

DIN

DIN Standards
Committee Aerospace





Aerospace standardization – Expertise and experience

The DIN Standards Committee Aerospace (NL) is the independent platform for standardization in the field of aerospace in Germany, in Europe and worldwide. We bring together industry, science, the public sector and civil society so that they can jointly define the current state of technology in a clear and practice-oriented, precise and unambiguous manner and open up future innovation fields at an early stage. In doing so, we bring together the experts active in the DIN Standards Committee Aerospace with those from other sectors on overarching topics such as climate change, the energy transition, the circular economy, hydrogen, digitization and artificial intelligence.

The standards which are drawn up and developed by the DIN Standards Committee Aerospace for the aerospace industry and beyond cover such areas as materials, technological processes, mechanical parts, flight mechanics and equipment, air cargo and ground equipment, airport infrastructure, electrical engineering and avionics, environmental protection and propulsion technologies, management, safety and quality systems, aircraft cabins and cargo systems, and unmanned aircraft systems (UAS). In open exchange formats such as the strategy group and innovation group, the current standardization program is regularly analysed and adapted, and future standardization needs are identified.

The DIN Standards Committee Aerospace organizes the national consensus of opinion and participation in all European and international

standardization projects in the field of aviation and aerospace. If requested by the German industry, the Committee also takes over the management of European and international standardization projects.

European standardization work in the field of aerospace is mainly carried out at ASD-STAN as an Associated Body (ASB) of CEN. At ASD-STAN, the DIN Standards Committee Aerospace is responsible for various areas and working groups. Furthermore, at the European level, the DIN Standards Committee Aerospace directly leads the Technical Committees CEN/TC 274 „Aircraft Ground Support Equipment“ and CEN/TC 377 „Air Traffic Management (ATM)“ at CEN. Within CEN/CLC/JTC 5 „Space“, which is a joint Technical Committee of CEN, CENELEC and ETSI, the DIN Standards Committee Aerospace coordinates the harmonization of the ongoing space activities of the European Cooperation for Space Standardization (ECSS) with the CEN and ISO standardization activities. In addition, the DIN Standards Committee Aerospace is involved in the work of CEN/TC 436 „Cabin Air Quality in Commercial Aircraft - Chemical Agents“.

International standardization work in the field of aerospace is carried out in ISO/TC 20 „Aircraft and space vehicles“. The DIN Standards Committee Aerospace leads the subcommittees ISO/TC 20/SC 4 „Aerospace fastener systems“ and ISO/TC 20/SC 10 „Aerospace fluid systems and components“ as well as several working groups.



NATIONAL

German Institute for Standardization

DIN Standards

Committee Aerospace



EUROPÄISCH

European Committee for Standardization

CEN/TC 274

Aircraft ground support equipment
Secretariat: Germany (DIN NL)

CEN/TC 377

Air Traffic Management
Secretariat: Germany (DIN NL)

CEN/TC 436

Project Committee – Cabin Air Quality on civil aircraft – Chemical Agents
Secretariat: France (AFNOR)

CEN/CLC/JTC 5

Space
Secretariat: Germany (DIN NL)

ASD-STAN

European standardization organisation for aerospace and defence



European Committee for Electrotechnical Standardization



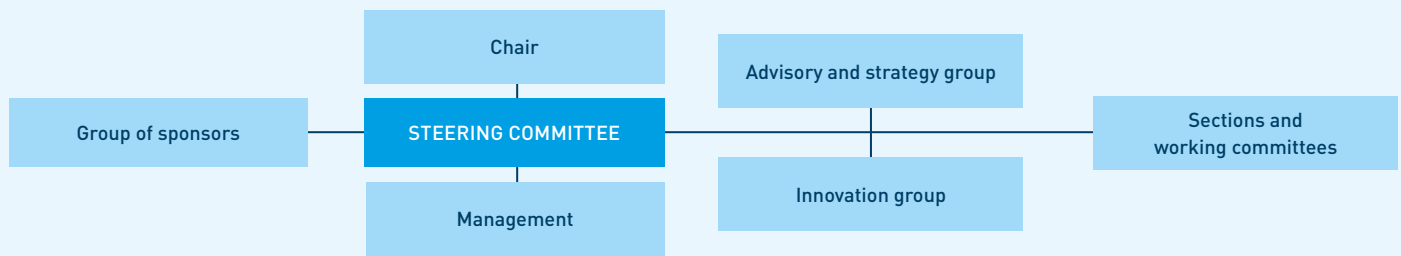
INTERNATIONAL

International Organization for Standardization

ISO/TC 20

Aircraft and space vehicles
Secretariat: USA (ANSI)

