An introduction to standardization

A practical guide for small businesses

DIN

DIHK Deutscher Industrie- und Handelskammertag

ZDH ZENTRALVERBAND DES DEUTSCHEN HANDWERKS

FOREWORD

From standards user to standards maker – Even small businesses can take part!

Actively taking part in standardization brings many advantages for companies of all sizes. Standards help clarify product characteristics and promote cooperation among market participants. Standards are the lingua franca of technology and innovation, providing solutions for free global trade in goods and services. European Standards open up the EU Single Market, while international standards provide access to global markets. Standardization can serve as a catalyst for innovation, and helps bring solutions to the market. Standards define interfaces and compatibility requirements. Anyone who ignores standards runs the risk of falling behind the competition.

Using standards brings clear advantages – participation in developing these standards even more so. Those involved in standards work come in direct contact with specialists in other areas. Companies active in standardization thus gain a competitive lead and a preview of what's going on the market. Standards are also used to define safety requirements and give technical detail to the more general provisions laid down in legislation such as European Directives or national laws. This makes active involvement in standards work even more important for businesses in all areas. Standardization is an important strategic tool for decision-makers and management leaders alike.

But small and medium enterprises (SMEs) often find it hard to keep up with and become involved in standardization. This is why the Association of German Chambers of Commerce and Industry (DIHK) and the German Confederation of Skilled Crafts (ZDH) advocate a greater involvement of SMEs in standardization. DIN supports this work by providing special services for small businesses such as the SME Help Desk and the SME Commission (KOMMIT), in which DIHK and ZDH are represented. KOMMIT works together with SMEs to develop new strategies and possibilities for SMEs to take part in standardization. To help smaller companies become more involved in standardization, this guide defines important terms and explains fundamental processes in standardization at all levels. Providing essential information that is easy to understand, this guide is crucial for strengthening the participation of small businesses, technical associations and chambers of commerce in standards work.

DIN
German Institute for Standardization

DIHK
Association of German Chambers of Commerce and Industry

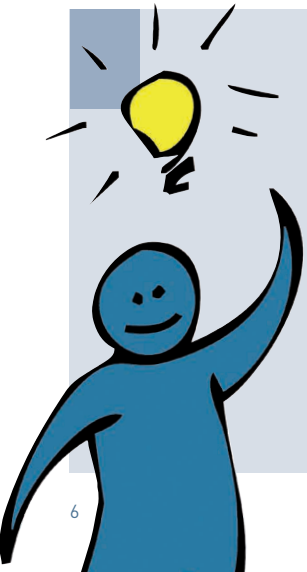
ZDH
German Confederation of Skilled Crafts

TABLE OF CONTENTS

1. ECONOMIC BENEFITS OF STANDARDIZATION

Gain a knowledge lead – Get involved in the standards-making process

The voluntary nature of standards supports self-regulation by industry and reduces the legislative burden on the state. By actively taking part in standardization, companies can help shape technical rules to better reflect their own interests while at the same time ensuring safety interests, such as environmental and consumer protection and occupational health. Getting involved in standards work brings companies in direct contact with specialists in other areas. Influencing the content of standards brings competitive advantages and a preview of what's happening on the market. This increases investment security. And working together with those shaping research and development helps lay the path for bringing new technologies on the market.



ADVANTAGES
of participating in standardization:

- → Represent your own interests
- → Gain a knowledge lead
- → Exchange information with other stakeholders
- → Monitor the competition
- → Gain recognition for your company

ADVANTAGES
of using standards:

- → **Easier market access**
- → **Increase efficiency and lower costs in all business areas** (e.g. construction, production R&D, design, purchasing, quality assurance)
- → **Improve product safety**
- → **Reduce product liability risk**
- → **Enjoy a high level of customer trust by meeting quality requirements**
- → **Simplify contract negotiations**

Legal security through standards

The use of standards is voluntary. Although standards are not legal provisions, they do become legally binding when they are part of a contractual agreement between parties, or where their use is required in legislation. Standards are unambiguous, generally accepted rules of technology. This lends greater legal certainty to contracts that refer to standards. In some cases, the use of standards can become mandatory, for example in general terms and conditions of purchase for suppliers. Even if compliance with DIN standards does not constitute a release from liability, it is an important step towards demonstrating due and proper conduct *(see Section 5 "Standards and the law")*.

Access to global markets – Standards are the global language for technology

Standards are the lingua franca of technology, providing internationally recognized solutions for safety, health and protecting the environment. In international business transactions, standards can help ...

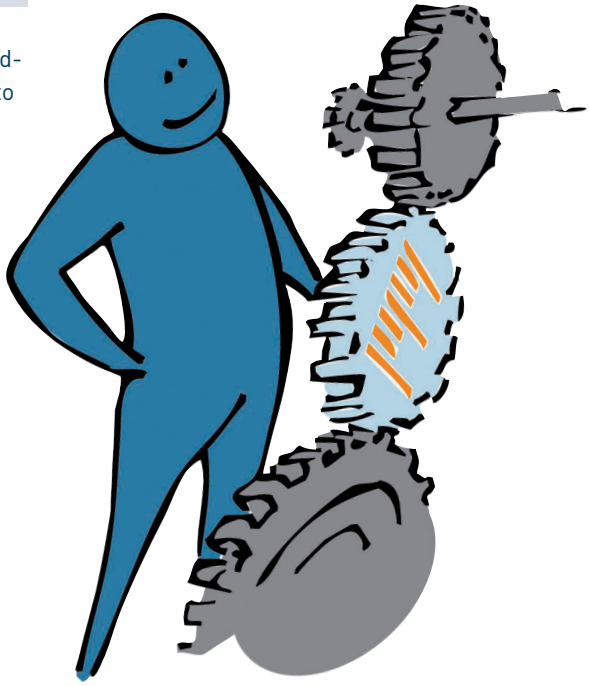
- → **build mutual trust between customer and supplier,**
- → **ensure compatibility and high quality,**
- → **lower barriers to trade and successfully implement international trade agreements.**

This allows companies to market their products throughout the world without having to adjust to national requirements.

