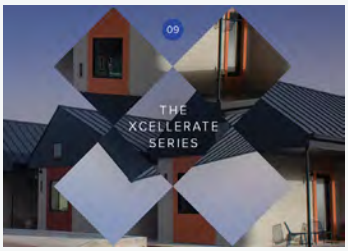
ASTM International announced its new slate of funded Research to Standards (R2S) projects that support ASTM's Additive Manufacturing Center of Excellence (AM CoE) and its mission to advance acceleration of AM standardization and industrial adoption.

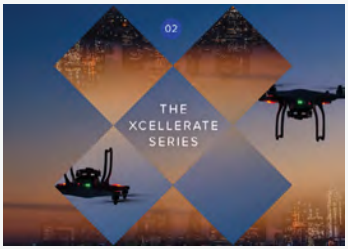
Two project calls were completed in 2021, the Request for Ideas (RFI) and the Call for Projects (CFP). These investments mark ASTM's fourth year of funded AM research projects and include additional in-kind contributions.

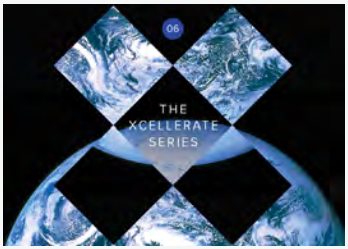
UNMANNED GROUND VEHICLES

A new ASTM standard will provide specifications for objects used in testing automatic, automated, or autonomous unmanned ground vehicles (A-UGVs). The standard, developed by ASTM's committee on robotics, automation, and autonomous systems (F45), will help both developers of A-UGVs and those looking to use them with evaluating their systems.







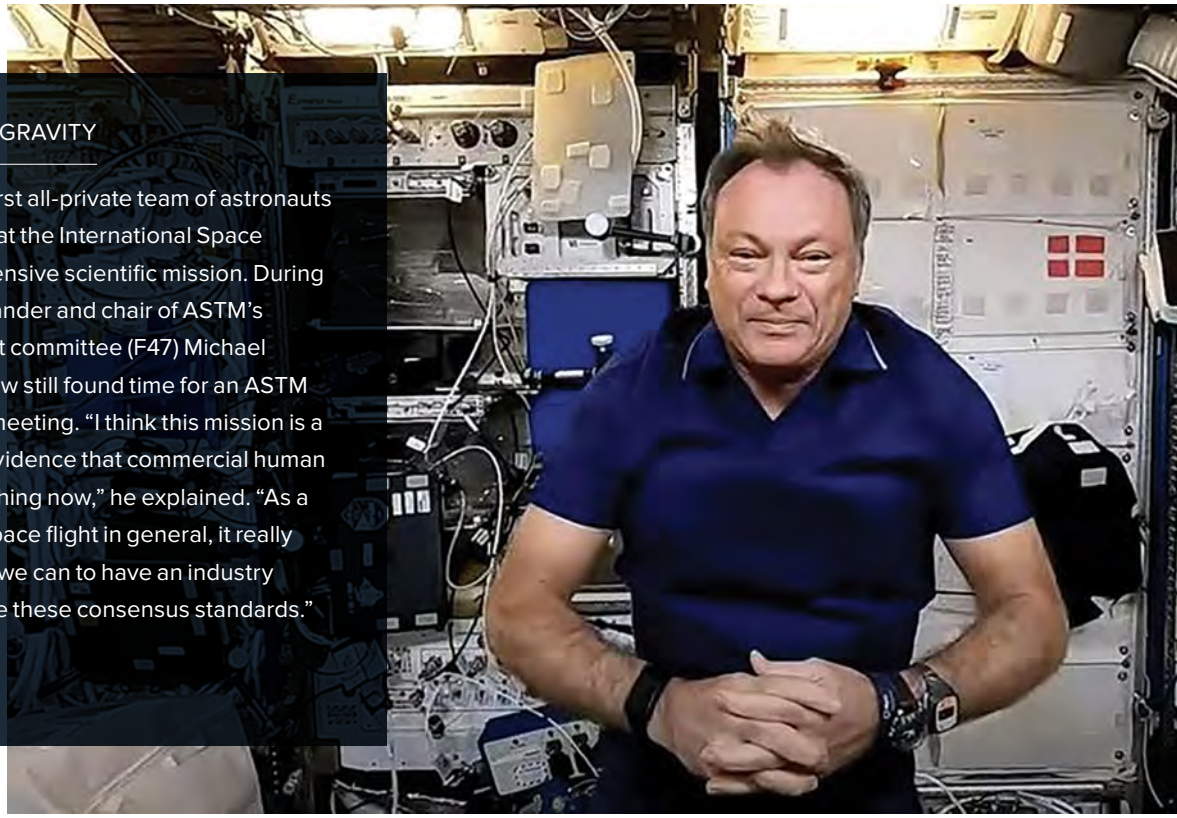


XCELLERATE™ PROGRAM FOR EMERGING TECHNOLOGIES

ASTM International launched ASTM Xcellerate™, an emerging technology program focused on strengthening the world's emerging technology from research to standards. The program builds on ASTM's globally recognized standards development process to provide the speed and agility new technologies need to survive and thrive. Intending to accelerate progress across all emerging technologies, ASTM Xcellerate has a scope focused on empowering broader global collaboration, accelerating commercialization and reducing costs by supporting key R&D, avoiding duplication of work, minimizing wasted resources, and bridging the gap between research and full-scale operation.