Standardization – it pays to take part



SECTION 1

Unmanned aircraft systems

NA 131-01 FBR	Steering Committee of the Section Unmanned Aircraft Systems
NA 131-01-01 AA	General
NA 131-01-02 AA	Technical Systems
NA 131-01-03 AA	Operations
NA 131-01-04 AA	UAS Traffic Management (UTM)
NA 131-01-05 AA	Drone-Detection

SECTION 2

Materials and methods

NA 131-02-01 AA	Composite material
NA 131-02-02 AA	Adhesives, core materials
NA 131-02-03 AA	Elastomeric bond/density bulk
NA 131-02-04 AA	Surface protection
NA 131-02-05 AA	Metallic materials

SECTION 3

Mechanics

NA 131-03 FBR	Steering Committee of the Section Mechanics
NA 131-03-01 AA	Aerospace fasteners
NA 131-03-02 AA	Fluidic systems and components
NA 131-03-03 AA	Components of mechanical systems

SECTION 4

Electrical, Avionics

NA 131-04 FBR	Steering Committee of the Section Electrical, Avionics
NA 131-04-01 AA	Electrical aircraft systems
NA 131-04-02 AA	Electrical cables
NA 131-04-03 AA	Electrical connectors
NA 131-04-05 AA	Switch, relays and protection devices
NA 131-04-06 AA	Lamps
NA 131-04-07 AA	Electric power supply
NA 131-04-08 AA	Harness components
NA 131-04-09 AA	Avionics
NA 131-04-10 AA	Fibre optic cables and components

SECTION 5

Security, quality and management processes

NA 131-05-01 AA	Quality and management processes
NA 131-05-02 AA	Air Traffic Management (ATM)
NA 131-05-03 AA	Basics and terminology

SECTION 6

Space and terrestrial applications

NA 131-06-01 AA	Space
NA 131-06-02 AA	Interoperability of information, communication and navigation systems

SECTION 7

Environment protection and engine technology

NA 131-07-01 AA	Environment protection, engine technology
NA 131-07-02 AA	Environment Protection, REACH

SECTION 8

Airports

NA 131-08-01 AA	Air freight and ground equipment
NA 131-08-02 AA	Airport infrastructure

SECTION 9

Cabin and Cargo

NA 131-09 FBR	Steering Committee of the Section Cabin and Cargo
NA 131-09-01 AA	Cabin monuments and supply systems
NA 131-09-02 AA	Seats, inflight entertainment
NA 131-09-03 AA	Interior lining, floorcovering and hatracks
NA 131-09-04 AA	Supply systems [air conditioning, air, water, waste water]
NA 131-09-05 AA	Displays, projection and lighting
NA 131-09-06 AA	Ideal Cabin Environment – ICE
NA 131-09-07 AA	Test procedure
NA 131-09-08 AA	Boarding Efficiency
NA 131-09-09 AA	Baggage and cargo space

COMMITTEES OUTSIDE THE NL

NA 145-04-02-02 GAK	Additive Manufacturing - Joint working group NWT/NL/NAS: Additive manufacturing in aerospace
NA 087-00-20 GA	Joint working committee FSF/NL/DKE: Hyperloop systems
NA 092-00-17 AA	Welding in aerospace [DVS AG A 9]



Standardization – using global opportunities

Principles of standardization

Standardization work is carried out at national, European and international level on the basis of 10 principles:

- Voluntary participation
- Publicity
- Broad participation
- Consensus
- Uniformity and consistency
- Technical relevance
- State of the art
- Market relevance
- Benefit for society
- International relevance

Stages involved in the preparation of standards

- Proposal for a new standard
- Working draft
- Manuscript for draft standard
- Draft standard
- Comments, objections
- Manuscript for standard
- Publication of the standard

Proposal for a new standard

Work on a specific standardization item requires a proposal for a new standard. Anyone may submit such a proposal to DIN.

Actuality of standards

All standards must undergo a review at least every 5 years to establish whether they still reflect the current state of the art. The standards will then be confirmed, revised or withdrawn.

Legal status of standards

First and foremost, standards are recommendations, and everyone is free to decide whether or not to follow these recommendations. Standards are legally binding only when referred to in legal provisions or when agreed on in contracts. They are, however, considered by courts, even without legal reference, as the basis for evaluation in terms of generally acknowledged rules of technology.

Aerospace standards work at national level

The technical work in the working committees of the DIN Standards Committee Aerospace is performed by experts from trade and industry, institutions and associations. In accordance with the guidelines for standards committees, anyone can participate in the DIN Standards Committee Aerospace working committees and comment on the published standards and draft standards.