The aim in the EU is: "One standard, one test – accepted throughout Europe". Uniform European Standards have significantly eliminated technical barriers to trade within the European Union.

This has helped strengthen Germany's position as an exporting nation, not least thanks to Germany's strong involvement in standardization at all levels. In fact, the economic benefits of standardization for Germany have been quantified as being equal to 1% of Germany's GDP.

www.din.de/go/benefits-for-the-private-sector

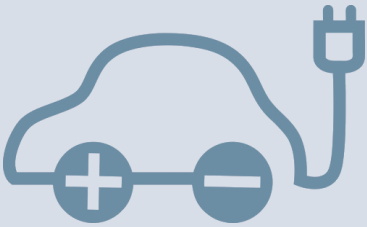


Standardization as a catalyst for innovation

The ability to implement new ideas and research findings as innovative products, methods and services is decisive for competitive ability. Standardization can serve as a catalyst for innovation, and helps bring solutions to the market by defining interfaces and compatibility requirements. They are also important for new fields of technology, such as Industry 4.0, electromobility and smart cities as well as for the development of new products and services. Standards also create trust between users and market participants.

Innovative companies use standardization as a strategic instrument for increasing the marketability of their products. Standardizing aspects of an innovative product can play a key role in preparing the market for that product. Using European Standards opens up possibilities for new products on the European market and ensures compatibility with existing systems. Deciding on how to use standards and patents for innovative solutions is a fundamental aspect of any company strategy.

EXAMPLE



*One example of how standardization can be used to bring market success for an innovative area such as e-mobility is **DIN SPEC 70121**. This specification describes the communication between charging stations and electric vehicles using the "Combined Charging System". In the interest of harmonizing this technology on both sides of the Atlantic, DIN decided to make this DIN SPEC available for free to SAE International, the US automotive and aerospace standards-setting organization. This will help enhance the export opportunities for both German and US companies.*

DIN SPEC 70121

2. HOW ARE STANDARDS DEVELOPED?

Standards describe the state of the art at the time of their publication. They specify properties, test methods, safety requirements, dimensions, etc.

	How standards are designated in Germany *(see Section 3)*
DIN	German Standard developed solely at national level and that has primarily national significance
DIN VDE	National electrotechnical standard containing requirements relating to safety and/or electromagnetic compatibility (EMC) are adopted in Germany as DIN Standards "with VDE classification".
DIN ISO **DIN IEC** **DIN ISO/IEC**	German publication of an International Standard published by ISO and/or IEC and which has been adopted unchanged into the collection of German standards.

DIN EN

German publication of a European Standard which has been adopted unchanged by all members of the European standardization organisations CEN/CENELEC/ETSI.

DIN EN ISO

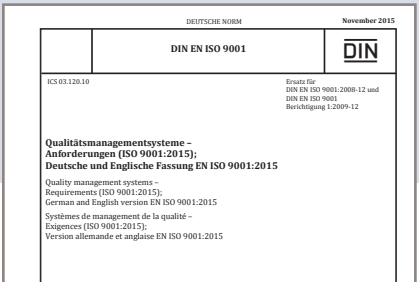
German publication of a European standard that is identical to an International Standard and which has been adopted unchanged by all members of the European standardization organisations CEN/CENELEC/ETSI.

Prior to their publication, all DIN Standards are made available to the public for commenting. During this "public inquiry" stage, the document is referred to as a "draft" standard, and the letter "E" (for "Entwurf", German for "draft") is placed before the designation.

DIN SPEC

When time is of the essence:
Unlike standards, a DIN Specification, or "DIN SPEC" does not require the participation and full consensus of all stakeholders. The development of a DIN SPEC is especially suitable for highly innovative topics and helps accelerate the transfer of knowledge and technology.

For more information on DIN SPEC and the latest specifications published, go to
www.din.de/go/success-with-standards.



DEUTSCHE NORM November 2015

DIN EN ISO 9001

DIN

ICS 03.120.10

Ersatz für
DIN EN ISO 9001:2008-12 und
DIN EN ISO 9001
Berichtigung 1:2009-12

**Qualitätsmanagementsysteme –
Anforderungen (ISO 9001:2015);
Deutsche und Englische Fassung EN ISO 9001:2015**

Quality management systems –
Requirements (ISO 9001:2015);
German and English version EN ISO 9001:2015

Systèmes de management de la qualité –
Exigences (ISO 9001:2015);
Version allemande et anglaise EN ISO 9001:2015

Standards you probably know

DIN EN ISO 9001	This standard is recognized around the world. It is almost impossible to imagine a business world functioning without it, as a properly working quality management system boosts customer confidence, makes processes more transparent and increases the general performance and capabilities of an organization.
DIN EN ISO 216	Although most people won't recognize the number of this standard, they use it every day: DIN EN ISO 216 lays down the paper formats used in most countries of the world. The A4 paper size – originally specified in Germany as "DIN A4" – is one of the first subjects ever standardized.
DIN EN 124	You may have seen this number while walking down the street: Look down, you're standing on it! European Standard EN 124 – published in Germany, for example, as DIN EN 124 – specifies the sizes of gully covers and manhole tops.
DIN 5008	This standard is probably one of the most widely used in Germany. Every secretary – and anyone else who has anything to do with business correspondence – uses this standard on formats and writing styles for business letters and other professional documents. One example of the practical uses of DIN 5008: The recipient's address is guaranteed to fit into the window of a standard envelope if the letter has been written in accordance with DIN 5008.
DIN 13157	Be ready for any emergency – with the help of first aid kit "C" in accordance with this standard. DIN 13157 lists requirements for the box itself and what it is to contain: scissors, bandages and disposable gloves for medical purposes. In Germany, use of this standardized first aid kit is often legally required, for instance for safety at the workplace.