ASTM XCELLERATE™

AVIATION



STANDARDS IN ZERO GRAVITY

On April 9, 2022, the first all-private team of astronauts ever launched arrived at the International Space Station (ISS) for an extensive scientific mission. During their stay, flight commander and chair of ASTM's commercial spaceflight committee (F47) Michael López-Alegría somehow still found time for an ASTM executive committee meeting. "I think this mission is a pretty good piece of evidence that commercial human space flight is really a thing now," he explained. "As a piece of commercial space flight in general, it really begs for us to do what we can to have an industry collaborate to generate these consensus standards."

COMMERCIAL SPACEFLIGHT SAFETY EVENTS

ASTM's commercial spaceflight committee (F47) has approved a new standard that will help to enhance commercial spaceflight safety. The standard provides guidance to space flight operators on classifying safety-related events.

VERTIPORT DESIGN AND DEVELOPMENT

A new ASTM standard supports the design of civil vertiports and vertistops. The standard is the result of a five-year effort by ASTM's unmanned aircraft systems committee (F38).

TRAFFIC MANAGEMENT REQUIREMENTS FOR DRONES

A new ASTM standard will be used to satisfy requirements that are expected to be common for traffic management of uncrewed aircraft systems (UAS), commonly referred to as drones. The flight operations subcommittee of ASTM's unmanned aircraft committee (F38) developed the new standard with input garnered across multiple continents and a diverse group of industry contributors.

UNMANNED AIRCRAFT DESIGN

ASTM's unmanned aircraft systems committee (F38) approved a new standard that will provide a framework to certify large, uncrewed aircraft systems to be operated alongside traditional aircraft in the national airspace system.

CONSUMER AND PUBLIC SAFETY

WAKEBOARD THREADS

A new standard from ASTM's snow and water sports committee (F27) addresses size and position of thread inserts for wakeboards. The standard will ensure that the size and position of threaded inserts are uniform across manufacturers.

ADULT PRODUCTS

ASTM's consumer products committee (F15) has approved a new subcommittee (F15.82) to develop standards for adult sexual products. The subcommittee will begin its work by developing a consumer safety specification for such products.

GEOLOGICAL FORENSIC EVIDENCE

ASTM International's forensic sciences committee (E30) developed a new standard that will be used by forensic experts to determine the minerals within geological material.

PET PRODUCT SAFETY

The consumer products committee (F15) also formed a new group to create and maintain standards for pet products. The new subcommittee (F15.05) will develop the first international standards for certain common pet products, establishing best practice design safety and helping companies be more consistent in their messaging.

TABLE SAW SAFETY

A new standard covering table saw safety has been developed by ASTM's occupational health and safety committee (E34). The standard addresses a gap in standards, which address design safety of table saws but don't directly address the end users. The new standard guide includes topics beyond design-related safety, including installation, setup, operation, and maintenance.

CHEMICAL SUBSTANCES IN CONSUMER PRODUCTS

A new subcommittee will develop standards on per- and polyfluoroalkyl substances (PFAS) that are present in consumer products. PFAS are a group of chemicals that are used to make fluoropolymer coatings and products that resist heat, oil, stains, grease and water.

The new subcommittee on per- and polyfluoroalkyl substances (F15.81) will operate under the jurisdiction of ASTM's consumer products committee (F15).

GLOBAL CONNECTIONS

MOU PROGRAM GROWS TO 122

In 2022, ASTM's Memorandum of Understanding (MoU) program continued to grow as MoUs were signed with national standards bodies in Argentina and Sudan. As a result of these agreements and global participation across technical committees, ASTM standards have been cited nearly 9,000 times worldwide. The MoU program supports the use of ASTM standards while also encouraging global participation in developing and revising standards.

- **NEW MOUs**
  Argentina and Sudan
- **VISITING EXPERTS**
  Barbados, Ethiopia, Philippines
- **TECHNICAL VISITOR**
  Saudi Arabia

MEMORANDUM OF COOPERATION WITH KOREA INSTITUTE OF AVIATION SAFETY TECHNOLOGY

ASTM International and the Korea Institute of Aviation Safety Technology (KIAST) signed a memorandum of cooperation (MoC) aimed at supporting global unmanned aircraft systems (UAS) and urban air mobility (UAM). An objective of the MoC is to pursue safe and reliable UAS and UAM technologies through awareness and education activities including workshops, training events, and conferences.

IN-PERSON CAPACITY BUILDING UNIQUE TO MOU PARTNERS

ASTM offers special capacity-building programs for its MoU partners. Two such programs include the Standards Expert Program (SEP) and Technical Visitors Grant Program (TVGP). Standards experts from Barbados, Ethiopia, and the Philippines continued their training in 2022, learning about ASTM processes and resources. Information gained strengthened the partnerships between ASTM and the experts' respective home national standards bodies.

