

STN	Aditívna výroba pre kozmonautiku Všeobecné princípy Klasifikácia častí na používanie v letectve vyrábaných aditívne (ISO 52967: 2024)	STN EN ISO/ASTM 52967 18 8551
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Additive manufacturing for aerospace - General principles - Part classifications for additive manufactured parts used in aviation (ISO/ASTM 52967:2024)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

Additive manufacturing for aerospace - General principles - Part classifications for additive manufactured parts used in aviation (ISO/ASTM 52967:2024)

Fabrication additive pour l'aérospatiale - Principes généraux - Classification de pièces pour les pièces produites par fabrication additive utilisées dans l'aviation (ISO/ASTM 52967:2024)

Additive Fertigung für Luftfahrt- und Raumfahrt - Allgemeine Grundsätze - Bauteil-Klassifizierungen für additiv gefertigte Bauteile in Luft- und Raumfahrt (ISO/ASTM 52967:2024)

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO/ASTM 52967:2025 (E)

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European foreword

The text of ISO/ASTM 52967:2024 has been prepared by Technical Committee ISO/TC 261 "Additive manufacturing" of the International Organization for Standardization (ISO) and has been taken over as EN ISO/ASTM 52967:2025 by Technical Committee CEN/TC 438 "Additive Manufacturing" the secretariat of which is held by AFNOR.

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The text of ISO/ASTM 52967:2024 has been approved by CEN as EN ISO/ASTM 52967:2025 without any modification.



International Standard

ISO/ASTM 52967

Additive manufacturing for aerospace — General principles — Part classifications for additive manufactured parts used in aviation

*Fabrication additive pour l'aérospatiale — Principes généraux —
Classification de pièces pour les pièces produites par fabrication
additive utilisées dans l'aviation*

**First edition
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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11

Email: copyright@iso.org
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ASTM International
100 Barr Harbor Drive, PO Box C700
West Conshohocken, PA 19428-2959, USA
Phone: +610 832 9634
Fax: +610 832 9635
Email: khooper@astm.org
Website: www.astm.org

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ISO/ASTM 52967:2024(en)**Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO/ASTM 52967:2024(en)**Introduction**

The use of additive manufacturing (AM) technology allows designs that may not be achieved with traditional manufacturing methods. It is important to understand the risk associated with the AM usage by understanding the consequence of failure (including the loss of intended function) of the usage. Such information can be beneficial in establishing consistent manufacturing, inspection, or qualification processes relative to a defined risk scale, which can serve as supporting data when seeking regulatory approval of an AM part. A part classification scheme based on a part's consequence of failure can provide a consistent risk metric. Without carefully defined part classes, the ability to accurately gauge the consequence of failure associated with additively manufactured aviation parts within and across programs, projects, and suppliers becomes exceedingly difficult, resulting in mitigations that are either not commensurate or inconsistent. The part classification scheme documented here does not affect a part's functional requirements, but rather is used to group additive manufacturing aviation parts into categories which can be used in downstream standards. For example, this classification scheme can be used in material and process specifications to determine the appropriate levels of process control, thermal post processing, qualification, and inspection to ensure AM parts meet their application requirements. This classification scheme does not specify how the classification is used in any downstream processes. The use of the classification shall be left to the cognizant engineering or production entities, or downstream documents which reference this standard.

Additive manufacturing for aerospace — General principles — Part classifications for additive manufactured parts used in aviation

1 Scope

1.1 This practice is intended to be used to assign part classifications across the aviation industries that use AM to produce parts.

1.2 This practice is applicable to all AM technologies defined in ISO/ASTM 52900 used in aviation.

1.3 This practice is intended to be used to establish a metric for AM parts in downstream documents.

1.4 This practice is not intended to establish criteria for any downstream processes, but rather to establish a metric that these processes can use.

1.5 The part classification metric could be utilized by the engineering, procurement, non-destructive inspection, testing, qualification, or certification processes used for AM aviation parts.

1.6 The classification scheme in this practice establishes a consistent methodology to define and communicate the consequence of failure associated with AM aviation parts.

1.7 This practice is not intended to supersede the requirements and definitions of the applicable regulations or policies, including but not limited to the ones listed in Annex A1.

[Tables A.1.1-A.1.3](#) align the existing regulations and guidance with the four part classes established herein. However, this alignment should not be construed as an alignment of the existing regulations to each other.

1.9 The material or process, or both, in general does not affect the consequence of failure of a part, therefore the classification scheme defined in this document may be used outside AM.

1.10 The user of this standard should not assume regulators' endorsement of this standard as accepted mean of compliance.

1.11 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.12 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

ISO/ASTM 52967:2024(en)**2 Referenced Documents****2.1 ISO/ASTM Standards:** ¹⁾

52900 Additive Manufacturing – General principles – Fundamentals and vocabulary

2.2 United States Department of Defense Standards: ²⁾

MIL-STD-882 Standard Practice System Safety

MIL-STD-1530 Aircraft Structural Integrity Program (ASIP)

MIL-STD-1798 Mechanical Equipment and Subsystems Integrity Program

2.3 NASA Standard: ³⁾

NASA-STD-6030 Additive Manufacturing Requirements for Spaceflight Systems

2.4 AWS Standard: ⁴⁾

AWS D20 Specification for Fabrication of Metal Components using Additive Manufacturing

2.5 AMS Standard: ⁵⁾

AMS2175 Castings, Classification and Inspection of

2.6 FAA Regulations and Guidance Materials:

AC43-18 Fabrication of Aircraft Parts by Maintenance Personnel⁶⁾⁷⁾

AC25.571 Damage Tolerance and Fatigue Evaluation of Structure⁷⁾

AC25.1309 System Design and Analysis⁷⁾

AC33.70-1 Guidance Material for Aircraft Engine Life-Limited Parts Requirements⁷⁾

AC33-8 Guidance for Parts Manufacturer Approval of Turbine Engine and Auxiliary Power Unit Parts under Test and Computation⁷⁾

14CFR27.602 Critical Part⁷⁾

14CFR33.75 Safety Analysis⁸⁾

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

1) This specification is under the jurisdiction of ASTM Committee F42 on Additive Manufacturing Technologies and is the direct responsibility of Subcommittee F42.07 on Applications. Current edition approved July 1, 2022. Published August 2022. DOI: 10.1520/F3572-22.

2) Available from DLA Document Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5094, <https://quicksearch.dla.mil>.

3) Available Online: <https://standards.nasa.gov/standard/nasa/nasa-std-6030>.

4) Available from American Welding Society (AWS), 8669 NW 36 St., #130, Miami, FL 33166-6672, <http://www.aws.org>.

5) Available from SAE International (SAE), 400 Commonwealth Dr., Warrendale, PA 15096, <http://www.sae.org>.

6) Available from Federal Aviation Administration (FAA), 800 Independence Ave., SW, Washington, DC 20591, https://www.faa.gov/regulations_policies/advisory_circulars/.

7) Available from Federal Aviation Administration (FAA), 800 Independence Ave., SW, Washington, DC 20591, https://www.faa.gov/regulations_policies/faa_regulations