USEFUL TERMS

Standardization

→ Standardization is a systematic process by which tangible or intangible subjects are harmonized by the joint efforts of the stakeholders for the benefit of society as a whole. Because of its well-proven full consensus processes, standardization has a high democratic legitimation and complies with anti-trust legislation.

Standard

→ A standard is a document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results.

Informal, or limited consensus, standardization

→ In Germany, a differentiation is made between full consensus ("Normung") and limited consensus ("Standardisierung") standardization. The latter includes the development of documents such as specifications or technical reports in a shorter process. The involvement of all stakeholders is not required, nor is the publication of a draft for public commenting.

DIN Specification

→ A DIN Specification, or DIN SPEC, is a standards deliverable describing products, systems or services, and drawn up according to an informal standardization process (e.g. PAS).
www.din.de/go/success-with-standards

State of the art

→ According to DIN EN 45020, the state of the art is a "developed stage of technical capability at a given time as regards products, processes and services, based on the relevant consolidated findings of science, technology and experience".

Acknowledged rule of technology

→ According to DIN EN 45020, an acknowledged rule of technology is a "technical provision acknowledged by a majority of representative experts as reflecting the state of the art". A standard is assumed to be an acknowledged rule of technology at the time of its approval.

How are standards developed?

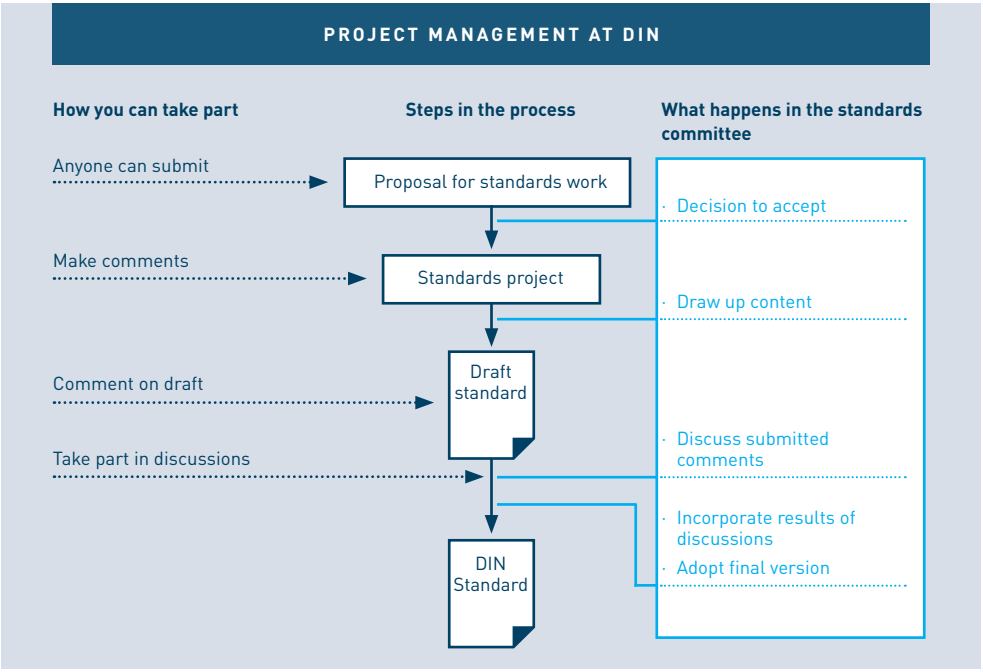
DIN Standards are the results of work at national, European or international level. Anyone can submit a proposal for the development of a new standard. Standards are drawn up according to set rules of procedure, in Germany by the relevant DIN Standards Committee, the relevant Technical Committee of the European standards organization CEN (CENELEC for electrotechnical standards) or the relevant committee at the international standards organization ISO (IEC for electrotechnical projects).

All stakeholders can take part in work on a standard. "Stakeholders" in standardization include manufacturers, consumers, tradespersons, researchers and scientists, insurance companies, government agencies and testing bodies. Companies and organizations send their experts to participate in the relevant working bodies of a standards developing organization. At DIN, there are 70 standards committees, each responsible for a different subject area. National interests are represented at European and international level within CEN and ISO, respectively. Being the national body responsible for standardization within Germany, DIN sends experts and national delegations to represent German interests. At DIN, staff members are responsible for coordinating work at national, European and international level.

DIN Standards are reviewed at least every five years. If a standard no longer reflects the current state of the art, it is either revised or withdrawn.

How to participate in standards work

There are many different ways to take part in standardization. The nature of this participation depends on one's interests and resources.



List of DIN standards committees:
www.din.de/go/standards-committees

1. Proposal for developing a standard
Anyone can submit a proposal for standards work; at DIN this must be done in writing. The proposal must be well-founded and should be as concrete as possible. If a need for the standard is established and financing is secured, the proposal is given the status of a "standards project". The project is then assigned to a working body for development. At DIN there are over 3,600 working groups and committees. If necessary, a new committee is founded.

2. Drafting the standard in a working body
Any organization or company can send experts to DIN to work on a standard. However, all participants in this work must pay a fee to cover the project management carried out by DIN staff. In many cases, companies agree to send an expert from a technical association to represent their joint interests. A draft standard is then drawn up in consensus, taking the state of the art into consideration. Not all meetings need to be attended in person: Increasingly, virtual meetings are held, allowing experts to participate from their own workplace.