The TVGP supports selected technical experts from MoU partner nations to study ASTM standards in a specific sector. Two experts from the Standards, Metrology and Quality Organization (SASO) of Saudi Arabia were selected to take part in the program in 2022. The Saudi candidates studied the topics of amusement rides in conjunction with "ASTM's amusement rides and devices committee (F24) and fire safety in conjunction with ASTM's fire standards committee (E05).

ASTM AND CEN EXTEND AND EXPAND COOPERATION AGREEMENT

The European Committee for Standardization (CEN) and ASTM International extended and expanded a 2019 Technical Cooperation Agreement to broaden and facilitate global dialogue and coordination in specific areas of mutual interest. The extended agreement covers topics such as recovered carbon black, recycled plastics, and petroleum products, liquid fuels, and lubricants, among others.

ASTM PARTNERS SHARE PPE KNOWLEDGE IN VIET NAM

ASTM hosted 10 webinars on ASTM procedures in addition to technical topics on barrier face coverings that were held in partnership with the International Finance Corporation and MoU partners in Viet Nam and Jordan. Dozens of participants from MoU partners across the globe participated in each program to gain insight on engaging in ASTM and improving technical knowledge related to PPE topics.

ASTM GRANTED GUEST STATUS ON APEC SUBCOMMITTEE

ASTM International has been granted a three-year guest status within the Asia-Pacific Economic Cooperation (APEC) subcommittee on standards and conformance (SCSC). The SCSC was established to help reduce negative effects that differing standards and conformance agreements have on trade and investment in the Asia-Pacific region. ASTM and APEC have collaborated successfully for over a decade.

VIRTUAL TRAINING SESSIONS

ASTM provided 58 procedural and technical capacity-building sessions on diverse topics ranging from an introduction to ASTM and the Memorandum of Understanding (MoU) program and membership and stakeholder engagement to playground surfaces and eliminating lead paint. Over 3,180 units of participation from 109 nations attended the no-cost webinars designed to improve international expert engagement and broaden the understanding and application of ASTM standards globally. While ASTM conducts several of these programs independently, an increasing number of the capacity-building sessions are held in partnership with organizations such as the United Nations, World Bank, and USAID, which share ASTM's objectives for improving health and safety, consumer confidence and the overall quality of life.

58 SESSIONS

109 NATIONS

3,180+ UNITS OF PARTICIPATION

REGIONAL WEBINARS ON LEAD PAINT TESTING

ASTM hosted regional webinars focused on Africa and Latin America/the Caribbean on standard methods for testing for lead in paint. The webinars, co-sponsored by the United Nations Environment Programme (UNEP) and the U.S. Environmental Protection Agency (EPA), were part of a collaboration with the Global Alliance to Eliminate Lead Paint, jointly led by UNEP and the World Health Organization (WHO).

NEXT GENERATION & AWARDS

GRADUATE SCHOLARSHIPS

ASTM International boasts more than 5,000 student members and offers several scholarships and grant opportunities each year. In 2022, four $10,000 scholarships were awarded to the following deserving students.

Sarah Boardman is a participating member of ASTM International since 2022, pursuing her Ph.D. in materials science at the Colorado School of Mines. Her research and work focus on additive manufacturing of ceramic materials, and she hopes to contribute to ASTM standards development in her burgeoning field.

Kennedy Brown is a student member working towards her master's degree in civil and environmental engineering at the University of Vermont. A former WISE Scholar, she plans to pursue a career in water and wastewater engineering in the near future. She also hopes to join several ASTM committees after graduation.

Menachem Sokolic is a member of ASTM International since 2017, pursuing his master's degree in business administration at Rutgers University. He has worked as an environmental consultant for over two decades, and is a dedicated member of ASTM committee E50 on environmental assessment, risk management, and corrective action.

Diana Wyman is pursuing her Ph.D. in fiber and polymer science at North Carolina State University. She joined ASTM International in 2001 and has since been an active contributor to committee D13 on textiles, recently joining committee F23 as well. She is also an instructor for textile-related standards at ASTM.

EMERGING PROFESSIONALS

The Emerging Professionals program now boasts 260 EP graduates, 24 workshops, 358 work items registered by EP's, 121 leadership positions filled by EP graduates, 100 committees represented (68% of ASTM TC's), 40 awards given to EP graduates, and 29 ILS programs registered to EP graduates. Lindsey Hamill became the first graduate of the EP program to move on from COTCO to the BOD. 7 student members and 3 MOU members were hosted through the program.

358 WORK ITEMS

121 LEADERSHIP POSITIONS

100 COMMITTEES REPRESENTED

24 WORKSHOPS

STUDENT CHAPTER

ASTM launched a new student chapter at UClan, the University of Central Lancashire, in Lancashire, UK. This student chapter will focus on the exo technology industry. Chapter advisor Matthew Dickinson serves as member secretary of ASTM exoskeletons and exosuits committee (F48).

2022 AWARD OF MERIT RECIPIENTS

The prestigious Award of Merit, which includes the accompanying title of fellow, is ASTM's highest recognition for individual contributions to developing standards.

