ASME Additive Manufacturing for Nonmetallic Materials Applications

AMSC Feedstock Materials for Additive Manufacturing July 13, 2021

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What is ASME?



- Standards
- Certification
- Conformity Assessment
- Courses
- Conferences
- Publications
- ASME.org
- Education
- Membership
- Industry Events

ASME helps the global engineering community develop solutions to real-world challenges

ASME Standards & Certification

- Leading international developer of standards
 - Developing standards since 1880
 - Approximately 600 standards
 - Accepted for use in more than 100 countries
 - 70 Consensus Committees
 - 700 Total Committees
 - 5 Supervisory Boards
 - Close to 6,000 Volunteers (800 International and growing)
 - 12 Conformity Assessment Programs



ASME Additive Manufacturing Standards Activity

ASME Standards Ongoing Activity

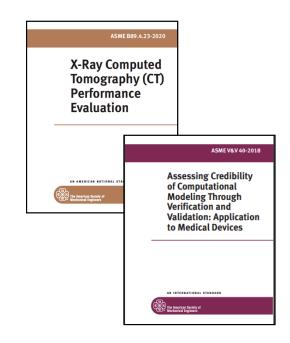
- -Y14.5 Dimensioning and Tolerancing
- -Y14.37 Product Definition for Composite Parts
- -Y14.41 Digital Product Definition Data Practices
- -Y14.46 Product Definition for Additive Manufacturing
- -Y14.47 Model Organization Practices
- -Y14.48 Universal Direction & Load Indicators



ASME Additive Manufacturing Standards Activity

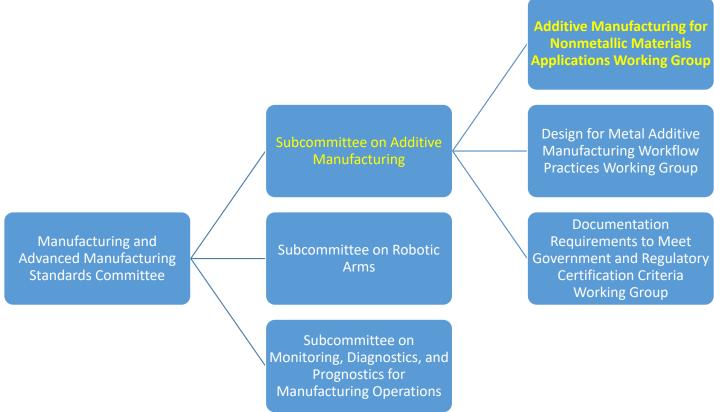
ASME Standards Ongoing Activity

- -B46 Surface Texture, Appendix B and K
- –B89.4.23 X-ray Computed Tomography (CT) Performance Evaluation
- –PTB-13 -2021 Criteria for PressureRetainingMetallic Components Using AM
- -BioPrinters
- -MBE Model Based Enterprise go.asme.org/mbereport
- VVUQ of Computational Models -Solids, Fluids, Credibility Assessment





Subcommittee on AM Committee Organization





Nonmetallic Materials Applications Working Group

- First meeting in April 2021 and have been meeting monthly to discuss potential opportunities-Next Meeting today July 13, 2021, 4-5:30 PM ET
 - Proposed project teams are currently forming.
 - Project teams meet during breakout sessions associated with the monthly meeting or via supplemental project team meetings.
 - Project teams are tasked to review existing literature and standards.
 - Current topics brought up by PTs: Feedstock material selection and qualification (biocompatibility), supply chain control, using material science to help engineer the part and replacement of metallic parts using nonmetallic materials.

ASME Council on Standards and Certification

Board on Standardization and Testing

A112 Plumbing Materials and Equipment

B1 Screw Threads

B107 Hand Tools and Accessories

B18 Bolts, Nuts, Rivets, Screws, Washers,

and Similar Fasteners

B29 Chains, Attachments, and Sprockets for Power Transmission and Conveying

B32 Metal and Metal Alloy Wrought Mill Product Nominal Sizes

B40 Pressure and Temperature Instruments and Accessories

B46 Classification and Designation of Surface Qualities

B47 Gage Blanks

B5 Machine Tools

B73 Chemical Standard Pumps

B89 Dimensional Metrology

EA Industrial System Energy Assessment

HST Hoists - Overhead

MAM Manufacturing and Advanced Manufacturing

MBE Model Based Enterprise

MFC Measurement of Fluid Flow in Closed Conduits

Performance Test Codes

RAP Power Plant Reliability, Availability, and Performance

H213 on Harmonization of Dimensional and Geometrical Product Specifications and Verification

STS Steel Stacks

V&V Verification and Validation in Computational Modeling and Simulation

Y14 Engineering Drawing and Related Documentation Practices

Board on Safety Codes and Standards

A120 Powered Platforms for Building

A13 Identification of Piping Systems

A17 Elevators and Escalators

A18 Platform Lifts and Stairway Chairlifts

A90 Manlifts

B20 Conveyors and Related Equipment

B30 Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

BTH Design of Below-the-Hook Lifting Devices

CSDAFB Controls and Safety Devices for Automatically Fired Boilers

Portable Automotive Lifting Devices

Rail Transit Vehicle

P30 Planning for Use of Cranes

Slewing Ring Bearings Standards Committee

TES Safety Standards Committee for Thermal Energy Storage Systems Board on Pressure Technology Codes and Standards

ASME/API Joint Fitness for Service

B16 Valves, Flanges, Fittings, and Gaskets

B31 Pressure Piping

BPE Bioprocessing Equipment

BPV Fiber-Reinforced Plastic Pressure Vessels

BPV Heating Boilers

BPV Materials

BPV Nondestructive Examination

BPV Overpressure Protection

BPV Power Boilers

BPV Pressure Vessels

BPV Pressure Relief Devices

BPV Transport Tanks

BPV Welding, Brazing & Fusing

Nonmetallic Pressure Piping Systems

Turbine Water Damage Prevention

Pressure Technology Post Construction

Pressure Vessels for Human Occupancy

Reinforced Thermoset Plastic Corrosion Resistant Equipment

Structures for Bulk Solids

Board on Nuclear Codes and Standards

BPV III Construction of Nuclear Facility

Components

BPV XI Nuclear Inservice Inspection

Operation and Maintenance of Nuclear

Power Plants

Cranes for Nuclear Facilities

Nuclear Air and Gas Treatment Equipment

Nuclear Quality Assurance

Nuclear Risk Management

Qualification of Mechanical Equipment

Used in Nuclear Facilities

Board on Conformity Assessment

Certification of Non-Destructive Examination Personnel & Quality Control Technicians

Qualification of Resource Recovery Facility Operators

Reinforced Thermoset Plastics Certification

Hearing and Appeals

Qualifications for Authorized Inspection

Boiler & Pressure Vessel Conformity Assessment

Conduct of Conformity Assessment Activities

Nuclear Certification

Conformity Assessment Requirements

Bioprocessing Equipment

Committee on Designees

Board on Council Operations

Board on Strategic Initiatives

Board on Hearing and Appeals **Energy and Environmental Standards Advisory Board**



American Society of Mechanical Engineers – Learn More and Contact Information

To learn more about ASME AM related Standards:

https://cstools.asme.org/csconnect/FileUpload.cfm?View=yes&ID=65268

Join a Committee:

https://www.asme.org/codes-standards/asmecode-committee/get-involved Contact Information:
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Thank you

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