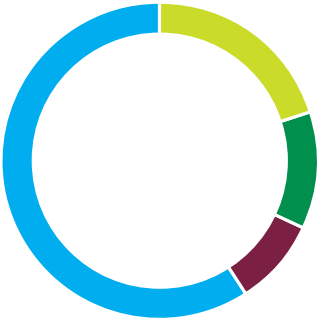
The DIN website lists all current standards projects for each committee, including details such as the project content, starting date, responsible working body and contact information.

List of DIN Standards Committees:
www.din.de/go/standards-committees

3. Commenting on drafts
Once the draft standard is published, there is a period of 2 to 4 months during which comments can be submitted; this is sometimes called the "public enquiry" period. For German-speakers, DIN's free draft standards portal can be used to submit comments.
www.din.de/go/entwuerfe

DIN's website also lists the draft standards that are at commenting stage for each standards committee.

List of DIN Standards Committees:
www.din.de/go/standards-committees



INCOME STRUCTURE
(EXEMPLARY FOR 2015)

Own income	ca. 59%
Private funding	ca. 20%
Public funding	ca. 12%
Membership fees	ca. 9%

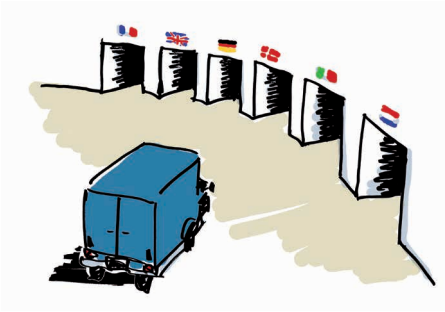
Financing standards work at DIN

DIN provides extensive services, such as supporting experts in their work, managing standards projects, and representing German interests at meetings held throughout the world, in some cases by holding the secretariat of an international working body. The cost of these services amounts to roughly 74 million euros per year.

The indirect cost of these services, e.g. overhead costs, is financed through DIN's own income, primarily from the sales of standards. The direct costs – such as personnel costs, travel costs, and non-personnel costs (e.g. interlaboratory tests) – are covered by project funds from the private and public sectors, with private project funds making up the largest part.

This way, by purchasing standards the users themselves contribute to the financing of standards work. Companies and organizations who send experts to work in the committees also contribute in the form of project funding or fees.

For more information:
www.din.de/go/financing-standards-projects



European standardization – A cornerstone of the European Single Market

The main goal of European standardization is to unify all standards that apply within Europe. Standards developed at European level must be adopted unchanged by all national standards bodies that are members of CEN, the European Committee for Standardization. Any conflicting national standards must be withdrawn. Over the past 30 years this principle has reduced the total number of standards in Europe from 150,000 to about 20,000.

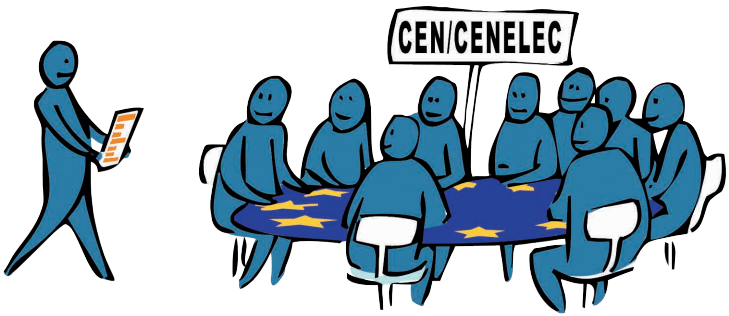
In addition, a standard that has been developed at international level can be simultaneously adopted as a European Standard by means of parallel voting procedures in accordance with the Vienna Agreement. Such standards are to be automatically adopted by the national standards organizations.

Adopting International and European Standards as national standards facilitates export, because this removes most national technical barriers to trade. Companies who make and test products and perform services according to European or International Standards place them on international markets without any other restrictions. Because they remove barriers to trade, European Standards, are a cornerstone of the European Single Market. They also help improve consumer protection, environmental protection and occupational health & safety.