Kendra Adams
Soil and Rock (D18)

F. Joseph Albright
Fatigue and Fracture (E08)

Charles W. Alt
Concrete and Concrete Aggregates (C09)

Kathleen A. Baxter
Pesticides, Antimicrobials, and Alternative Control Agents (E35)

Ata Ciechanowski
Plastic Piping Systems (F17)

Bradley K. Finley
Corrosion of Metals (G01)

Tripp Fischer
Environmental Assessment, Risk Management and Corrective Action (E50)

Martin Harper
Air Quality (D22)

David Johnston
Sustainability (E60)

Jay W. Keating
Roofing and Waterproofing (D08)

Melissa B. Medlin
Geosynthetics (D35)

Ryan Pelter
Steel, Stainless Steel and Related Alloys (A01)

Zoltan Rado
Vehicle-Pavement Systems (E17)

David W. Rosen
Additive Manufacturing Technologies (F42)

Dawn Root
Plastics (D20)

Stephen Spiegelberg
Medical and Surgical Materials and Devices (F04)

Mary Stroup-Gardiner
Road and Paving Materials (D04)

Paul P. Wells
Petroleum Products, Liquid Fuels, and Lubricants (D02)

JAMES A. THOMAS PRESIDENT'S LEADERSHIP AWARD

This award recognizes individuals early in their ASTM International career who have advanced the organization's mission through extraordinary accomplishment, example, and vision.

Brian Grochal is director of product safety and quality at BARK and member of ASTM's consumer products committee (F15).

John Rosengard is president at Environmental Risk Communications, Inc. and member of ASTM's environmental risk management committee (E50).

PROFESSOR OF THE YEAR AWARD

The ASTM International Professor of the Year Award is presented annually to recognize and reward the contributions of educators in developing students' understanding of consensus standards.

Phalguni Mukhopadhyaya, Ph.D., is professor of building envelopes and structures at the University of Victoria, Canada. A member of ASTM International since 2000, he has robustly contributed to the thermal insulation committee (C16), the sustainability committee (E60) and the committee on performance of buildings (E06).

CULTURE AND COMMUNITY

ASTM DISASTER RELIEF DONATIONS

ASTM International contributed $25,000 to World Central Kitchen (WCK) in support of their efforts to feed refugees of the Ukrainian crisis. Founded in 2010 by Jose Andres, the goal of WCK is to provide meals in response to humanitarian, climate, and community crises while working to build resilient food systems with locally-led solutions.

ASTM donated $20,000 to Americares for relief efforts in the wake of Hurricane Ian.

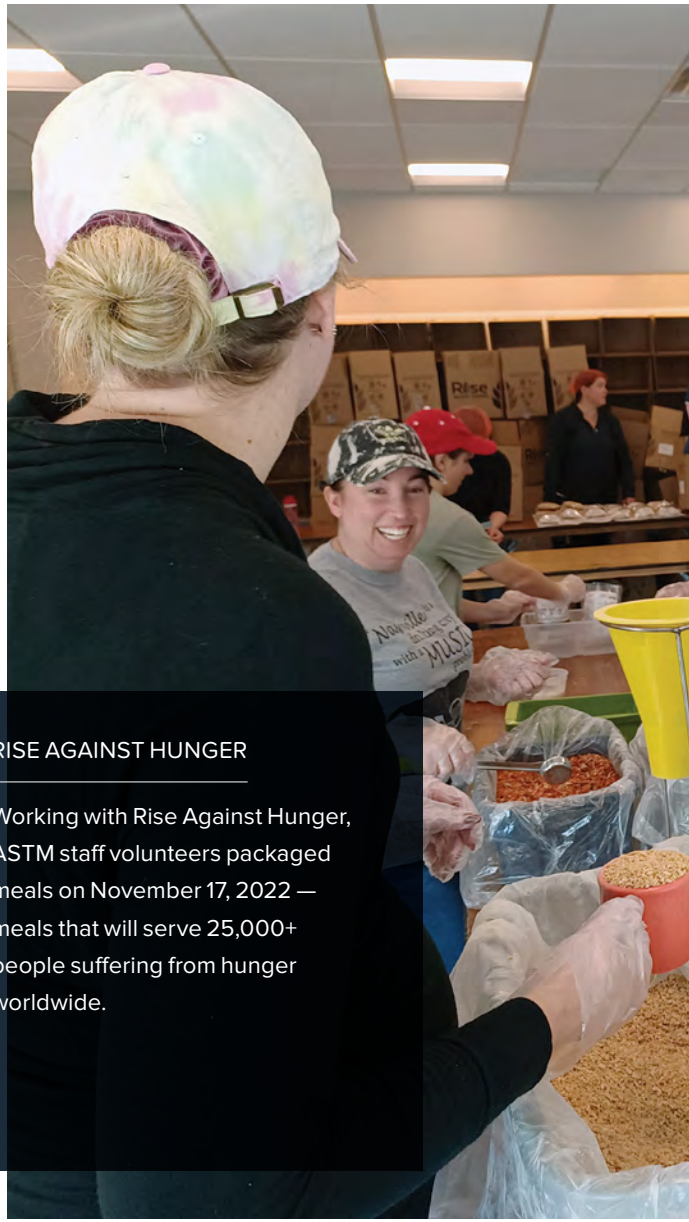
In addition, ASTM contributed $10,000 for the Kids in Danger Design Safety Toolkit.