Aerospace standards work at European/international level

European/international standards work is performed in the Technical Committees of CEN, ASD-STAN or ISO, respectively. The preparation at national level and the drafting of comments on European/international standardization results and of proposals for standards is done in the respective working committees for CEN, ISO and ASD-STAN. These working committees delegate experts to the technical committees (TC), subcommittees (SC) or working groups (WG) of CEN/TC 274, CEN/TC 377, 5, CEN/TC 436, CEN/CLC/JTC 5, ISO/TC 20 and ASD-STAN working groups in order to represent the concerted German opinion. ECSS is responsible for establishing upstream standards at the European level in close cooperation with CEN, CENELEC and ETSI.

Adoption of European/international standards

A European Standard (EN) must be announced in all member states of CEN at national level and be published or recognized as an identical national standard. Any conflicting national standards must be withdrawn. An International Standard (ISO) which has not been adopted as an EN ISO Standard by CEN can be adopted at national level as a DIN ISO Standard.



»» An essential task of the DIN Standards Committee Aerospace is the accelerated support of the industrial innovation process, taking into account scientific, technical, but also social developments. It is only in this way that standards can meet the current as well as future demands of users. The broad spectrum of topics of the DIN Standards Committee Aerospace ranges from digitalization and the use of artificial intelligence to future aircraft concepts and new traffic and transportation systems such as UAVs or Hyperloop systems. I am particularly pleased to see how many decisive impulses from the DIN Standards Committee Aerospace have influenced other projects. ◀◀

Dr. Rainer Casdorff , NL Chairperson

Great success through standardization

International standardization is becoming increasingly important to the aviation industry. Norms and standards describe the current state of the art, promote the quality and safety of products, eliminate trade barriers, and reduce costs.

International Standards play a major role in helping the global aerospace industry to implement growth strategies by enabling meaningful partnerships to be established within industrial co-operations at international level. Thanks to standards, partners can “speak the same language”.

Great challenges facing standardization

The development trends in the dynamic environment of the aerospace industry, which result from such factors as advancing digitization, new hygiene requirements and the transformation toward a climate-neutral industry, require a constant and intensive commitment in the field of standardization. This also applies to new technologies that complement and, in some areas, even replace existing traffic and transportation systems.

The environmental aspect of aerospace related-activities is increasingly becoming the focus of the industry and the public. Zero-emission flying, hydrogen propulsion, sustainability and the circular economy are just a few of the topics that would require much greater effort to achieve without standards being available at an early stage, and which are already being addressed in current and future standardization projects. The EU chemicals regulation REACH, for example, has led to new requirements regarding the use of chemicals in materials and processes, and thus also to a need for action in respect of both existing and new standards.

In the young and rapidly growing market of unmanned aircraft systems (UAS), standards can act as a catalyst for innovation and ensure high quality, comparability, safety and trust. The same applies in the field of new air mobility (e.g. urban air mobility, advanced air mobility) for the development of so-called air cabs and the infrastructure required for them, such as vertiports.

The exchange of technology and a common, understandable technical language through standards is becoming increasingly important as new transportation concepts build on existing technology. The development of the Hyperloop system, for example, relies on numerous borrowings from the aerospace industry, as it essentially involves „flying in a tube“. The requirements for passenger cabins and cargo compartments are very similar to those of airplanes.

The multitude of complementary transport systems in the future will result in a high demand for standards involving interfaces, transfer points and consistency of traffic and transport networks on an unprecedented scale. This includes comprehensive and coordinated fleet management as well as the necessary booking and logistics systems.

In the age of high-tech materials, the increasing and sustainable use of fibre-reinforced composites in the construction of aircraft, helicopters, launch vehicles and satellites is leading to new and innovative manufacturing processes and test methods for which international standardization is beneficial due to global manufacturing and procurement markets.



Standardization – by experts for experts

The preparation of standards is a service offered by DIN to its stakeholders.

Standards are prepared at national, European and/or international level on submission of a proposal and after evaluation by the stakeholders. The content of the standards is not developed by the staff of the standards committee, but by the experts of the stakeholders.

At present, approximately 400 experts from industry, science and research are shaping the content of aerospace standards by actively participating in the different working committees of the DIN Standards Committee Aerospace where they are involved in preparing new national, European and International Standards and updating the approximately 4900 existing aerospace standards.

Advantages of active participation in NL:

- Strategic marketing instrument: direct influence on the technical contents of standards applicable at international, European and/or national level
- Early recognition of developments, trends and market opportunities and thus reduction of the risks involved in research and development
- Direct participation in the regulation of converging technologies
- Establishing contacts to colleagues working in the same field or in different fields of interest as well as to competitors on a technically neutral basis
- Using positive impulses to transfer knowledge to the market by timely standardization
- Opportunity to successfully establish technologies and innovations in the market

Interested? Then get involved!

Actively participating in the standardization process gives you a leading edge in terms of knowledge, and the ability to reduce costs and therefore pursue market entry strategies.

We are happy to welcome committed experts from industry, research and public administration to our working committees.

Office

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