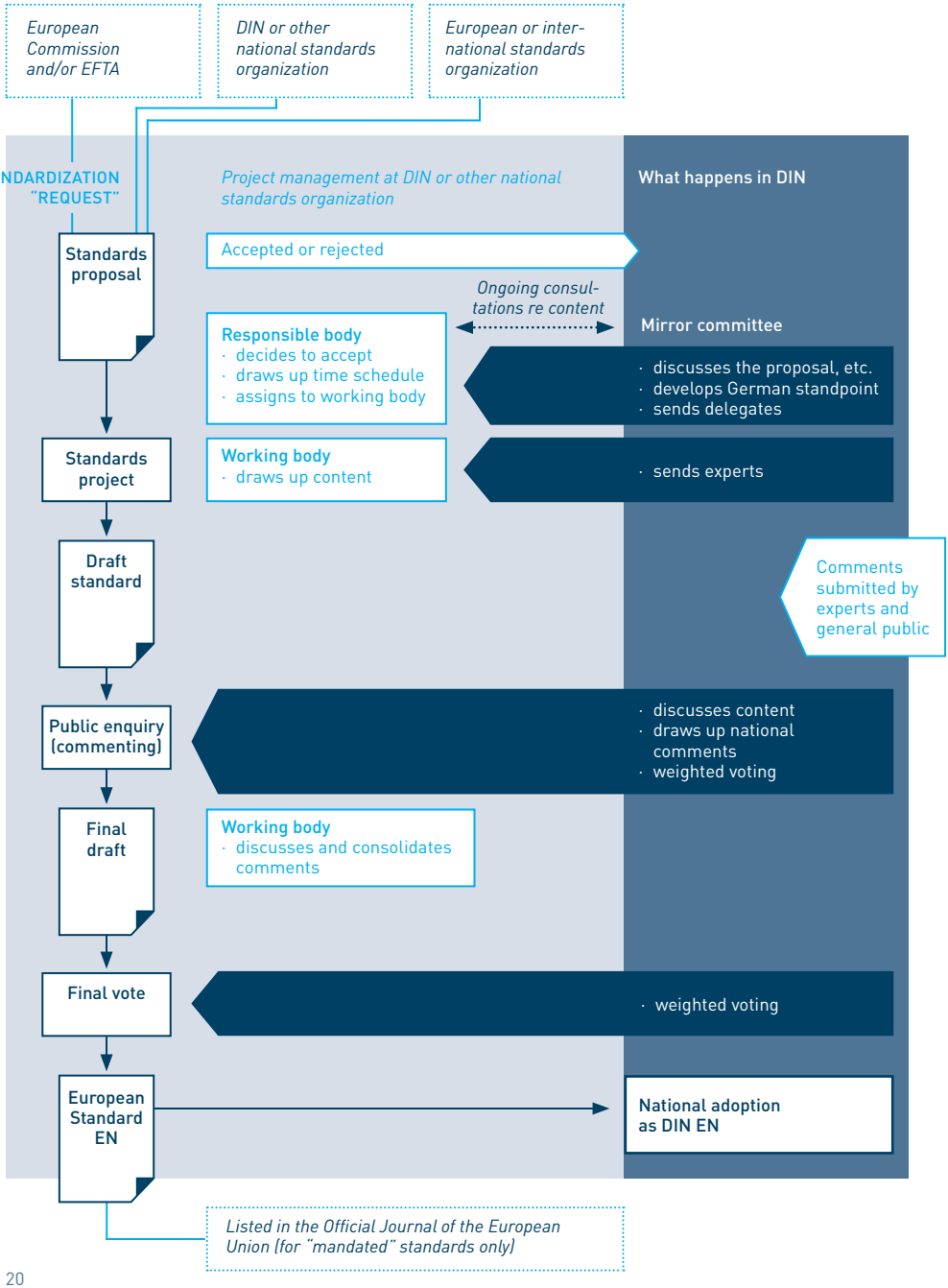
The national delegation principle

European Standards are developed according to the national delegation principle, with each country sending a delegation of experts to represent the national standpoint. In Germany's case, DIN sends the delegation. This standpoint is drawn up in national committees that "mirror" the committees at European or international level. Stakeholders can thus work together in their own native language – a definite advantage. By taking on the secretariat of an international or European committee, national members (such as DIN) can play a leading role in the committee's work. It is often decisive for national interests to be effectively represented at an early stage of the development of a European Standard.

The national delegation principle gives stakeholders a direct line to European standardization, while at the same time supporting self-regulation by industry. For example, European directives only lay down essential requirements. These are given technical detail in European Standards. This way, industry can itself shape the technological solutions that implement the directives.



Development of a European Standard



USEFUL TERMS

The New Approach

→ The aim of the EU's "New Approach" to standardization is to harmonize technical standardization within Europe. According to the New Approach, European Directives specify essential safety and health requirements which are then given more technical detail in the harmonized European Standards that are implemented at national level. At present there are about 30 "New Approach" European Directives. Harmonized European Standards are developed on the basis of a standardization "request" (formerly called a "mandate") by the European Commission. Users of a harmonized standard can presume that they meet the essential requirements of the respective directive ("presumption of conformity") if they comply with the standard.
For more information: *www.newapproach.org*

Harmonized European Standard

→ Harmonized European Standards are those drawn up on the basis of a standardization "request" (formerly called a "mandate") by the European Commission (or EFTA). Roughly 19% of all European Standards are "harmonized" standards.

These standards give detail to the more general "essential safety and health requirements" laid down in European legislation such as the directives. Lists of harmonized standards are published in the Official Journal of the European Union (OJEU). In each harmonized standard, the relationship between it and the relevant directive is described in an Annex. Compliance with a harmonized European Standard means that it can be assumed that the essential requirements of the respective directive(s) have been met. Although products and services in accordance with harmonized European Standards must be accepted in all EU member countries, the use of such standards remains voluntary. However, manufacturers who do not comply with these standards must provide another form of proof that the essential requirements of the directive have been met.

USEFUL TERMS

Standardization "request"

→ A request for standardization (formerly called a "mandate") is issued by the European Commission or the EFTA to one or more of the European Standards Organizations (CEN, CENELEC and ETSI) who then decide whether to accept or reject the request. In most cases, these requests call for the development of a European Standard to implement a European directive or regulation. Mandated standards projects follow the same procedure as for other European standards projects. Often, external consultants are called in to make sure the standard conforms to the directive or regulation.

CE marking

→ CE marking demonstrates conformity with the essential safety requirements laid down in EU legislation (such as directives). According to the New Approach, certain European directives refer to harmonized standards that describe technical solutions for meeting the requirements of that directive. The CE mark is to be applied by the manufacturer or exporter, or their representative. Some directives require conformity assessment by a neutral third party, called a "notified body", before the marking can be applied.

By applying the CE mark a manufacturer declares on his/her sole responsibility that the product meets all the legal requirements and can thus be placed on the EEA market. It should be noted that the CE mark is not a quality mark, nor does it indicate that the product was made in Europe. As such, it is not intended for the end consumer. Other marks are used to indicate quality, such as the German "safety tested" seal ("GS" mark).
For more information: *www.eu-richtlinien-online.de (German only)*

Certification

→ Certification is the attestation by a neutral party that a product, process, system or person meets specified requirements. (From DIN EN ISO/IEC 17000)

Conformity assessment

→ This is the demonstration that specified requirements relating to a product, process, system, person or body are fulfilled. It includes activities such as testing, inspection and certification, and the accreditation of conformity assessment bodies. (From DIN EN ISO/IEC 17000)

Accreditation

→ According to EC Regulation No 765/2008 EC, accreditation is the "attestation by a national accreditation body that a conformity assessment body meets the requirements set by harmonized standards and, where applicable, any additional requirements … to carry out a specific conformity assessment activity".