COMMUNITY OUTREACH AND STAFF-DRIVEN PHILANTHROPY

ASTM's community outreach continued in 2022 with support to a variety of local and regional organizations including the Riverbend Environmental Education Center, the Conshohocken Free Library, For Pete's Sake Cancer Respite, iPraxis, and more.

In 2022, ASTM's staff-driven philanthropy support a number of charitable organizations, including the Special Olympics, Philabundance, and the American Diabetes Association, among others.

On November 17, approximately 50 members held a staff event to benefit Rise Against Hunger. The volunteers packaged meals that served more than 25,000 people suffering from hunger worldwide.



RISE AGAINST HUNGER

Working with Rise Against Hunger, ASTM staff volunteers packaged meals on November 17, 2022 — meals that will serve 25,000+ people suffering from hunger worldwide.

DIVERSITY, EQUITY, INCLUSION, AND BELONGING (DEIB)

Every voice is unique, so every voice matters.

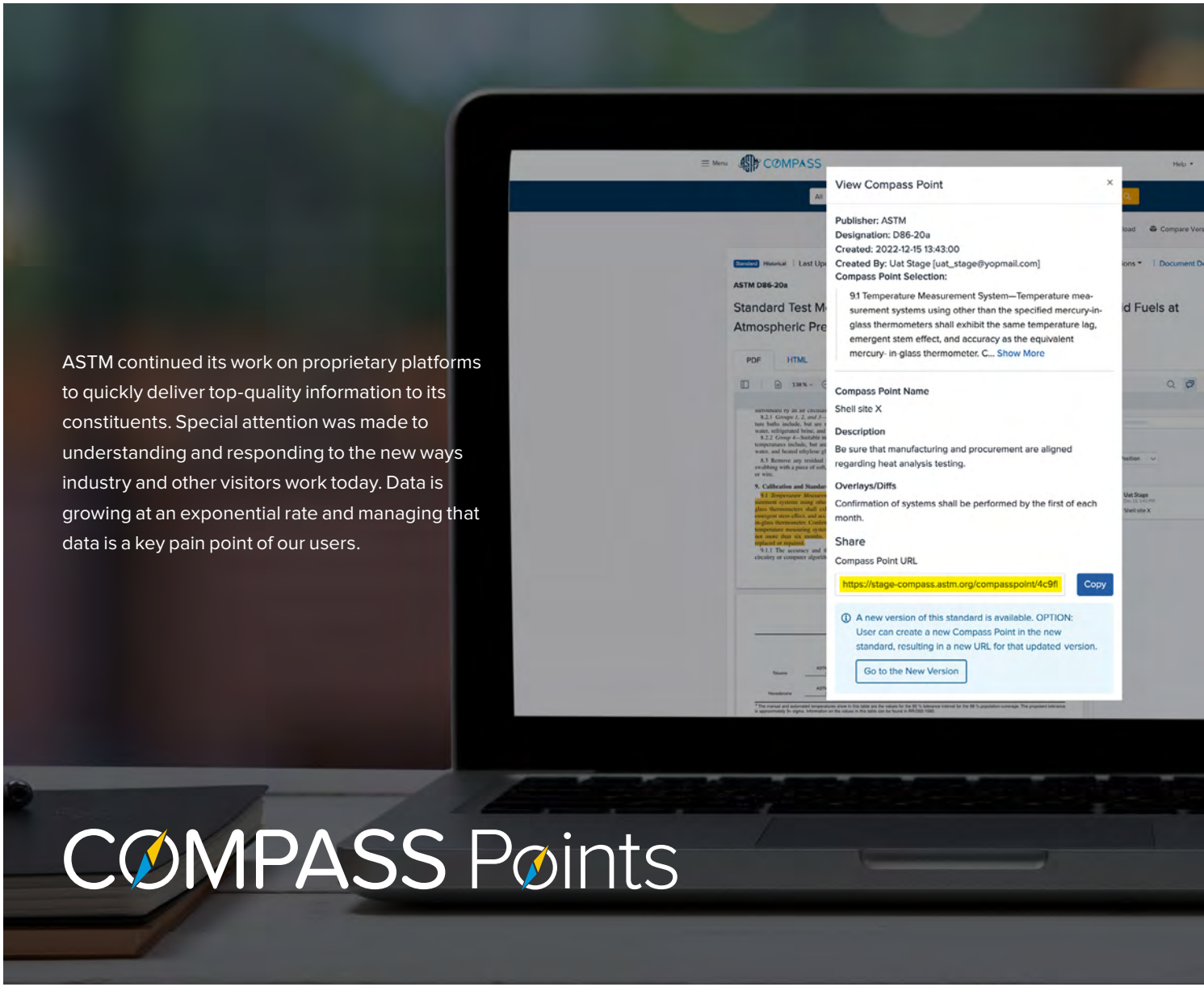
ASTM International is committed to diversity, equity, and inclusion efforts within our offices, across our governance structure, and throughout our global communities. We value every voice, bringing together people from various backgrounds, cultures, experiences, and gender identities. This commitment makes our work more impactful and enables us to more effectively fulfill our mission to serve global societal needs and helps our world work better. We take seriously the responsibility to develop initiatives that lift all voices. This is a journey, and each day we strive to further our progress and promote a diverse and inclusive environment for our staff, our members, and the world around us.

