ABOUT AMS7100-AMS7101

These documents define the generic technical requirements, quality assurance provisions, and documentation needed for fused filament fabrication to produce parts capable of service in aerospace, as well as the technical requirements, testing methodology, and quality assurance provisions needed for Fused Filament Fabrication (FFF) feedstock.

Specifically, AMS7100 standard will cover environmental controls, equipment configuration, software parameters, material controls, calibrations, and testing methodology.

It will define and discuss critical requirements, which have substantial effects on the print quality and final print part properties. No such document currently exists, and such a document is needed to maintain high quality fused filament fabrication produced parts.

AMS7100: Process Specification for Fused Filament Fabrication

AMS7101: Material For Fused Filament Fabrication

“Following the success and momentum of the SAE AMS-AM Metallic Materials committee, the swift efforts of the AMS-AM-P committee helped bring these groundbreaking, aerospace-grade AMS specifications to the global stakeholder community.”

DAVID ALEXANDER
Director, SAE Aerospace Standards Program

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SAE AMS-AM, Additive Manufacturing, is a technical committee in SAE’s Aerospace Materials Systems Group with the responsibility to develop and maintain aerospace material and process specifications and other SAE technical reports for additive manufacturing, including precursor material, additive processes, system requirements and post-build materials, pre-processing and postprocessing, non-destructive testing and quality assurance. They are focusing on key AM processes such as Laser and Electron Beam Powder Bed Fusion, but also expanding onto larger build envelope processes such as plasma, laser, and electron beam direct energy deposition. Other relevant AM processes include fused filament fabrication for polymer and binder jetting for both metals and non-metallics applications.

Over 350 global participants from more than 15 countries representing aircraft, spacecraft, and engine OEMs, material suppliers, operators, equipment/system suppliers, service providers, regulatory authorities, and defense agencies are active in the committee.

“Both additive manufacturing users and producers will benefit from implementing AMS-AM standards, these standards help define a consistent set of materials and process limits that both the user and producer agree to in support of part procurement activities. AMS-AM standards support the promotion of knowledge, standardization of practice and advancement of commerce in the emerging AM aerospace industry.”

PAUL JONAS, DIRECTOR
Technology Development & Programs at the National Institute for Aviation Research (NIAR) and AMS-AM-P Chair.

Additional Standards from AMS-AM Standards

AMS7000  Laser-Powder Bed Fusion (L-PBF) Produced Parts, Nickel Alloy, Corrosion and Heat-Resistant, 62Ni - 21.5Cr - 9.0Mo - 3.65Nb Stress Relieved, Hot Isostatic Pressed and Solution Annealed

AMS7001  Nickel Alloy, Corrosion and Heat-Resistant, Powder for Additive Manufacturing, 62Ni - 21.5Cr - 9.0Mo - 3.65Nb

AMS7002  Process Requirements for Production of Metal Powder Feedstock for Use in Additive Manufacturing of Aerospace Parts

AMS7003  Laser Powder Bed Fusion Process

AMS7004  Titanium Alloy Preforms from Plasma Arc Directed Energy Deposition Additive Manufacturing on Substrate, Ti-6Al-4V, Stress Relieved

AMS7005  Wire Fed Plasma Arc Directed Energy Deposition Additive Manufacturing Process

AMS7008  Nickel Alloy, Corrosion and Heat-Resistant, Powder for Additive Manufacturing, 47.5Ni - 22Cr - 1.5Co - 9.0Mo - 0.60W - 18.5Fe

AMS7013  Nickel Alloy, Corrosion and Heat-Resistant, Powder for Additive Manufacturing, 60Ni - 22Cr - 2.0Mo - 14W - 0.35Al - 0.03La

AMS7014  Titanium Alloy, High Temperature Applications, Powder for Additive Manufacturing, Ti - 6.0Al - 2.0Sn - 4.0Zr - 2.0Mo

JOIN THE COMMITTEE

Your participation would be a welcome addition to the Additive Manufacturing Committees. The SAE standards consensus process needs active participation from leaders and experts across the industry. If you are a professional in the mobility industry, we welcome your participation.

For more information, contact Jeff Adkins at jeff.adkins@sae.org

SAE International is a global association committed to being the ultimate knowledge source for the engineering profession. By uniting over 127,000 engineers and technical experts, we drive knowledge and expertise across a broad spectrum of industries. We act on two priorities: encouraging a lifetime of learning for mobility engineering professionals and setting the standards for industry engineering. We strive for a better world through the work of our charitable arm, the SAE Foundation, which helps fund programs like A World in Motion™ and the Collegiate Design Series™.