WTO "Code of good practice for the preparation, adoption and application of standards"

National, European and international standards organizations are obliged to adhere to the WTO's "Code of good practice" regarding standardization:

- → **No preference is to be given to domestic products**
- → **National standards shall not obstruct international trade**
- → **Relevant International Standards are to be adopted nationally**
- → **International standards are to be developed by national delegations**
- → **Duplication of work is to be avoided**
- → **International standards are to be developed with national consensus**
- → **The body of standards is to be consistent**
- → **Work programmes are to be published**
- → **For the public there shall be a period for submitting comments to drafts**
- → **All comments are to be given equal treatment**

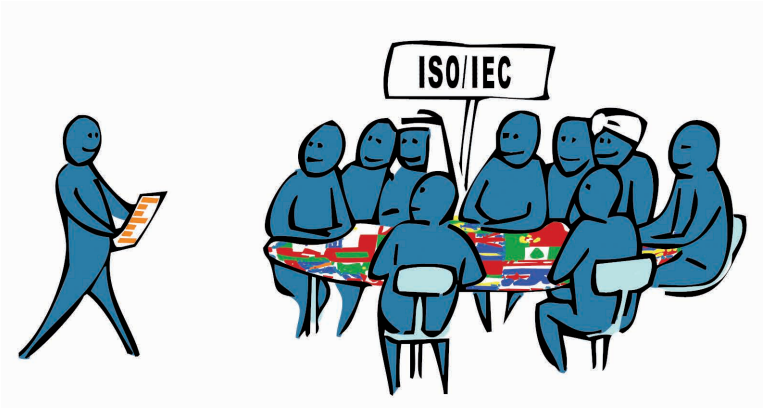
International standardization – Removing barriers to trade

International Standards describe safe technical solutions, increase safety at the workplace and help protect the environment. They provide a framework for global markets and a common technical language. The development and use of International Standards is recommended by the World Trade Organization (WTO) as a means of preventing technical barriers to trade due to national standards.

DIN represents German interests in the International Organization for Standardization (ISO), while DKE, the German Commission for Electrical, Electronic and Information Technologies of DIN and VDE represents Germany in the International Electrotechnical Commission (IEC). As with European standardization, national "mirror" committees decide whether or not to take part in international standards work. They develop the German standpoint, send experts to represent this standpoint, and often lead project work by taking on the "secretariat" of the relevant international working body. The mirror committees also decide whether or not an International Standard should be adopted as a national standard – this is voluntary, as opposed to European Standards, which must be adopted nationally. To avoid duplication of work and to harmonize European and international standardization, agreements have been signed between the international and European standards organizations.

Between CEN and ISO: The Vienna Agreement (1991)

Between CENELEC and IEC: The Dresden Agreement (1996)



National forewords

When an International and/or European Standard is adopted at national level as a DIN Standard, it is (usually) translated into German and a national foreword is added. The national foreword contains important information for users applying the standard in Germany, for example:

- → The responsible working body in DIN
- → Why the standard has been revised (where relevant)
- → Relationship with other German technical rules
- → Relationship with German legislation
- → Relationship with European directives
- → References to other important publications
- → Amendments made compared with the previous edition
- → Any transition periods
- → Editorial information, e.g. regarding the German translation
- → Any essential national particularities, e.g. additional information or requirements
- → Any other information relating to the use of the standard in Germany

3. IMPORTANT STANDARDS ORGANIZATIONS

DIN German Institute for Standardization

By agreement with the German Federal Republic, DIN is the acknowledged national standards body that represents German interests in European and international standards organizations. DIN is the German member of CEN and ISO. DIN staff manage standards projects at national, European and international level. DIN provides its stakeholders with a platform for developing standards and specifications as a service to industry, the state and society as a whole.

More than 32,000 experts from German industry, research, consumer protection and the public sector work together at DIN to develop standards and specifications.

DIN DELIVERABLES:

DIN Standard
(national)

DIN EN Standard
(European Standard adopted in Germany)

DIN EN ISO Standard
(European adoption of an ISO Standard)

DIN ISO Standard
(Adoption of an ISO Standard in Germany)

DIN SPEC
(specification that does not require full consensus and can be drawn up faster)

www.din.de/en

DKE German Commission for Electrical, Electronic & Information Technologies

DKE, an organ of DIN and VDE, develops standards and safety regulations for the electrotechnical and IT sectors. DKE is the German member of CENELEC and IEC.

DKE work results are an integral part of the body of German Standards. Electromagnetic compatibility (EMC) standards developed by DKE are an integral part of the VDE code of technical rules.

DKE DELIVERABLES:

DIN Standard
(national)

DIN (VDE) Standard
(national electrotechnical standard containing requirements relating to safety and/or electromagnetic compatibility (EMC))

DIN EN (VDE) Standard
(European Standard adopted in Germany)

DIN IEC (VDE)
(Adoption of an IEC Standard in Germany)

www.vde.com/en/dke

Other German organizations that issue technical rules

In Germany, a number of technical associations issue their own technical rules. Many of these organizations work closely with DIN's standards committees in order to represent the interests of their sector in national, European and international standardization. Some of these are:

- **Verein Deutscher Ingenieure – VDI** (Society of German Engineers)
- **Verband Deutscher Maschinen- und Anlagenbau e. V. – VDMA** (Mechanical engineering and plant association)
- **Deutsche Vereinigung des Gas- und Wasserfaches e. V. – DVGW** (German Technical and Scientific Association for Gas and Water)
- **Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e. V. – DWA** (German association for water, wastewater and waste)
- **Deutscher Verband für Schweißen und verwandte Verfahren e. V. – DVS** (German Association for Welding and Allied Processes)
- **Deutscher Ausschuss für Stahlbeton – DAfStb** (German Committee for Reinforced Concrete)

European standards organizations

CEN
European Committee for Standardization

CENELEC
European Committee for Electrotechnical Standardization

Together, CEN and CENELEC provide a platform for the development of European Standards.