Our Journey So Far

In 2022, ASTM's DEIB Program continued to support a variety of activities and programs across the organization for our global staff and members.

- The DEIB Ambassador program met monthly to create and advocate for programs and educational initiatives. Notable activities included; development of an educational roadmap for staff, creating guidance for the optional use of pronouns in email signatures, and launching Employee Community Groups (ECGs).
- Development of a resource tool kit for members on Standards Development Organization (SDO) activities supporting DEIB; including the creation of a new ASTM Officer Training Workshop course on Inclusive Practices for Member Onboarding and Promotion.
- Launch of ASTM Departmental lunch-and-learns to create a deeper understanding of how our programs support ASTM goals of creating an inclusive environment for users and members of our products, systems, and services.

PRODUCTS AND SERVICES



ASTM continued its work on proprietary platforms to quickly deliver top-quality information to its constituents. Special attention was made to understanding and responding to the new ways industry and other visitors work today. Data is growing at an exponential rate and managing that data is a key pain point of our users.

COMPASS Points

COMPASS POINTS

ASTM has launched the newest feature of ASTM Compass® "Compass Points." This new feature gives users the ability to pinpoint any portion of a standard, add critical insights via a notation, and create a url to share a Compass Point with others inside and outside of their organization. With these Compass Points, users will always have a digital trail directly leading to the original content in the standard as well as their notations. This ensures institutional knowledge is documented, updated, and passed on without losing the context of the original content their notation relates to.

This is a groundbreaking improvement to data management. Instead of copying and pasting portions of standards and possibly losing the context and connection to the original content, ASTM now provides a trail to that original data. This ensures a permanent connection to the original data and enables organizations to maintain a historical understanding of the reasons for variations in their organization's procedures, processes and more.

This is just the beginning of ASTMs journey toward improving the management of digital content. Users can currently see a list of all their Compass Points, download, and share them. Based on feedback from customers, ASTM will be expanding Compass Points to include other features such as alerts to changes, enhanced sharing capabilities, and more.

ASTM COMPASS

As industry manages the challenges of a hybrid workforce, ASTM has also responded with other improvements to digital access. ASTM added more functionality for working with PDFs and added availability to EN ratified text to help subscribers see EN changes and adjust workflows accordingly in advance of changes in process.

Key work included:

- Continual Search and Discovery improvement.
- Significant work to help users better capture and follow data within standards for multiple purposes.
- Updates were made to the connections to the rest of the ASTM Community

PROFICIENCY TESTING PROGRAMS

More than 50 Proficiency Testing Programs (PTP) helped labs evaluate, improve, and document their performance in conducting test methods (in areas like petroleum, plastics, and metals) when compared with other labs. More than 2,800 laboratories worldwide are involved in these statistical quality assurance programs, which helped labs meet quality and accreditation requirements. ASTM International is accredited to ISO 17043 for its PTP and maintained its accreditation during 2022 by passing the review audit. The PTP ISO accreditation is valid until 2025.

PRODUCTS AND SERVICES

BOOKS AND JOURNALS

ASTM International's books and journals program continued to expand with contributions from international authors. Manuals, Monographs, Data Series, Selected Technical Papers, and Technical Reports continued to grow and advance science and technology. ASTM's five active journals are published on the ASTM website and in Compass for quick dissemination and are included in prestigious indexes for ease of discovery.

NEW IN 2022

Rolling Bearing Steel: Design, Technology, Testing, and Measurements, with 20 chapters and a nomenclature appendix.
By John M. Beswick

Supplement to Corrosion Tests and Standards: Application and Interpretation, Second Edition, that includes 29 new and revised chapters from the second edition.
Edited by Edward L. Hibner, Harvey P. Hack, and John R. Scully

TWO ASTM JOURNALS RECEIVE INCREASED IMPACT FACTOR RATING

ASTM's *Geotechnical Testing Journal* received an increased 2021 impact factor rating of 1.82, up nearly 23% from the previous year. In addition, the *Journal of Testing and Evaluation,* the organization's flagship journal, received an increased 2021 impact factor rating of 1.333, up 5.5% from the previous year.

The impact factor is calculated each year by Clarivate Analytics and given to journals that appear in their database, Science Citation Index.

JOURNAL SPECIAL ISSUES

Materials Performance and Characterization (MPC) published a Special Issue on Mechanical Characterization of Small Scale Specimens in the journal. The issue showcased the diversity and innovative nature of the research that is currently developing across the world on a broad scope of materials and applications in the ever expanding field of small scale specimens.

Advances in Civil Engineering Materials (ACEM) published a Special Issue on Reactivity Tests for Cement-Based Materials—From Lab Testing to Standards and Specifications. This Special Issue primarily focused on measuring supplementary cementitious materials (SCMs) reactivity and the link between reactivity and property development in cement-SCM pastes, mortars, and concrete.

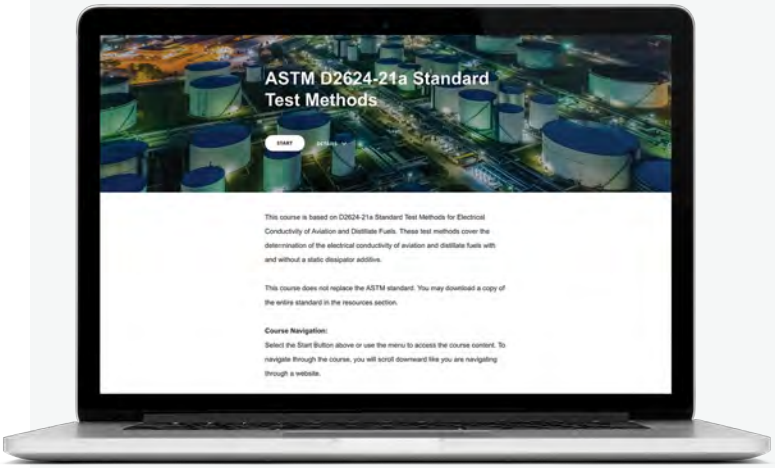
PRODUCTS AND SERVICES

ASTM SPECBUILDER AND MEMBER COLLABORATION TOOLS

ASTM SpecBuilder and the ASTM Member Collaboration area continued to grow as better resources to build consensus standards and specifications. In 2022, focus was placed on deeper conversations with members and other SDOs to better plan responsive delivery. Significant work was made to assist with scheduling and ballot reporting, plus the addition of other voter roles. Additional reporting and interface flexibility was enhanced. SpecBuilder Link was enhanced to make it even easier for organizations to efficiently and securely update their volunteers who are participating in collaborative efforts via different Customer Relationship Management (CRM) system brands, supporting our Integrated Services program.

TECHNICAL REPORTS

Since launching the new Technical Reports product line in 2018, six TRs have been published, three of which are ISO/ASTM TRs with more in production.



LIVE TRAINING & ONDEMAND SOLUTIONS

ASTM's Live Training and OnDemand Solution's Department provides live training (classroom, and virtual) and OnDemand continuing education courses on ASTM standards and related topics. The training services provide self-guided and instructor-led courses for internal, continuous, and up-to-date training for customers.

A total of 78 on-demand courses in petroleum, construction, cannabis, and environmental were launched in 2022. These include test method courses, programs, microlearning, and content translated in Spanish and Portuguese.

There are now nearly 600 eLearning courses available, the majority of which include demonstration videos, 2D/3D animation, simulations, procedural outlines, data sheets, glossaries of terms and assessments.

SYMPOSIA AND WORKSHOPS

In 2022, two conferences, eight symposia and 13 workshops took place. They were held using a mix of methods which were in-person only, all virtual, and a hybrid of in-person and virtual. Event topics included asbestos, bearing steels, building science, cannabis, multiaxial fatigue and fracture, pesticides, and zirconium in the nuclear industry. Eights issues of Selected Technical Papers (STP) and two special issues of our journals were published as a result of the symposia and conferences.

SEI

The Safety Equipment Institute (SEI) operates an independent program for testing and certifying thousands of innovative safety and protective products, from firefighter and baseball helmets to work boots and protective eyewear. SEI works with manufacturers as well as independent laboratories and quality-assurance auditors to certify products to performance standards for products used by consumers, fire and emergency services personnel, general industry workers, and law enforcement officers. The list of SEI-certified products continued to grow with the addition of new standards for recreational products and law enforcement.

CCRL

The Cement and Concrete Reference Laboratory (CCRL) program continued to improve construction materials testing through lab assessments, proficiency testing samples, instruction, guidance, and clarification of standards. CCRL's Laboratory Inspection Program provides evidence of a laboratory's ability to perform test methods. The overall program has grown to include approximately 1,630 labs in concrete, concrete aggregates, steel reinforcing bars, cement, pozzolan, slag cement, and masonry products. CCRL's Proficiency Sample Program helped laboratories compare their results with other labs by testing samples of the same material. This program ships approximately 13,000 boxes (255 tons) to more than 1,800 laboratories worldwide.

TMC

The Test Monitoring Center (TMC) became an affiliate of ASTM International in 2021 and moved its operations from Carnegie Mellon University to a newly renovated building in Armstrong, PA. In addition, the TMC staff became staff of ASTM. The center provides worldwide calibration services for more than 45 ASTM test methods used to evaluate automotive lubricants. Reference oil distribution, test-stand calibration, and laboratory visits form the core of the center's mission under the automotive lubricants subcommittee of the petroleum products, liquid fuels, and lubricants committee (D02).