Each European country is represented in CEN and CENELEC by its national standards body, with one member per country. Germany is represented by DIN (in CEN) and by DKE (in CENELEC).

The decision to actively participate in standards work at European level is made within the national committees. The work is carried out in national "mirror" committees, where the national standpoint on a subject is formed. National delegations are sent to CEN or CENELEC to represent that standpoint.

www.cen.eu
www.cenelec.eu

Another European standards organization

ETSI – European Telecommunications Standards Institute

www.etsi.org

International standards organizations

ISO
International Organization for Standardization

IEC
International Electrotechnical Commission

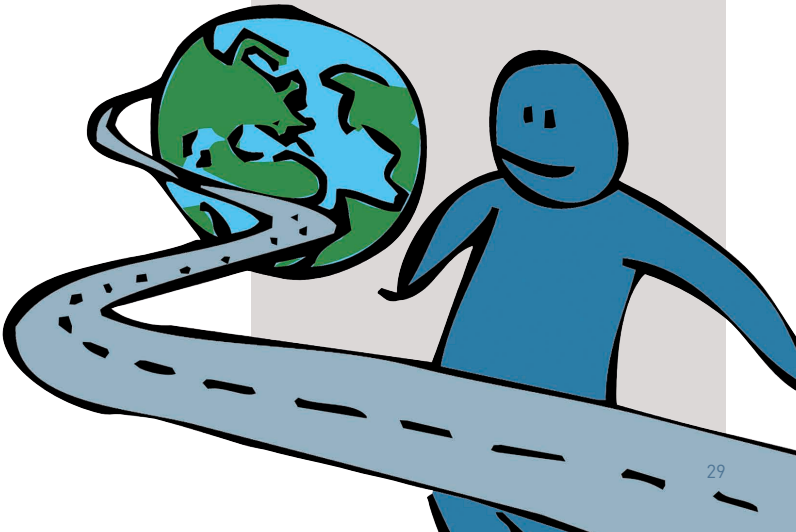
ISO and IEC are networks of national standards organizations. They are private organizations made up of national members, with one member per country. Germany is represented by DIN in ISO, and by DKE in IEC. International working bodies are led decentrally by secretariats in countries all over the world. DIN holds many ISO secretariats. The decision to actively participate in standards work at international level is made within the national committees.

www.iso.org
www.iec.ch

Another international standards organization

ITU International Telecommunication Union

www.itu.int

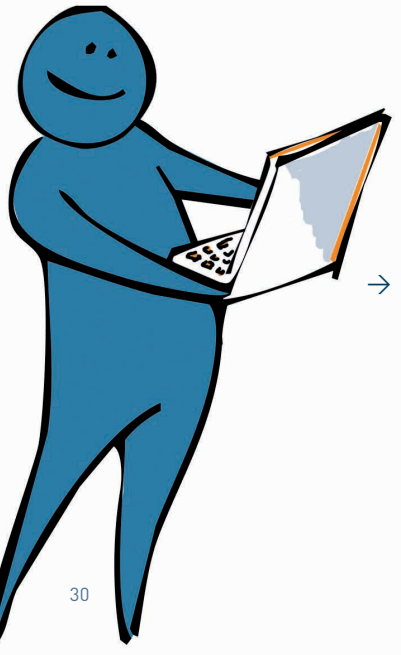


4. WHERE CAN I GET STANDARDS AND MORE INFORMATION ON STANDARDS?

DIN's publishing house, Beuth Verlag, sells DIN Standards and technical rules published by other organizations from all over the world. Over 450,000 documents can be searched and ordered online at *www.beuth.de*. Most documents can be downloaded directly from the webshop. Prices for standards are based on the number of pages and are set by DIN's Presidial Board. Income from the sales of DIN Standards helps finance DIN's work. DIN Standards are subject to copyright – for example, they are not to be copied for distribution within a company. Various network licences are available, please contact Beuth Verlag for more information.

Beuth offers a variety of services and publications:

- → **Network licences**
- → **General technical literature**
- → **Standards management solutions**
- → **Subscriptions**
- → **Flat rates**



Other sources for documents and information about standards:

→ **Standards Info Points:** There are over 110 "Info Points" throughout Germany, many of them in university libraries. Here users can search and view the entire collection of DIN Standards and other technical rules for free. In most cases the documents are available in electronic form only. At some Info Points documents can also be purchased.
www.din.de/go/normen-infopoints (German only)
www.beuth.de/DIN-Auslegestellen

→ **Beuth standards management solutions:** Beuth Verlag offers a number of solutions for every need, budget and sector. Especially interesting for SMEs:
Standards Ticker information and update service – with optional document delivery – is an ideal tool for small and medium size businesses to keep their standards databases up-to-date. For more information go to
www.standards-management.eu