FINANCIALS

Consolidated Statements of Financial Position
(in thousands)

	December 31, 2022	December 31, 2021
ASSETS		
Cash and cash equivalents	$ 14,387	$ 17,160
Short term investments	11,073	14,028
Accounts receivable, less allowance for doubtful accounts of $250 in 2022 and $125 in 2021	5,751	5,619
Interest receivable	178	116
Royalties receivable	7,706	9,146
Investments:		
General investment fund	211,629	261,060
Other	7,891	9,462
Cash surrender of life insurance	37,099	21,980
Inventories	1,490	1,267
Property and equipment, net	73,131	94,149
Right-of-use assets	1,339	–
Prepaid pension asset	66,361	70,687
Other assets	6,957	6,552
	$ 444,992	$ 511,226
LIABILITIES		
Accounts payable and accrued liabilities	$ 9,485	$ 12,118
Deferred income	14,155	13,656
Postretirement benefit liability	3,581	4,748
Lease liabilities	1,349	–
Other liabilities	665	665
Total liabilities	29,235	31,187
NET ASSETS		
Without donor restrictions:		
Undesignated	241,321	312,714
Designated - general	170,336	163,399
	411,657	476,113
With donor restrictions	4,100	3,926
Total net assets	415,757	480,039
	$ 444,992	$ 511,226

Consolidated Statements of Activities (in thousands)

Years ended December 31, 2022 and 2021

	December 31, 2022	December 31, 2021
Changes in net assets without donor restrictions:		
Operating revenues:		
Publication sales	$ 71,656	$ 69,445
Laboratory services	24,438	25,389
Advanced manufacturing	2,572	1,285
Members' administrative fees	2,002	2,138
Investment return allocation	4,154	3,755
Symposium and other income	995	501
Contributions	274	222
Other	332	35
	106,423	102,770
Net assets released from restrictions	396	123
Total operating revenues	106,819	102,893
Operating expenses:		
Salaries and benefits	50,024	43,432
Consulting and contract services	12,870	15,543
Other society office expense	6,997	5,937
Depreciation	7,389	7,449
Building occupancy	1,151	1,174
Publications	7,156	6,693
Laboratory services	9,711	8,549
Awards, contracts and other expenses	396	123
Committee and symposium expenses	2,787	1,061
Advanced manufacturing	2,546	231
Total operating expenses	101,027	90,192
Excess of operating revenues over operating expenses	5,792	12,701
Other revenues and (expenses):		
Board meeting - outside headquarters expense	(331)	(25)
Legal, copyright and strategy	(511)	(41)
Asia strategy	(69)	(108)
Advanced manufacturing	(1,972)	(1,714)
ASTM 2.0 development	(23,596)	(10,391)
Other	197	1,091
Investment (loss) gain	(44,947)	28,725
Pension and postretirement benefit changes	981	18,861
Total other revenues and expenses	(70,248)	36,398
increase in net assets without donor restriction	(64,456)	49,099
Changes in net assets with donor restrictions:		
Interest and dividends	32	23
Contributions	439	155
Other	157	11
Investment loss	(58)	(10)
	570	179
Net assets released from restrictions	(396)	(123)
Increase in net assets with donor restrictions	174	56
Changes in net assets	(64,282)	49,155
Net assets at beginning of year	480,039	430,884
Net assets at end of year	$ 415,757	$ 480,039

2022 SNAPSHOT

170
New Standards

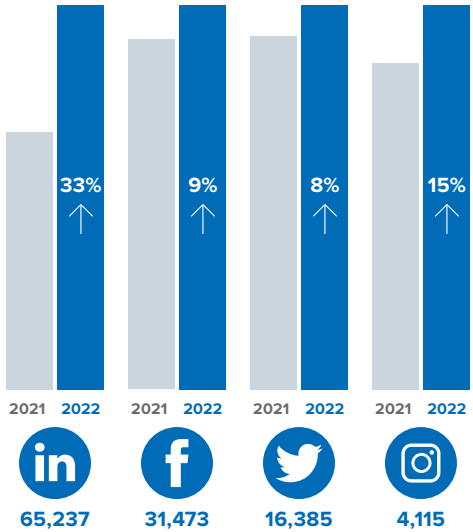
1,711
Revised Standards

12,955
Active Standards

32,000
Members Worldwide

2,000+
Technical Subcommittees

150
Technical Committees



COMMUNICATIONS

ASTM International reached thousands of members, customers, and others around the world via its communication vehicles, *Standardization News* in print and online, press releases, social media, eNews, video, and SmartBrief newsletter.

"New Concrete, New Standards" was the most popular new *Standardization News* article published in 2022, covering standards for cleaner and more technologically advanced forms of concrete. The magazine's online views grew 23% from 2021 to 2022.

ASTM INTERNATIONAL
Helping our world work better

ASTM INTERNATIONAL
Helping our world work better

Committed to serving global societal needs, ASTM International positively impacts public health and safety, consumer confidence, and overall quality of life. We integrate consensus standards – developed with our international membership of volunteer technical experts – and innovative services to improve lives...Helping our world work better.

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