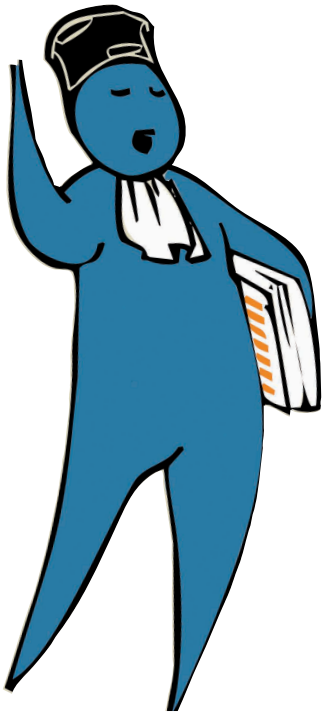
→ **Beuth's Foreign Standards Service (ANS)** supplies standards and other technical rules issued by over 200 standards-setters and publishers from across the world, including ASME, ASTM and SAE in the US, JSA in Japan, GOST in Russia, and many more.
www.beuth.de/en/standards/foreign-standards

→ **VDE VERLAG:** Electrotechnical standards issued by DKE are part of the "VDE Specifications Code of Safety Standards". Many of these are available in English and can be purchased from the VDE Verlag webstore.
www.vde-verlag.de/english.html

→ **DIN standards portals:** With over 30,000 standards it is sometimes not so easy to find the right document. DIN has several online portals giving information on and access to standards in a specific area:
The **"Normenportal für das Handwerk"** provides easy access to standards for the trades, organized by sector.
(German only) ***www.handwerk.din.de***
The **"Composites standards portal"** – hosted together with the German trade association "Composites Germany" – lists standards and standardization activities relating to composites.
www.din.de/en/services/standards-portals/composites

→ **Technical associations such as VDMA, ZDB and the ZVEH** offer their members comprehensive standards collections at attractive prices. These and other associations in Germany offer online standards information systems with tools for searching and using standards, sometimes combined with update services.

5. STANDARDS AND THE LAW



Legal significance of standards

Anyone can use DIN Standards, and their use is voluntary. They only become mandatory if they are referred to in contracts, laws or regulations. In addition, contract partners may choose to make the use of a standard binding.

Even where DIN Standards are not expressly named in a contractual agreement or law, they are often used to settle legal disputes, especially in product liability cases. Courts use standards to help decide whether or not the manufacturer has followed the acknowledged rules of technology and thus has exercised "due diligence".

Standards are thus recommendations which, when followed, provide legal certainty.

Standards can help determine if a product is "fault-free"

Technical standards play a special role in commercial law because courts can use them to help determine whether a product is defective or not. Written by neutral experts, standards describe what it takes to make a good or service "fault-free". Because courts deem DIN Standards to be acknowledged rules of technology, they often assume a product has been manufactured with due care if it complies with the relevant standards. However, where the use of a standard has not been made mandatory, non-compliance

does not necessarily mean the product is defective. After all, products can be manufactured with due care even where standards have not been consulted, especially as their use is voluntary. In such cases, the seller or manufacturer has to find another way to prove that the product fulfils the customary requirements. If this cannot be done, then the buyer can assert statutory warranty rights. These rights include the removal of the fault, delivery of a fault-free product, or compensation for any damages arising from the absence of warranted characteristics.

In exceptional cases a product may be deemed faulty in a legal sense even if it complies with the relevant technical rules. This is the case, for example, if further legal provisions apply that are not laid down in the standard, or if certain risks have not been considered in the standard.

Liability: Standards can be used as a measure of determining fault and allocating damages

According to the German law of torts, manufacturers are liable for damage to property and personal harm resulting from faults in their product. Here, courts can use standards to determine whether a product is faulty or if the manufacturer is liable for damages.

The German Product Liability Act
If a product is faulty and leads to bodily harm or the damage of goods, the manufacturer of the product is legally liable for compensation. This means the manufacturer is held responsible for any damages caused by use of the product. This non-contractual liability applies when anyone uses the product and suffers damages. In such cases, technical standards play an important role in determining any faults in the product.

Liability without fault ("strict liability")
If a faulty product causes damages or leads to bodily harm, then according to tort law, the manufacturer is liable if he/she is at fault and cannot prove that this is not a case of a negligent dereliction of duty. One advantage for manu-

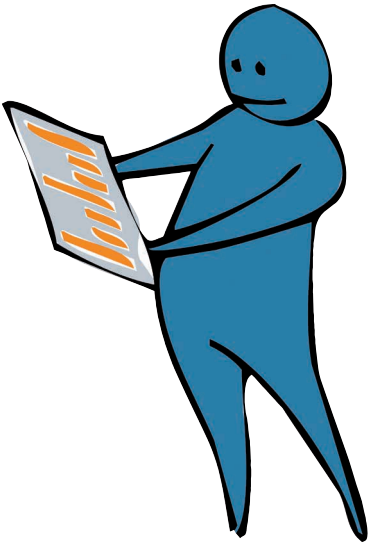
facturers who use standards is that they can prove they are in keeping with the acknowledged rules of technology because they complied with the relevant standards. The judge can then take the use of standards as "prima facie evidence" that the manufacturer has exercised "due diligence" in making the product.

"Presumption of conformity" in German and European law

Many European directives and German legislation lay down essential requirements for products, which are then given more detail in standards. Although the use of standards which are referred to in legislation does not absolve one of liability, the "presumption of conformity" principle applies. This means that when a manufacturer complies with legal provisions laid down in a directive or law by applying the relevant standards, it can be presumed that the product is in conformance with these provisions and can thus be placed on the market.

European Standards (e.g. DIN EN or hEN Standards)
The presumption of conformity that comes from applying harmonized European Standards refers to conformity with EU legislation, such as EU Directives or EU Regulations, that specify "essential safety and health requirements" for products. Products that meet these requirements bear the CE mark.

German national standards (DIN Standards)
In Germany, when a good or service complies with a national German Standard, it is presumed that it is fault-free. Furthermore, according to German case law, there is a rebuttable presumption that valid DIN Standards reflect the "generally accepted rules of technology".



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DIN – Nicole Adomeit, Tina Manske
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